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INSTITUTIONS FOR BETTER EDUCATION

INSTITUTIONAL COMPARISONS IN EDUCATIONAL PRODUCTION

LUDGER WÖßMANN *

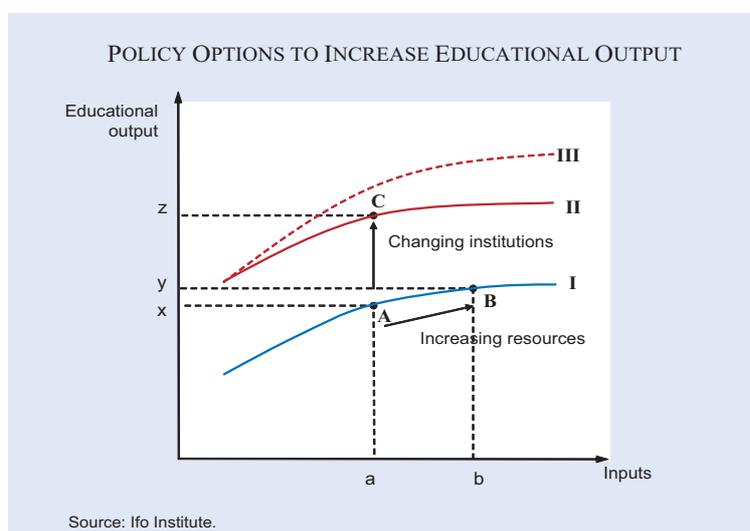
Education is a fundamental determinant of individuals' and societies' economic performance. This gives vital importance to the question of how high educational performance can be achieved. Economists like to think about the process which generates educational performance as a production process. This is not a disregard of humanistic views of the specific value of each human being. Instead, with all esteem for the dignity of each individual, thinking in terms of educational production can help to understand, and hopefully ultimately improve, how education systems work and how student learning might be furthered. Thus, think of how the "output" of the education process – students' learning achievement – is "produced" by several "inputs" in the education process – e.g., the students' family background, class sizes and teacher characteristics.

Education production functions

The figure depicts such "education production functions". For example, at point *A*, an amount *a* of inputs is transformed into an amount *x* of outputs. Traditionally, economic research on educational production has focused on how an increase in the amount of resources that schools are endowed with affects educational output. Such resource

increases might take the form of smaller class sizes, classrooms equipped with better facilities, better-educated, higher-experienced or better-paid teachers. Unfortunately, an extensive literature on the effects of resources on student performance comes to the conclusion that resource effects are very small at best at the levels of resource endowment currently reached in developed countries (e.g., Gundlach et al. 2001; Hanushek 2002; Wößmann 2004; Wößmann and West 2004). Substantially increasing the amount of resource inputs from *a* to *b* has generally been found to increase educational output only slightly – say, to point *B*, where output is increased from *x* to *y*. The returns to additional spending are very small on the existing education production function *I*. The education system is producing at a level of strongly decreasing returns. The education production function is virtually flat.

This lack of evidence on substantial resource effects begs the question of how, then, student performance can be increased. In this production-function perspective, an obvious possibility would be, instead of moving along a given production function, to shift the whole production function upwards. If we found a way not to produce on function *I* any longer, but rather to shift to function *II*, we could produce at point *C*, which has much higher educational output *z* at the given input level *a*. In order to reach such a higher production func-



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tion, the whole way in which educational production takes place has to be transformed, giving rise to different institutions of the education system.

(As an aside: Some reforms might not only shift the production function upwards, but also make it more steeply sloped, such as production function *III*. At such a production function, we would not only get higher output at given input, but also, any given movement along the new production function would result in a larger increase in output. That is, institutional reforms might also lead to a production function where each additional input is transformed more productively into outputs, so that on the new production function, spending more money might be more worthwhile.)

Institutions and educational performance

Fortunately, substantial research in the economics of education over recent years has moved in the direction of analyzing which institutional structures might shift the education production function upwards, allowing to produce higher educational outputs at given input levels. Institutional economics quite generally suggests that by determining the incentives that the actors of a system face, institutions (the rules and regulations of a system) can have a large impact on the system's output. More specifically, if the actors in the education process are rewarded for producing better student performance and if they are held accountable for not producing high performance, this will improve performance. The need for proper institutional frameworks may be particularly crucial in educational production, because public schools dominate the production of basic education all over the world. Like other command and control systems, public school systems per se may arguably not set major incentives for improving students' educational performance or for containing costs.

Recent research has focused on three groups of institutions that may be able to create performance-conducive incentives: choice, accountability and teacher incentives. Further focus has been placed on the preparation of students at the pre-school level and the selectivity of the education system. The contributions in this Forum of the DICE Report on "Institutions for Better Education" span topics in all these areas, and the DICE Report has also previously reported on research

on specific institutional effects in educational production. To provide a frame-setting overview of the institutions relevant in educational production and to put the different contributions in perspective, the following paragraphs briefly refer to recent contributions on the topic.

Competition, parental choice and school autonomy

Competition in the education system, which allows for parental choice among autonomous schools, can create incentives for schools to improve performance (cf. Hoxby 2003a for a recent collection of research on school choice). Thus, school vouchers (coupons for the attendance of private schools), discussed in DICE Report 4/2003, are one institutional feature that enhances school choice and has been shown to improve the educational performance of disadvantaged children in the United States (Peterson 2003).

Hoxby (2003b) summarises ample evidence from recent policy experiments in the United States that shows that school choice and school competition, among others in the form of vouchers and charter schools (relatively autonomous public schools that give parents additional choice), improve the performance not only of these schools, but also of the public schools that compete with them. Similarly, increased competition among US public schools has been shown to improve student performance (Hoxby 2000). Bradley and Taylor (2002) and Levačić (2004) find similar positive effects of school competition on the performance of English schools. Estimates of international education production functions, which exploit the substantial cross-country variation in institutional features, also show that the cross-country pattern of student performance is positively related to competition from privately operated schools and to school autonomy in personnel and process decisions (Wößmann 2003a).

In this Forum, Nechyba provides an additional analysis of the effect of school choice on school quality in the US school system (cf. also Nechyba 2000). In addition, Psacharopoulos compares private and public university systems. All these contributions to the research on institutional effects in educational production suggest that competition, choice and school autonomy may indeed be institutions that can shift the education production function of the figure upwards.

Testing and accountability

Testing of and accountability for student performance are another way to create performance-conducive incentives, in particular by providing information to students, parents and potential employers (Bishop and Wößmann 2004). As cross-country research reported in DICE Report 4/2003 reveals, external exit exams are a powerful accountability device which improves educational performance and constitutes a precondition for decentralised systems of autonomous schools to function properly (Wößmann 2003b).

In this Forum, Figlio and Hanushek report additional evidence on positive performance effects of grading standards and accountability systems in the United States. The research by Hanushek shows that the introduction of state-wide accountability systems that measure school performance improved student performance in the United States (cf. also Hanushek and Raymond 2004). Figlio provides evidence that US students perform better where teachers have high grading standards (cf. also Figlio and Lucas 2004). Again, institutional features that introduce accountability by testing what students and schools deliver seem to be a way to shift education production functions to a higher level.

Teacher incentives

Arguably, apart from the students themselves, teachers constitute the most important “input” in the education production process, in terms of both cost and content (Rivkin et al. 2004). Therefore, incentives for teachers to perform well may be expected to improve their effort and the quality of their teaching. Recent evidence by Lavy (2002) shows that contracts providing monetary incentives for teachers based on their students’ performance indeed improved student learning in Israel immensely. By contrast, the fact that teacher unions in the United States considerably reduce the productivity of educational production (Hoxby 1996) may give an indication of what happens in places where teacher incentives are weak. In this forum, Dolton summarises research on how school systems can recruit high-quality teachers.

Pre-school and selectivity

Two additional institutional features of an education system that have received research attention

recently are the extent of pre-school programs and the selectivity of the education system. Surveying different human capital policies over the life cycle, Carneiro and Heckman (2003) stress the importance of early childhood investments. In issue 4/2003, the DICE Report has reported on early childhood education and care in different countries (Kamerman 2003). Tentative recent evidence suggests that the extent of pre-school education may be particularly important for the cross-country variation in equality of performance of children from different family backgrounds (Schütz et al. 2004).

The same is true for the selectivity of school systems in terms of the age at which they track their students into different school types by ability. Galindo-Rueda and Vignoles (2004) analyse the effects of changes in school selectivity in the British school system. Brunello’s contribution to this forum deals with the question of selective versus comprehensive school systems more generally.

In summary, recent research has gathered considerable evidence that institutional structures that create performance-conducive incentives through competition, accountability and teacher incentives can improve the output of the education process. As they are generally conceived to increase output at given input levels, they are a way to shift the education production function to a higher level, as depicted in the figure. The structure of pre-school education and the selectivity of the school system seem to be further institutional features which affect educational production in important, particularly distributive ways. Of course, there are considerably more details to how each institutional feature affects educational production in practice, and the cited references provide some information on such details. But the general importance of institutions for the success of educational production stands beyond doubt.

The European Expert Network in Economics of Education (EENEE)

The research surveyed in this article suggests that institutional comparisons are an important way to enhance our understanding of crucial aspects of educational production. Consequently, there is considerable scope for learning from other countries, both because some countries have introduced institutional reforms not yet tried in other countries and because

important institutional features (such as central exam systems) often do not provide any variation within countries, precluding empirical analyses within individual countries. This is why the topic of this whole “Journal of Institutional Comparisons” (as well as of the CESifo Database for Institutional Comparisons in Europe, DICE), namely institutional comparisons, is such a vital issue. The contributions in this forum provide an application of this research method to the field of educational production.

A recent endeavour that tries to further such research on international institutional comparisons in the economics of education, in Europe and beyond, is the European Expert Network in Economics of Education (EENEE). EENEE is a network of leading European centres and experts on economics of education sponsored by the European Commission and coordinated at the Ifo Institute for Economic Research at the University of Munich. EENEE aims to contribute to the improvement of decision-making and policy development in education and training in Europe by advising and supporting the European Commission in the analysis of economic aspects of educational policies and reforms. In particular, EENEE is dedicated to creating an exchange platform for education economists and anyone interested in the economics of education in Europe which functions to a considerable extent through its website, www.education-economics.org. At this site, interested readers will be able to find numerous additional references and keep abreast with future work on the topic of this forum: institutional comparisons in the economics of education.

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STRATIFIED OR COMPREHENSIVE? SOME ECONOMIC CONSIDERATIONS ON THE DESIGN OF SECONDARY EDUCATION

GIORGIO BRUNELLO *

Most secondary school systems in the developed world consist of an initial period of exposure to the same curriculum followed by diversification of curricula into separate tracks. In Europe, there are vocational and general or academic tracks, with allocation into tracks often based on previous performance and/or ability tests.¹ Vocational education is directly related to a specific occupation, with a substantial part of the curriculum devoted to learning practical skills to be used immediately upon graduation. General education has no immediate connection with any occupation, but provides basic knowledge that can be used to learn different occupations.

Table 1 is based on Hannan, Raffe and Smyth (1996) and classifies countries according to the degree of standardization and stratification of secondary education. Standardization is low in North America relative to Europe. Tracking starts relatively early, after primary school, in Germany and the Netherlands and later on in France and Italy. In the United States secondary schools are comprehensive but it is common practice to separate students into different courses or course sequences (tracks) based on their level of achievement or proficiency as measured by some set of tests or course grades (Gamoran 1987). In Japan, stratification starts at the post-compulsory stage in upper secondary education, with elite schools at the top and vocational schools at the bottom of the hierarchy.

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¹ See Shavit and Müller (1998) and Green, Wolf and Leney (1999).

This heterogeneity in the structure of secondary education raises questions about the relative efficiency and equity of alternative school designs. Some economists and sociologists view stratification as a mechanism of class reproduction and social exclusion. Their view is based on evidence from several countries that tracking impedes equality of educational and occupational opportunity. According to Shavit and Müller (1998) lower-class students are placed in lower tracks and have fewer chances of attending university and finding access to high prestige occupations.



Table 1

Stratification and standardization of secondary education in Europe and North America

	Low standardization	High standardization
Low stratification	USA, Canada	Japan, Scotland, Ireland, Sweden, England
Intermediate stratification	Spain	France, Finland, Italy, Israel
High stratification		Germany, Austria, Switzerland, Denmark, Netherlands

Source: Hannah, Raffe and Smith (1996).

Efficiency is also an issue, and international differences in school design have recently been associated by economists to differences in economic performance. Krueger and Kuman (2002), for instance, have argued that the emphasis placed by Europe on specialized, vocational education may reduce the rate of technological adoption and lead to slower economic growth than in the United States, where the schooling system provides more general and comprehensive education. The broad idea pursued here is that general education is more suitable to induce technical change. Since general education is more flexible and versatile than vocational education, it also encourages organizational change and the adoption of high performance holistic organizations in production (Aghion, Caroli and Penalosa 1999).

While the effects of school design on technical and organizational change are certainly important, it is also important to ask whether and how these changes can affect in turn school design. The timing of tracking changed in several European countries after the Second World War. In the UK there was a shift in the mid-1960s from selection at 11 to selection at 16. In Germany, where tracking by ability starts relatively early, reforms in the 1970s increased compulsory education from 8 to 9 years, in an effort to make the system more comprehensive (Müller, Steinmann and Ell 1998). In France, direct orientation to apprenticeships after two years of lower secondary school was abolished in the 1980s (Goux and Maurin 1998). All these reforms have gone in the direction of delaying tracking. Moreover, the fraction of the population in vocational secondary education to that in general secondary education has continually declined in most of post-war Europe.

Technical progress leads to skill depreciation, and the degree of obsolescence is likely to be higher the more specialized and tied to a specific set of techniques skills are. While skills learnt in vocational schools can be easily transformed into the corresponding occupations in the labor market, they are less flexible and transferable than general skills. Therefore, rapid technical progress should discourage vocational, relative to general and more versatile, education. As argued by Aghion, Caroli and Penalosa (1999) organizational change is skill biased. Non-hierarchical firms rely on direct, horizontal communication among workers and on task diversification as opposed to specialization. They hence require multi-skilled agents, who can both perform varied tasks and learn from other agents' activities. One clear implication of organizational change is the relative demand shift toward more general and versatile skills (upskilling), which are better provided by general education.

In order to think of the effects of technical and organizational change on efficient school design, we need to ask what are the economic factors shaping the optimal timing of school tracking. In a recent paper, my co-authors and I have characterized with a stylized model the optimal timing as the outcome of the trade-off between the advantages of specialization, which call for early tracking, and the costs of early selection and technical obsolescence, which call instead for later tracking (Brunello, Giannini and Ariga 2004).² We have also

used the model to study how relative demand shifts toward more general skills and changes in the rate of technical progress affect the optimal tracking time as well as the allocation of students to vocational and general tracks.

Tracking is associated to selection, and the key factor in the selection process is perceived ability. In Germany, "... the decision about school track is taken by both parents and the local educational authorities ... but children's measured ability remains the most important factor determining the selection process. This takes the form of a primary school recommendation for a secondary school track, generally based on a pupil's marks in the core subjects of German and mathematics ..." (Schnepf 2002).³ In a world of imperfect information, selection conveys information about individual ability to the labor market.

Tracking also leads to ability grouping, with higher-achieving students being separated from lower-achieving students. It is still an open issue whether separating students into different tracks leads to better educational outcomes than mixing students of different ability. Epple, Newlon and Romano (2002) briefly review the empirical literature and conclude that, relative to the outcomes of mixed classes, students assigned to low tracks are hurt by tracking while those assigned to high tracks gain. As shown by Hoxby (2001), peer effects have distributional effects but no efficiency implications if individual outcomes, such as human capital, are affected linearly by the mean of peers' outcomes in that variable. Efficiency implications can only be drawn from models which are either nonlinear in peers' mean achievement or in which other moments of the peer distribution matter (Hoxby 2001).

When peer effects are non-linear, tracking has a positive "specialization" effect. In the absence of a countervailing factor, however, positive specialization would lead to immediate tracking. There are several balancing factors one can think of. In an environment characterized by uncertainty about labor market outcomes, one such factor is the option value of waiting: by delaying the tracking time the government can reduce the risk of producing at school on obsolete set of competencies.

² See also Brunello and Giannini (2003).

³ Stratification by ability in Germany starts at age 10, when pupils are allocated to the general track (Gymnasium) or to the vocational track (Hauptschule and Realschule).

Another factor is obsolescence, which reduces the value of skills as new techniques and blueprints are introduced. It is plausible that this reduction is more significant for vocational than for general and more versatile skills. Yet another factor is that the allocation of individuals to tracks is affected by noise in the selection process, and that the relative importance of noise is higher the earlier the selection takes place.

Misallocation due to imperfect testing reduces both the quality of the signal offered by schools to the labor market and the peer effects in human capital formation. As remarked by Judson in 1998⁴ “... innate ability is measured with difficulty and with increasing clarity as education proceeds. Any test given will be a noisy signal, and the less education the person has had, the noisier the signal will be. Before primary school it is very difficult to discern levels of talent, but identification of talent is easier after a few years of primary school, still easier after high school, and so on...” (p. 340). The earlier selection is carried out, the higher the risk of misallocating individuals to the wrong track. We call this the “noise” effect of tracking. The trade-off between the positive “specialization” and negative “noise” and obsolescence effects generates an endogenous optimal tracking time.

In our paper, we focus on the German institutional setup and study how the optimal tracking time and the relative share of graduates from general schools vary with changes in the size of the peer effect, the noise in the selection process, the rate of technical progress and the upskilling of labor from less to more general and versatile tasks. We simulate a calibrated model to investigate the effects of the following experiments: a) a 25 percent decline in the rate of productivity growth, a proxy of the rate of technical progress, which corresponds to the decrease experienced by (West) Germany between the early 1980s and the late 1990s (Gust and Marquez 2002); b) a 10 percent increase in the relative demand shift towards more general and versatile skills, captured by the increase in the German wage bill share of non-production workers between 1970 and 1990 (Berman and Machin 2000); c) a 10 percent increase in the size of the peer effect; d) a 10 percent increase in the noise parameter regulating the allocation process. The results are reported in Table 2. The figures in the table are percentage deviations from the baseline solution.

Table 2

Simulation results: Percentage deviations from the baseline

	Deviation in the optimal tracking time from the baseline	Deviation in the optimal size of the vocational track from the baseline
-25 % reduction in productivity growth	-16.10	0.70
10 % increase in the demand for skilled labor with broad competencies	-12.90	-13.10
10 % increase in the size of the peer effect	-29.03	2.80
10 % increase in the size of the selection noise	38.71	-2.10

It turns out that the optimal tracking time is affected negatively by the decline in the rate of productivity growth, and by the relative demand shift toward more general and versatile jobs. In more detail, we find that a 25 percent reduction in productivity growth triggers a 16.1 percent decline in the optimal tracking time. We also find that a 10 percent increase in the demand for skilled jobs reduces tracking time by 12.9 percent. If we simulate the combined effect of these two changes, we obtain that the optimal tracking time should decline by 22.6 percent.

Starting from four years of comprehensive school before selection into tracks, which corresponds to the German situation in the early 1970s, these simulations imply that the optimal tracking time should have been anticipated further by the end of the century to about 3 years of comprehensive school in order to accommodate the slowdown of productivity growth and the relative demand shift toward more general and versatile jobs. In practice, however, during this period “...reforms have attempted to narrow the gap between the Hauptschule and the other tracks through prolongation of compulsory education from eight to nine years and by introducing additional subjects into the curriculum...” (Müller, Steinmann and Ell 1998, 145). These reforms can be interpreted as a prolongation of the comprehensive period and as a delay of the tracking period.

We see two ways to reconcile our simulations with the observed trends in German school design. The

⁴ See also Bedard (1997).

most natural way is to argue that either the size of peer effects has declined or the noise in the selection process has increased, perhaps as a consequence of the substantial inflow of immigrants. As shown in Table 2, the efficient tracking time is very sensitive to changes in these two parameters. The other way is to interpret the current trends as deviations from the efficient policy, driven perhaps by distributional and equity concerns. If the observed equilibrium is a political equilibrium driven by majority voting rather than the efficient outcome which maximizes total net output, tracking can also be delayed if the majority of students are in the vocational track, as in the case of Germany, and face the risk of obsolescence of their vocational skills.

Our simulations show that the relative share of graduates from vocational tracks is marginally affected by changes in productivity growth but varies significantly with changes in the demand for skilled labor. In particular, a 10 percent increase in upskilling is expected to increase by 18.1 percent the share of graduates from the generalist track. We conclude from this that the widespread academic drift, which characterizes both Germany and other developed countries, can be interpreted as the response of school design to the relative demand shift toward more general and versatile skills.

Conclusions

I have argued that optimal tracking is the outcome of the trade-off between the advantages of specialization and the costs of early selection and skill obsolescence. Drawing on the calibrated model by Brunello, Giannini and Ariga (2004), I have simulated how endogenous school design should vary with the significant changes in the rate of technical progress and in the relative demand for skilled and versatile jobs which occurred in Germany during the last twenty years of the century.

The simulations suggest that the relative share of graduates from general schools should have significantly increased, which confirm the existing evidence on academic drift in secondary schools. They also suggest that the efficient tracking time should have been anticipated by close to percentage points, which is not what has happened in Germany since 1970. I speculate that either other key parameters have changed in the required direction – a reduction in the size of peer effects and/or an increase in the

noise of the selection test – or that the observed policies have deviated from efficiency considerations, perhaps because of distributional concerns.

A tentative conclusion is that equity considerations play a more important role than efficiency in policy decisions concerning the tracking of secondary schools. After all, the reforms of secondary schools which took place in Italy and the United Kingdom during the 1960s were not driven by efficiency considerations, but by the concern that premature tracking could increase social stratification and exclusion.

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RECRUITING HIGH-QUALITY TEACHERS

PETER DOLTON *

The recruitment and retention of high quality teachers must be one of the main education policy priorities of any government. Not least because research has confirmed the importance of teacher quality and the detrimental effect that excessive teacher turnover may have on student achievement and performance. The future development of the next generation of adults rests in the hands of those currently teaching our children. The central questions to resolve are how can the education system recruit and retain the high-quality teachers it needs and what is the role of pay and other incentives intended both to attract people to the profession and to keep them.

Many countries have experienced recurrent crises in the recruitment and retention of teachers and in many there is a more or less continuous shortage of teachers, notably in secondary schools and in the most technical subjects. The shortage tends to be particularly acute in subjects like maths, science and modern languages and in specific geographical areas, where the “opportunity wage” for would be teachers is much higher. A growing body of economic research on the labour market for teachers is seeking to understand these shortages and provide insights into potential policy measures.

Every country needs a relatively large number of teachers, as on average, in OECD countries 2.6 percent of the total labour force are teachers (OECD 2004). In

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most countries this means the education sector is the largest employer of university graduates. Accordingly, teachers pay is the largest component of a country’s educational expenditure with an average of 63 percent of the educational budget in 2000.

In any consideration of the quality of teachers we must be aware of the forces of supply and demand and the decisions governments choose to make about desirable pupil teacher ratios, teacher working hours, the length and quality of teacher training, teacher pay and incentives and the other non-pecuniary conditions in teaching which must be affected by government educational spending priorities.

In this paper I provide a brief overview of the teacher labour supply problems across OECD countries and focus on evidence from the UK to illustrate the arguments in a more detailed way by referring to the considerable research which has been devoted to this policy issue.

The demand for teachers

The first key element in the demand for teachers is the demographic pattern of pupil numbers, which fluctuates all the time with changing fertility patterns. In most OECD countries projected numbers of pupils will be falling over the next 5–10 years.



Figure 1

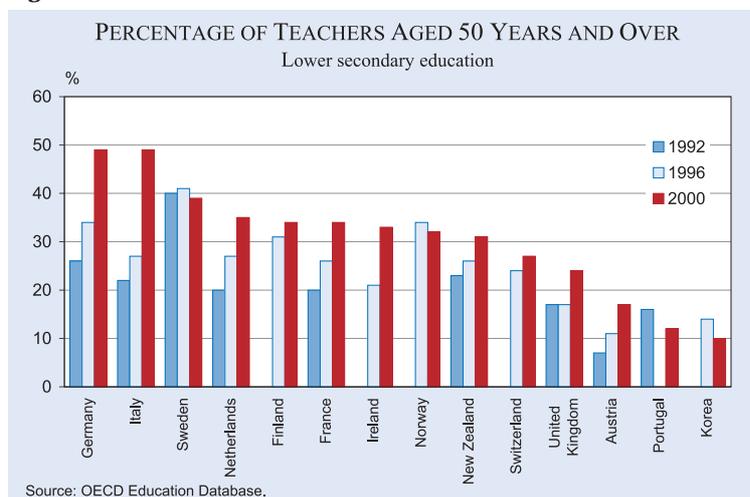
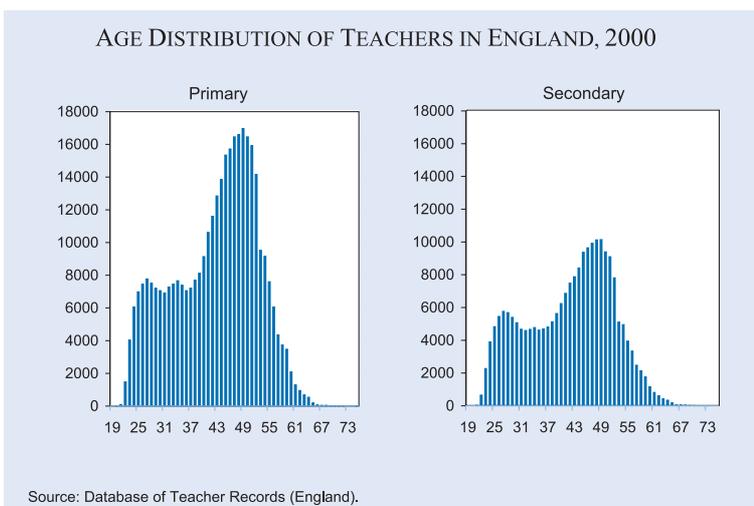


Figure 2



The second demographic trend affecting the demand for new teachers relates to the age distribution of the stock of existing teachers. Figure 1 shows that in many OECD countries the teacher stock is aging as an increasing proportion of teachers in 1992, 1996 and 2000 are over 50.

Figure 2 shows the age distributions of primary and secondary teachers in England in 2000. 40 percent of all teachers are aged 45–55, and those aged over 55 account for another 6 percent of the workforce. Within the next ten years, nearly 50 percent of the current workforce is likely to have retired. Since, the number of pupils is not forecast to decrease significantly, at the current level of recruitment into teaching, a large shortage of teachers is therefore predicted.

A third factor in the demand for teachers is the size of class the government chooses for its pupils. This varies remarkably across countries as Figure 3 shows that pupil/teacher ratios in primary schools are over 30 to 1 in some countries and as low as 12:1 in Denmark. This will not only condition the demand for teachers but the quality of the teaching which is imparted to the children, as larger classes may mitigate against individual attention. In many OECD countries pupil/teacher ratios have been falling. In the USA average class size was 23 in 1965 – but this has fallen to 16 by 2000. This represents a dra-

matic growth in teacher supply over the last 35 years in the USA. In the UK primary class size had fallen continuously for 20 years to a low of 20:1 by 1985 – this has since risen to 24:1 by 2000. Of course what these aggregate figures hide are the increasing need for specialist teachers of subjects like ITC which are relatively new to the curriculum.

A fourth factor in demand is the governments choice of the length of the working day for teachers and how many teaching days there are in a year. Most coun-

tries make their elementary teachers teach between 650 and 800 hours in the year but some teach a lot more – including those in the USA. Figure 4 illustrates the variability of teacher hours in a year across countries and these differences must be reflected in the quality and intensity of the effort required of teachers in their job and hence the relative attractiveness of the job compared to alternatives.

Several other features may complicate the demand for teachers in different countries. First, if the financial administration of education is performed at a local level with autonomy and accountability then recruitment and retention will depend on local and school specific factors. Secondly, the determination of desired pupil-teacher ratios and teacher recruitment may be influenced by educational criteria at the state or local level. In some countries salaries are negotiated with trade unions that may have some influence over the final settle-

Figure 3

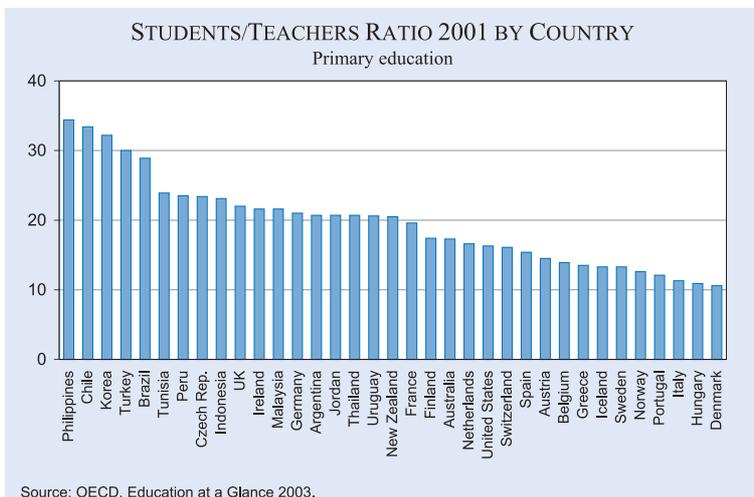
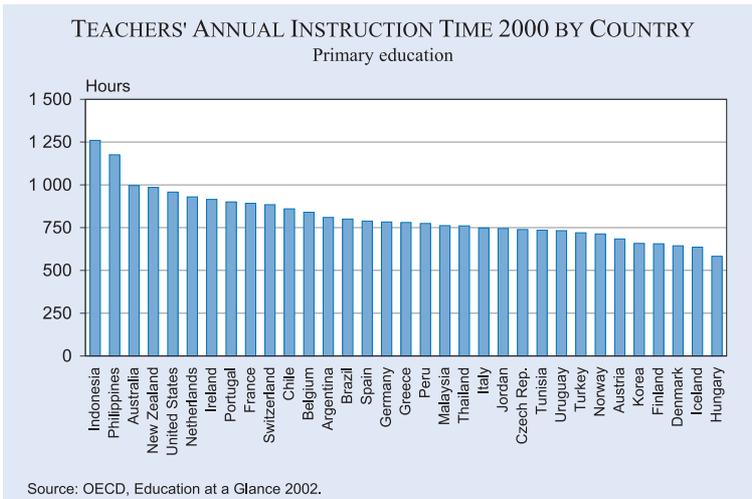


Figure 4



Empirical evidence of teacher shortage in different countries is not easy to find. Calculating the precise extent of the shortage (or surplus) of teachers in different countries is difficult. Under certain assumptions it is possible to get an indication of shortage for the UK. Figure 5 shows the demand for teachers calculated by taking desired pupil-teacher targets, as published by the government, and multiplying them by actual pupil numbers. Teacher supply is taken from government data on the number of teachers in service, and the “excess demand” – or teacher shortage – is the gap between demand and supply. This calculation suggests that in 2000, there was a national aggregate shortage of 34,000 teachers.

ment of pay and other working conditions – this may contribute to inflexibility in the teacher labour market. Thirdly, to some extent, the government can influence the retirement plans of existing teachers, perhaps by reforming pension rights.

Fourthly, most governments control the nature and length of teacher training – this can and has been changed in times of crisis. Finally different countries have different conventions about the extent to which school subjects, like mathematics may be taught by non-specialists. Clearly, allowing non-specialists to teach such shortage subjects will solve the short run problem of having a teacher in front of a class – but at what cost to the quality of teaching? All these factors may operate on the demand conditions in any specific country. Ultimately though the force of demand for teachers will depend on the political will that creates the policy on educational expenditure – since to a large extent teacher quality would not be a problem if a country was prepared to spend enough money. Naturally the political economy of public expenditure will mean that spending on teachers will always be balanced with the importance of spending on health, welfare, defence and other priorities. Hence, at different times in the history of each country, there have been problems with teacher demand outstripping supply but the government in question not necessarily prioritising expenditure on teachers enough to solve the problem.

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Figure 5 shows that there has been excess demand for teachers almost continuously throughout the post-war period in the UK. The main problem has been for secondary school teachers, although the difference in excess demand between primary and secondary school teachers disappeared towards the end of the 1990s. The 1970s are the only time in the post-war period when a (small) excess supply of teachers was apparent. In some cases, the demand for teachers appears to change sharply from one year to the next. This is not due to demographic change, but to modification of the official desired pupil-teacher ratio. Since a shortage of teachers appears to be a permanent feature, the remaining discussion focuses on the determinants of the supply of teachers.

Figure 5

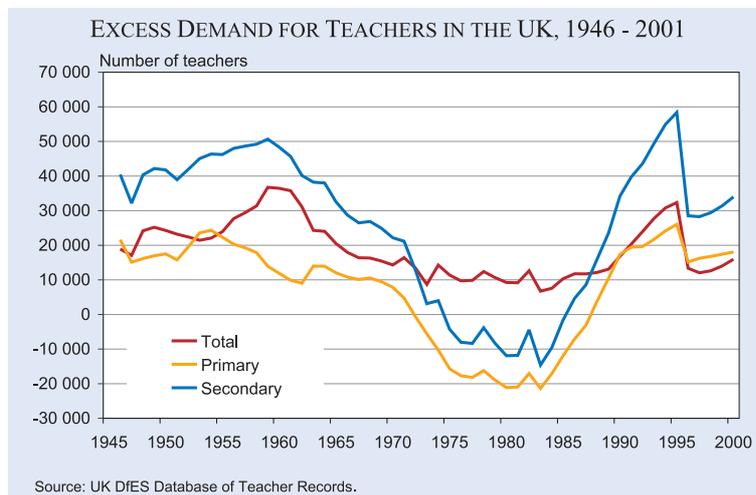
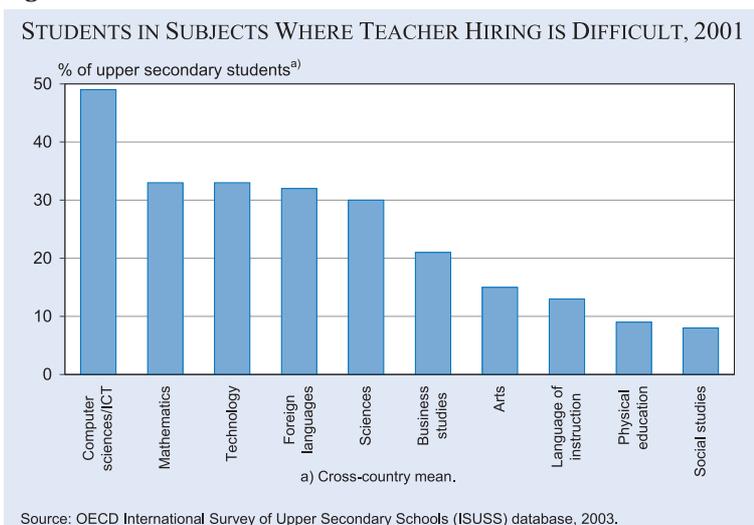


Figure 6

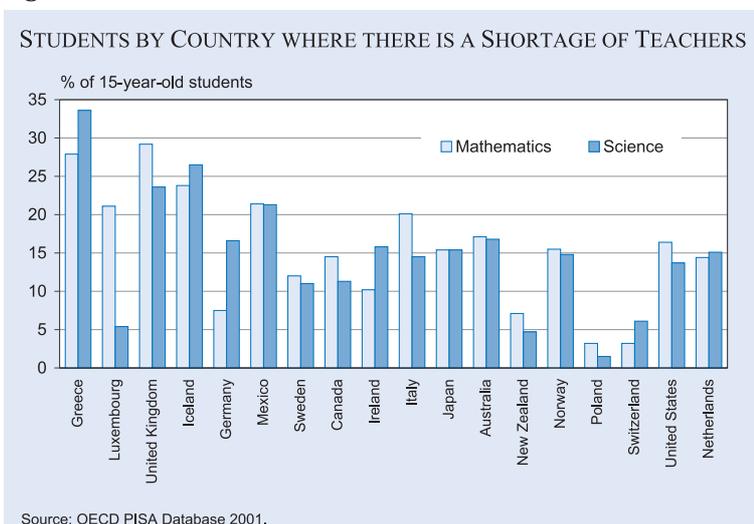


There is some evidence of teacher shortages by subject from data recently collected by the OECD (called the International Survey of Upper Secondary Schools, ISUSS). Figure 6 shows that school principals have found hiring particularly ICT, maths and technology, language and science teachers very difficult. In many countries principals also report that difficulties in teacher hiring will be affecting the learning of 15-year-old pupils. This is direct evidence on the quality of teachers and points to inadequacies in the recruitment. It also raises the issue of what determines teacher supply and will lead to a discussion of teacher pay.

Supply of teachers: quantity

Ultimately, the government has some control over the stock of teachers since it can determine how

Figure 7



many places are provided on courses at universities to train teachers.

Many factors influence the choice of whether or not to become a teacher. In the UK teacher training courses are not always filled, and attendance varies by subject. In the mid-1990s, there were 20 percent fewer students than targeted in initial teacher training courses for secondary school teachers, although this shortage has decreased to approximately 6 percent more recently. By subject, the shortage is highest in

maths, modern languages and geography with shortfalls ranging between 20 percent and 30 percent in 2000/1.

Measures to increase the retention of trainees and new teachers have been on the forefront of the political agenda on education. The most prominent measures are repayment of student loans for up to ten years and a hardship allowance for students in shortage subjects committed to becoming teachers, bursaries for undertaking and completing the Postgraduate Certificate in Education and “golden hellos” of £4,000 for new teachers in shortage subjects.

It is evident that the flow of newly qualified teachers does not necessarily indicate the level of overall supply. Focusing on those currently working as teachers ignores individuals who are available for (and possibly seeking) work in teaching, but who are not currently employed as teachers. Supply can be calculated as consisting of those entering the profession and those remaining in teaching from the previous year.

But the difficulty is not just recruiting teachers but keeping them in the classroom. Some trainees drop out and others decide not to become teachers. Smithers and Robinson (2003) showed that for 100 registered trainees, 88 passed the final examination, but only 59 were

teaching a year later. After three years, only 53 of the original trainees were still in the classroom. This wastage not only adds to the costs of providing teacher training but also has negative effects on child performance. The evidence is that higher teacher turnover is associated with lower educational pupil outcomes (Dolton and Newson 2003). This is of particular concern since we know that teacher turnover is highest in the most deprived areas. A further factor of concern is that male teacher wastage rates have been rising in many countries – and this of concern given the research which shows that a male role model may be good for male children and adolescents.

Supply of teachers: quality

One of the most important debates in education is whether teacher quality is high enough. While teacher quality is notoriously difficult to measure, research suggests that some teachers consistently perform better than others over time, showing that teacher effectiveness is an important determinant of pupil attainment.

But even if it is unclear whether teachers with better personal academic records or qualifications are necessarily better teachers, we need to be concerned about recruiting teachers from the lower end of the ability distribution. There is some evidence in the UK (Chevalier et al. 2001; Nickell and Quintini 2002) that teachers are being drawn from a lower part of the educational achievement or ability distribution than they were in the past. This clearly matters for teacher recruitment and for pupil performance.

It is hard to find direct evidence of the interrelation between teacher supply and shortage and the quality of teachers. One limited piece of evidence is that reported by the OECD (2004). Figure 8 comes from the OECD website. It shows how schools react when faced with a teacher shortage. In the usual course of events we would expect a school to advertise and hire a fully qualified teacher – if teachers are in short supply the school may resort to hiring a teacher with less than a full qualification, expanding the size of the classes, adding hours to other teachers courses or cancelling the planned courses. Figure 8 shows that these practices are frequently adopted in different countries. This must reflect on the quality of the teachers appointed and so it provides some evidence of the link between teacher shortage and teacher quality.

The issue of how to recruit better or smarter teachers and provide them with appropriate incentives is thus an important one. It is this we turn to next, beginning with a discussion of what has happened to teachers' relative wages through time.

Teachers' pay

The most important determinant of teacher supply is the relative wage on offer. There is a large body of econometric evidence which finds that relative earnings of teachers is a major factor in individuals decisions to become a teacher or remain in the profession. Figure 9 shows how variable teachers' wages are across countries by graphing average teachers' wages expressed as a proportion of GDP per head. This shows that there are some countries where teachers are earning approximately twice the national average GDP per head (like Denmark and Germany). Most countries pay their teachers between 1.3 and 1.7 times the GDP per head, including the UK, USA, Spain, Switzerland, and most other European countries. Clearly in some countries being a teacher accords a much higher earnings status than in others. This will reflect on the calibre of the people doing the job in that country.

Figure 8

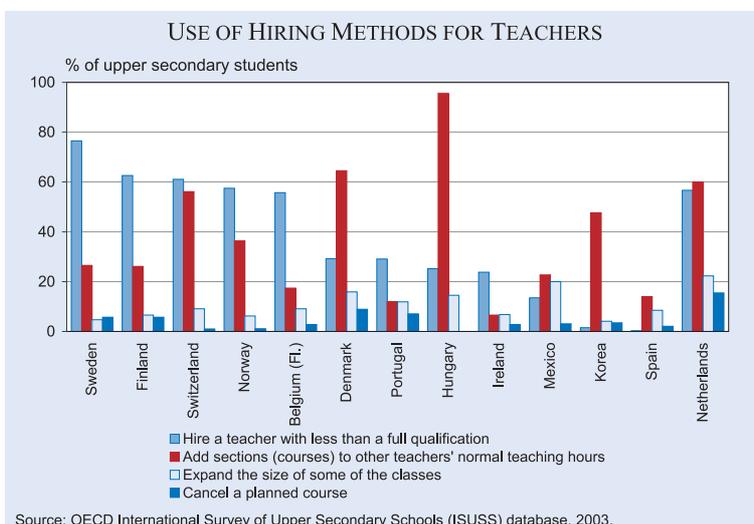
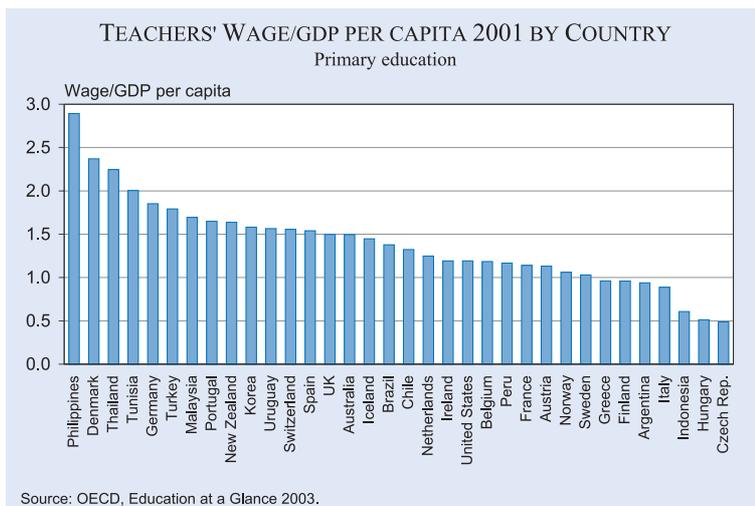
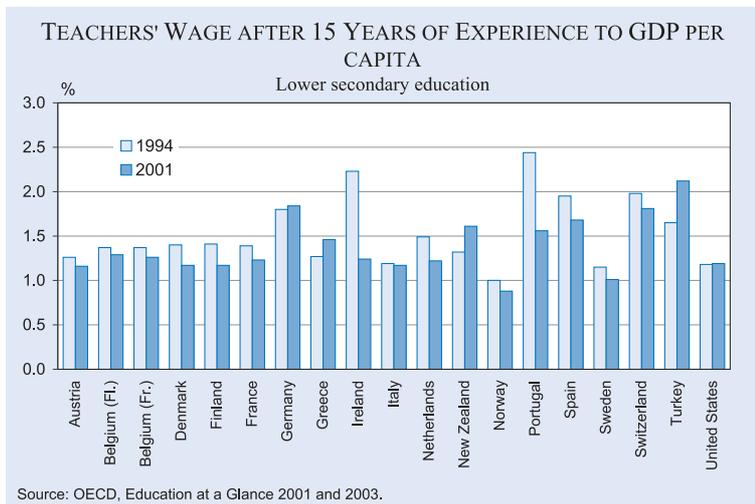


Figure 9



experienced teacher with 15 years of service in 1994 and 2001. For many countries their wage – expressed as a proportion of GDP per head has been falling. Notable exceptions are Greece, New Zealand and Turkey.

Figure 10



Tracking the relative pay of teachers over time in more detail is not straightforward in most countries. We can examine what has happened in the UK. Again since it is not pay in teaching alone that matters but teachers' pay relative to potential "forgone" earnings associated with an alternative career we graph teachers relative pay as measured against average manual and average non-manual earnings.

Figure 11

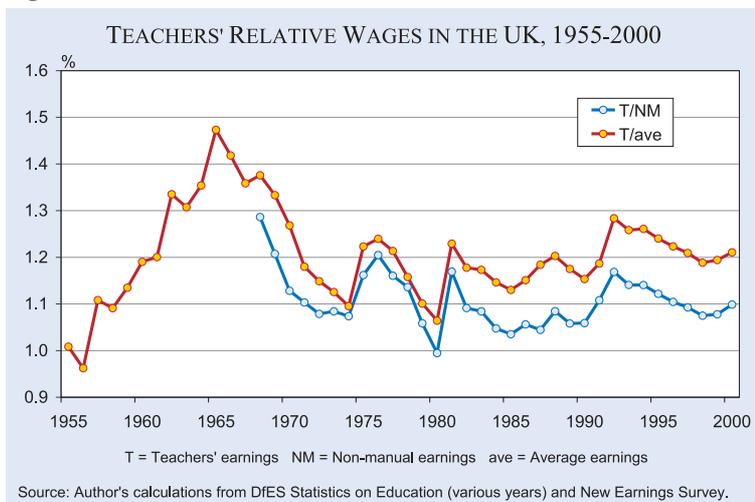
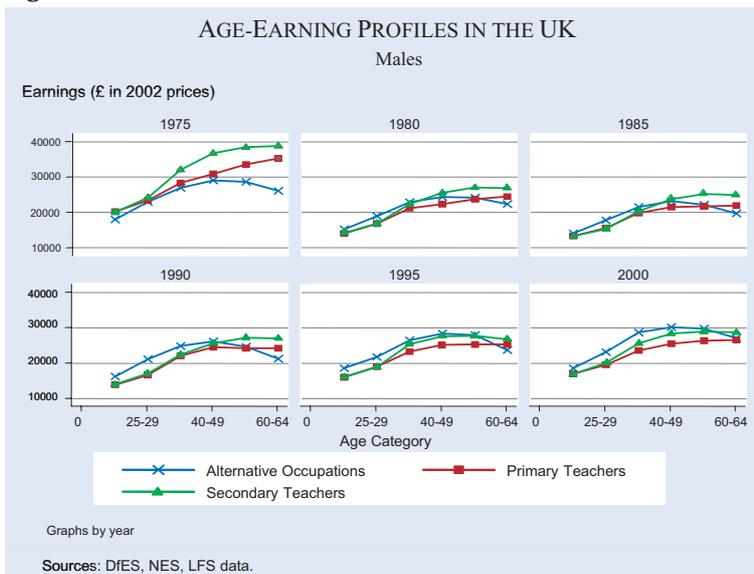


Figure 11 shows the relative earnings of teachers compared with average non-manual earnings from 1955 to 2000 in the UK. The decline in the relative earnings of teachers is evident. Since 1992, teachers' pay has fallen by 6 percent relative to average non-manual earnings (although the decline "bottomed out" in the late 1990s). Examination of the longer run pattern of change reveals that the pattern of teachers' pay exhibits a cyclical repetitive pattern, namely a period of sustained decline, followed by a dramatic increase, usually as a result of a major government report on the crisis in teacher supply.

It is also of much concern that the relative wage of teachers in many OECD countries has been falling in recent years. Figure 10 shows the ratio of an

age pay rise of 29 percent following the Houghton report in 1974. This was followed by four or five years of decline in real pay before the Clegg

Figure 12



Commission award of 1980 restored 1974 “relativities”. Compared with the earnings of other public servants, teachers’ pay has also declined – by 11 percent relative to police earnings since 1981 and by 25 percent relative to nurses since 1973.

Another important but neglected aspect of remuneration is what individuals are paid over their lifetime. There is good evidence for the UK that teachers fair badly in this regard over the course of their whole working career and that the position has been getting worse. Figure 12 displays the age-earning profile for males for selected years. The alternative occupation legend represents the earnings in the alternative occupation for those with a teaching qualification who do not teach. This is a significant departure from the literature which looks at all graduate earnings at a specific point in time as the opportunity wage – this is clearly inappropriate as the decision should be made on the likely real alternative and over the life cycle. All earnings have been set to 2002 prices for comparative purposes.

Overall, in Figure 12, it is quite clear that the earnings of male teachers were uniformly higher than earnings in the alternative occupation in 1975. But over time, the earnings profile in the alternative occupation has been shifting up whilst that of teachers has been moving down. By 2000, it is clear that the wage in the alternative occupation is almost uniformly above that of teaching.

Additionally, the lower age categories appear to be earning a much higher level of earnings in the

alternative occupation in all years after 1975, while in the later age categories, earnings from teaching exceed earnings from the alternative occupation. This gap between the older age grouped teachers and non-teachers is clear in the 1980s. However, the age-earnings profile in the 1990s and into the new century appear to indicate a slow erosion of the higher level of earnings for the older age group in teaching compared to the alternative occupation. The graphs in Figure 12 indicate strongly that males benefit financially from being in an alternative occupation com-

pared to the teaching profession. In Dolton and Chung (2004) the same analysis for women shows that although the age-earnings profile in teaching drifts down over time, it is still above that in the alternative composite occupation. The authors show that internal rate of return to teaching has been declining for the last 25 years and is now negative for men and this means that on average men lose up to £40–£67k in terms of the Present Value of Earnings over their lifetime whereas women gain approximately the same relative to an alternative occupation.

Who becomes a teacher?

It is clear that relative earnings in teaching have a marked effect on the occupational choice of graduates. In particular, the lower relative wages (or wage growth) are in teaching, the less likely a graduate will choose that career. Relative earnings affect both initial career choices, as well as choices made later in an individual’s career. Dolton (1990) also found that there is considerable inertia to remain in teaching and suggested that this effect may be partially due to the different individuals’ subjective evaluation of the relative pecuniary and non-pecuniary rewards to teaching.

Chevalier et al. (2001) overview the market position for teachers in the UK from 1966 to the mid-1990s using graduate cohort data from five separate cohorts of university graduates. The use of this data allows them to simulate the effect of possible

teacher pay rises over time. They find that relative wages in teaching compared to alternative professions have a significant impact on the likelihood of graduates choosing to teach, although the impact depends on the market situation at the time. The wage effect on the supply of teachers is strongest at times of low relative teachers' wages, or following a period of decline in those wages. It is also strongest for those individuals who have more recently graduated. For example, increasing wages of teachers by 10 percent would have led to an increase of nearly 10 percent in the supply of teachers in the mid-1980s but only 2 percent in the mid-1960s or early 1990s.

Labour market conditions at the time the occupational choice is made are also important. The most recent evidence from Dolton, Tremayne and Chung (2003) look at time series data over the whole post-war period in the UK and finds that aggregate labour market conditions, particularly unemployment levels, are important determinants of teacher supply. Notably, they find that the supply of graduates to teaching is counter-cyclical with most graduates' perception of teaching (and willingness to enter the profession) improving when teacher pay is high compared to alternative occupations and when graduate unemployment is high.

While relative pay affects the decision to become a teacher, it also affects the decision to remain a teacher. Analysing the decision to leave teaching, Dolton and Van der Klaauw (1995) show that the higher the relative earnings of teachers, the less likely they are to leave teaching. The importance of relative wages in teacher turnover decisions is examined by simulating a uniform 10 percent increase in relative monthly earnings. This leads to a 9 percent reduction in the total exit probability at five years of tenure, or a total retention rate of 69 percent. A 25 percent increase raises the percentage of teachers still in teaching after five years to 73 percent.

Work using US data suggests that raising teacher pay could improve the quality of the stock of teachers. But attracting more able students to teaching is not the only difficulty for policy-makers. Since individuals with higher ability generally command higher wages, high ability teachers are at a higher risk of leaving the profession than less talented teachers. To negate the lure of improved outside opportunities on "able" teacher retention,

some countries have introduced fast track programmes with the aim of recruiting and retaining the most able graduates by shortening pay scales while providing them with additional training, support and supervision.

Another important aspect of teacher supply is that teaching is a career that is relatively popular with female graduates. In nearly all OECD countries the majority of teachers are women particularly in primary education, where women consist of 80 percent or over of the teacher labour force. A crucial aspect of the distinction between male and female occupational choice is that often women are simultaneously making decisions about starting a family and hence deciding whether to participate in the labour market. This is particularly true in teaching since it is argued that a teaching career has complementarities with family formation and in particular, the ease with which one can return to teaching after a career interruption.

Dolton and Makepeace (1993) find that the choice of teaching as a career is intimately related to the decision to participate in the labour market for women. This is true in the sense that unobserved factors, which make a woman more likely to select a career outside teaching, make them less likely to participate in the labour market and vice versa. This generates a positive correlation in the teaching occupational choice decision and the decision to work.

Performance-related pay (PRP)

While the evidence shows that raising pay impacts positively on the supply of teachers, it is not informative how one can design an optimal pay package to guarantee a supply of high quality teachers. Numerous authors advocate the lack of efficiency of across the board pay increases (see, for example, Odden and Kelley 1997). Over the years there have been various attempts at providing differential pay for teachers, but since 2000 this seems to have been mainly focused on performance-related pay. While moves to introduce incentives into the wage structure of teachers seems, in principle, to be a good idea, there are many theoretical and practical reasons why it remains very unclear as to whether PRP is effective for teaching. (For a summary of this literature, see Dolton et al. 2003). In the UK performance-related pay is intended to boost

teachers' earnings, whilst making the increase in pay dependent upon teachers demonstrating effective performance in their jobs.

The performance management arrangement in the UK PRP system has two main elements. Firstly each teacher is appraised annually by his or her senior line manager on the basis of previously agreed objectives. At the second performance review stage, the assessment is used by the head teacher as a basis for teacher pay decisions in the coming year.

Of course, it is by and large an empirical question as to whether PRP schemes actually improve teacher performance. Evaluation of PRP in the UK is not possible since the scheme was introduced nationally. Evidence from elsewhere in the world tends not to support PRP schemes. In fact, over time, most PRP schemes for teachers have collapsed and there is evidence that the ability of PRP to motivate staff is limited.

It is unclear whether PRP is the appropriate vehicle to solve problems in recruitment and retention of teachers. For example, PRP may not be the best vehicle to improve teacher performance, since the outcome of interest, pupil achievements, is multi-dimensional and depends on the effort of a group of teachers rather than single individuals (Holmstrom and Milgrom 1991).

Non-financial incentives for teachers

Most government policies to retain teachers concentrate on financial incentives. But surveys of teachers reveal that earnings are not the only determinants of their dissatisfaction. Chevalier et al. (2002) find that teachers are less satisfied with their jobs than many comparable graduates working in other fields. Teachers are particularly dissatisfied with pay and hours worked. Compared with other graduates, teachers are 12 percentage points more likely to claim to be dissatisfied with the number of hours worked. Compared to other employees, teachers' hours worked are concentrated during term time with an average working week of 52 hours.

It has long been asserted that many people become teachers due to the non-pecuniary benefits offered by joining the profession, long summer holidays

being the classic example. But more recently, with the advent of the quasi-market and increased accountability, these non-pecuniary benefits may have become less attractive. In the UK, for example, the extra burdens of the national curriculum, and the rigours of the OFSTED inspection procedures may have caused an excessive increase in the administrative burden on teachers.

Interviews with teachers leaving the profession confirm that heavy workload and school characteristics rank higher than salary as a reason for quitting. For over 40 percent of the leavers surveyed by Smithers and Robinson (2003) in the UK, nothing could have made them stay. For the others, changes in workload or pupil behaviour were more likely to be cited than salary as an inducing factor to stay. To ensure a high quality teaching profession, all of these difficult issues need to be addressed.

Conclusions

Examining the pattern of evidence relating to teacher recruitment across OECD countries it is clear that there have been various trends. Notably that teacher relative earnings have been declining and that many countries have experienced teacher shortages particularly in subjects where graduates can earn a higher opportunity wage. Countries can disguise these shortages in a number of ways including having more pupils taught by non-specialist teachers. These factors mitigate the quality of teachers who are teaching children in schools.

Many governments have tackled their problems with teachers by reforming the training of new teachers or the retraining of existing teachers with professional development schemes or trying to introduce teacher appraisal and various incentive schemes into teacher pay. Little is known about the effectiveness of these schemes and one must suspect that they will not necessarily be a substitute for simply putting more government expenditure into education and teacher pay and according it a higher priority.

On the positive side educational standards are rising and we now know much more about how countries compare in the education of their children. What is less clear is how teacher quality and the shortage problems actually affect the achievement of children. More research is needed in this area.

There is little doubt that in many countries teaching as a career does not have as high a status as it used to. Fewer children grow up today thinking that they want to be a teacher. Some of this effect is due to their low relative wage and their difficult conditions of work, and some of it may be due to a perception created by the media of the value of the job. Governments seldom praise the efforts of their teachers and often try to reform their working conditions to have more control over the outcome which they value – i.e. increased educational performance of the pupils. In addition parents are becoming ever more critical of the quality of teaching their children receive – it is little wonder that recruitment of high quality teachers is problematic.

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HIGH GRADING STANDARDS IMPROVE STUDENT PERFORMANCE

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Grading standards at universities throughout the world, even at the most prestigious institutions, have fallen dramatically over the last few decades, leading many academics and policy-makers to question whether students are learning as much at university as did their predecessors in prior generations. However, grading standards in primary and secondary education have received remarkably less attention. Very little discussion has been made in the policy arena on this topic, and even less attention has been paid to grading standards in the scholarly literature.

There are two major questions related to the analysis of grading standards in primary and secondary education. First, to what degree do the grades distributed by schools and teachers correspond to their students' performance on some objective measure of student performance, such as state and national exams? Second, and more important, how does "tough" or "easy" grading affect students' test performance and learning?

The literature on these questions is extremely thin. In fact, to our knowledge, the analysis presented here, describing our research earlier this year (Figlio and Lucas 2004), represents the first study to examine the grading standards of individual *teachers* and how those standards affect students' performance on independent exams. Our data set enabled us to examine the test-score gains of individual students from grade-to-grade and teacher-

to-teacher across three school years. Thus we can see how individual students perform on nationally norm-referenced exams as they move from "tough" to "easy" grading teachers and vice versa. Our results suggest that elementary students learn more with "tough" teachers, and that the magnitude of these effects varies depending on students' initial performance levels and on the overall performance level of their classrooms.

Measuring grading standards

For this study, we analyzed confidential data provided by the Alachua County, Florida school district, where Gainesville is located. This school district is relatively large by American standards, with about 1,800 test-taking students per grade, per year, and contains a wide variety of school settings, from urban to suburban to rural. Alachua County is racially heterogeneous, with a student population that is 60 percent white, 34 percent African-American, 3 percent Hispanic, and 2 percent Asian. Nearly half of all students are eligible for subsidized lunches (which in the United States is an indicator of low family income, as students in families below 185 percent of the national poverty line for their family size are eligible for subsidized lunches), while 19 percent are identified as gifted, 8 percent are learning disabled, and less than 1 percent are considered English learners. Our data consist of observations on almost every 3rd, 4th, and 5th grader in the school system between the 1995–96 and 1998–99 school years, allowing us to follow two cohorts with three years of data each.

Florida provides a unique advantage for a study of this nature because it administers both the Iowa Test of Basic Skills (ITBS), a nationally normed test, and the Florida Comprehensive Assessment Test (FCAT). The ITBS can be thought of as an independent measure of how much students have learned in a school year along a generic standard that can be compared across a wide variety of educational systems, much like TIMSS and PISA are intended to do. The ITBS, however, like TIMSS



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and PISA, does not reflect the specific standards of the local educational system. But the FCAT was designed to measure the degree to which students are meeting the Sunshine State Standards, the same standards that are intended to be the basis for students' letter grades and promotion to the next grade. Students receive scores on the FCAT from 5 (highest) to 1 (lowest), with the thresholds for each performance level designed to correspond with the letter grades A (highest) through F (lowest). Thus, results from the FCAT are ideal for developing a measure of how generous teachers' grading policies are, and the ITBS is a useful measure for independently measuring how much students have learned according to another objective measure.

Our primary measure of teachers' grading standards is the average gap between the letter grades given by particular teachers and the FCAT scores attained by their students. (We actually developed three different measures of grading standards, but the measure presented here elicits the most conservative results.) During the time of our study, students took the FCAT math exam in 5th grade and the FCAT reading exam in 4th grade. Consequently, this measure of grading standards is calculated using the math grades and test scores of 5th-grade teachers, and the reading grades and test scores of 4th-grade teachers. Examining students' performance on the ITBS in the 3rd, 4th, and 5th grades enables us to compare their gains in reading from 3rd to 4th grade, and in math from 4th to 5th grade, with their teachers' grading standards that academic year.

Grade inflation

On average, teachers tend to grade less stringently than the state standards (as reflected in FCAT scores) indicate that they should. For instance, just 9 percent of students who were awarded the highest letter grades by their teachers attained a score of 5 on the FCAT. In fact, just 50 percent attained even a 4. Only 11 percent of students awarded B's by their teachers attained level 4 or above, and a mere 39 percent attained level 3 or above. And of students awarded C's, only 14 percent attained level 3 or above, and only 39 percent attained level 2 or above. Put differently, 86 percent of "C students" failed to achieve the minimum level of competency accepted (level 3) as "proficient" on the

Florida standards, along with 61 percent of "B students" and 17 percent of "A students." Yet an important story is how different teachers are in their grading standards, not just across schools but also within schools, and indeed among colleagues at the same grade level in the same school. Even a crude example illustrates the stark difference across teachers in their grading standards: Among tougher-than-average teachers, 65 percent of A students attained level 4 or above while just 5 percent attained level 2 or below. For easier-than-average teachers, a mere 28 percent of students attained level 4 or above, while a remarkable 32 percent failed to make even the minimum standard for competency. Of course, looking at the quartile of easiest-grading teachers would provide an even more stark portrait of lax grading.

In short, teachers vary considerably in their grading standards, even within a single school district. And it turns out that teachers' standards often vary as much within a single school as within the school district as a whole. For instance, during the 1997–98 school year, the district-wide standard deviation in teacher-level grading standards was 0.68, while the mean within-school standard deviation in grading standards was 0.60. This finding is reassuring, since our empirical strategy relies mainly on within-school variation in teachers' grading standards to isolate the effects of those standards.

Teachers do not change their standards over time

Estimating the effect of individual teachers' grading standards on their students' achievement gains assumes that these standards remain relatively consistent over time, that they are not unduly influenced by the composition of their class, and that they are not actually a reflection of some other characteristic that might account for any effects we observe. Fortunately, from the researcher's perspective, our data provide evidence in support of each of these assumptions.

To see whether teachers' grading standards remained stable over time, we divided the full sample of teachers into thirds according to their grading standards each year and examined how the position of individual teachers changed from year-to-year. For instance, we found that 75 percent of the teachers whose standards put them in the "easy" category (on a scale from "easy" to "moderate" to

“tough”) in one year remained in that category the following year, while just 6 percent evolved from easy to tough graders in one year. This trend was essentially the same across the three categories, with very little movement between categories.

Nor does it appear that teachers’ grading standards are influenced by the ability level of their students. To gauge this, we compared teachers who taught a higher ability class, as measured by their average third grade test scores, in 1998–99 than the class they taught the previous year, and vice versa. We found that even large changes in the ability level faced by teachers do not seem to affect their grading standards.

Turning finally to the relationship between other observable teacher characteristics and standards, we found that relatively tough graders are in fact slightly more experienced and slightly less likely to have attended a selective or highly selective undergraduate institution, though none of these differences are statistically different. Tough graders are more likely to hold master’s degrees, a difference that is statistically significant. In any case, our analysis below controls for each of these measures of teachers’ qualifications in order to rule out the possibility that teachers’ observed characteristics may drive the estimated effects of grading standards on student outcomes.

Classroom assignment

The method by which students are assigned to teachers can also cause problems for the researcher. The fact that students may not be randomly assigned to teachers would be especially troublesome in a cross-sectional analysis, in which one compares one classroom to another in the same year. For instance, looking in cross-section across our own data set reveals that teachers with high standards also have students who are more likely to be white or gifted, and less to be low-income or learning disabled. This is true even within a school. Hence, it is unclear whether the outcomes associated with high standards are actually due to the standards themselves, or to some factor that is associated both with high-achieving students and the teachers to whom they tend to be assigned.

But our analysis looks at year-to-year changes in the grading standards faced by a given student,

making this less of a concern. We found that students are nearly as likely to move to a teacher with different standards as to experience the same grading standards from year-to-year. For instance, 57 percent of students with teachers whose grading standards are below the median within their own school continue to have below-median teachers the next year. Likewise, 54 percent of students with above-median teachers continue to have above-median teachers the next year. This indicates that year-to-year differences in grading standards within schools are close to random. Similar patterns are observed for most subgroups—black and white students are approximately equally likely to transition between groups, as are free-lunch-eligible and ineligible students. It is the case that gifted students, no matter where they start out, are considerably more likely to be placed with a high-standards teacher the next year than are nongifted students. Nevertheless, the vast majority of students are almost as likely to move between low-standards and high-standards teachers as to experience the same level of standards across years. Nor do the results presented below change materially when gifted students are excluded from the analysis.

Empirical results

We performed multiple analyses, progressively adding controls for students’ and teachers’ characteristics and the characteristics of their classrooms and schools as we went along. For our primary analysis, we controlled for the average annual gain made by all students in the relevant school during the period of analysis, such classroom characteristics as the share of white students, the share eligible for free lunches, and the students’ average math score in 3rd grade, as well as the teacher’s years of experience, education level, and the selectivity of his or her undergraduate institution. In the end, we were interested in the effects on ITBS scores of changing a student from one level of grading standards to another.

Nearly all of our analyses found statistically significant relationships between higher standards and improved performance and behavioral outcomes, though the magnitude of the improvement differed depending on which characteristics were controlled for. Our primary analysis, which includes all of the control variables of interest, found modest, statisti-

cally significant improvements in test scores associated with higher standards, and modest improvements in behavior that were not statistically significant. We found that moving from a low-standards teacher to a high-standards teacher was associated with over a half year's worth of gains in reading and mathematics—the same type of test score difference typically seen with regard to the difference between a child of college-educated parents vis-à-vis a child of a high-school dropout, and a larger effect than has been found associated with very large reductions in class sizes or very large increases in teacher salaries. (A year of test-score gain is measured as the average gain from one year to the next in Alachua County Public Schools. Because Alachua County's gain scores tend to be larger than the national average, these are more conservative estimates of "years of gain" than are those based on national grade equivalents.)

While the average effects of grading standards are important, the theoretical literature on grading standards suggests that there may be substantial differences in how students experience standards, with higher standards producing both winners and losers. For instance, those students who achieve a given standard may be made better off because the standard becomes a more meaningful accomplishment. But those students who are not able to achieve the standard precisely because it is now more rigorous are made worse off. In their empirical study of grading standards in secondary school Betts and Grogger (2003) found that high-performing students benefited the most from high grading standards.

To study this issue, we tested whether the effect of high grading standards differed for students with different initial test scores. We found that an average student in 3rd grade benefits strongly (and significantly) from higher grading standards, with above-average initial performers benefiting as well. In addition, the results suggest that higher grading standards exert a significantly positive influence on students who are no more than 0.8 and 0.9 standard deviations below the average score in reading and math, respectively. However, the estimated effects of grading standards are negative for less than 1 percent of the student population, and never statistically significant.

We also examined how a classroom's overall achievement level, as measured by their average

third grade test score in the relevant subject, interacts with grading standards. We found that higher-achieving classes may fare somewhat better than lower-achieving classes under teachers with tough grading standards.

What may be more interesting, however, than the performance of entire classes is the distributional effect *within* a class. Put differently, are the benefits of high standards uniform within a class, or do some children benefit more than others? We found that high-achieving students benefit most from tough grading standards when they are placed in classrooms of relatively low overall achievement. The opposite is also true: tough grading standards elicit the most improvement from low-achieving students when they are in classrooms with relatively high overall achievement.

For instance, a student whose score in 3rd grade was half a standard deviation below the mean experienced nearly a third of a year of extra growth in learning when a teachers' degree of toughness was raised by one standard deviation in a classroom with high overall achievement (where the average score is 1.5 standard deviations above the mean). This compares with an improvement of just 0.07 of a year in a high-standards classroom with relatively low achievement. Similarly, for a student whose 3rd-grade reading performance is 1.5 standard deviations above the mean, the estimated effect of increasing teacher toughness by one standard deviation ranges from 0.18 years of extra growth (in a classroom averaging 1.5 standard deviations above the mean) to 0.71 years (in a classroom averaging 1.5 standard deviations below the mean).

This result has intuitive appeal. Given that the distribution of grades within a class varies much less across classes than does the distribution of performance on external assessments, one can assume that high-achieving students are more likely to earn high grades in low-achieving classes than they are in high-achieving classes. Likewise, low-achieving students in high-achieving classes are at relatively more risk of receiving a low grade than are low-achieving students in low-achieving classes. Hence, it seems sensible that initially high-achieving students are challenged more to get a "good grade" with tough teachers, particularly when they are among the strongest members of a class. Similarly, initially low-achieving students are challenged more to get a good grade with tough teach-

ers, but particularly when they are among the weakest members of a class.

Parental involvement

What might explain the positive effects of higher grading standards? One possibility, of course, is that high standards motivate students to work harder. A second possibility is that parents may devote more attention to their children's schoolwork if their grades suggest that they are struggling, as they might with a tough-grading teacher.

To assess the latter possibility, in spring 2001 we conducted a survey of parents with students in both 4th and 5th grades in Alachua County. We asked the responsible parent to report on how much time he or she spends weekly helping each of the two children with their homework. This allowed us to control for factors, such as parental motivation, that might be common to both siblings in a household. We found that, holding constant the child's grade level, 3rd-grade test scores, and the average 3rd-grade test score in the child's class, parents systematically spend more time helping the child with the tougher teacher with homework than they do helping the sibling with the easier teacher. Indeed, we estimated that a parent of a child with a teacher with tougher grading standards than 75 percent of all teachers would spend 60 percent more time helping that child than he or she would spend with that child's sibling who had a teacher with grading standards tougher than only 25 percent of teachers.

These results do not appear to be due to tougher teachers assigning more homework. Parental reports suggest that the typical tough teacher assigns just 10 percent more homework than the typical easy teacher. This is consistent with findings from interviews with principals in the district, who reported that teachers within any given grade level in the school work to assign the same amount of homework per week. Unfortunately, we have no way of judging whether the homework assigned by tougher teachers is more challenging than that assigned by easier-grading teachers, but casual evidence suggests that it tends to be very similar in nature and difficulty.

Another interesting finding from this survey is that parents do not perceive tougher teachers to be bet-

ter teachers. We asked parents to grade their children's teachers from A to F. While there is relatively low variation in these grades (in their own form of grade inflation, two-thirds of the parents gave their children's teachers A's), the results suggest that, if anything, parents view tough teachers less favorably than they view easier teachers. Parents were 50 percent more likely to assign a grade of B or below to a tough teacher than to a relatively easy teacher, after adjusting for the same controls as above. This result suggests that our measure of grading standards is not merely reflecting some other attribute of a teacher that is viewed as desirable to parents. It also bolsters our argument that it is high grading standards rather than some unobserved measure of teacher quality that is responsible for the positive effects on students' performance gains.

Conclusion

Our results indicate that students benefit academically from higher grading standards, both in their test-score performance and on measures of behavior in school. However, these results were not uniform: high-ability students appear to benefit more than low-ability students from high grading standards. Moreover, initially low-performing students appear to benefit more from high grading standards when they are placed in high-ability classrooms. Likewise, high-performing students appear to react best to high grading standards when placed in low-ability classrooms.

It is, however, premature to conclude from this study that high grading standards are unambiguously desirable. We cannot yet speak to the distributional consequences of teacher-level grading standards at the secondary grades, where it may be the case that high grading standards would lead more students to drop out of school altogether. Lillard and DeCicca (2001) have found, for instance, that raising *graduation* standards tends to lead to higher rates of student drop-outs as well. In addition, the results here do not tell us anything about how to raise the grading standards of teachers whose standards are currently low. Before we can recommend a general policy of higher standards, it is important to understand the distributional consequences at all levels, as well as to know how to implement a policy of high standards.

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UNITED STATES LESSONS ABOUT SCHOOL ACCOUNTABILITY

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The United States has launched a new experiment designed to improve its schools. The most publicized portion of this is the current federal educational policy to expand school accountability based on measured student test performance. Although many states had already installed accountability systems by 2000, a central campaign theme of George W. Bush was to expand this to all states, something that became a reality with the No Child Left Behind Act of 2001 (NCLB). The landmark NCLB codified a developing policy view that standards, testing and accountability were the path to improved performance. This discussion provides evidence on the expected effects of NCLB not only on student performance but also on other potential outcomes.

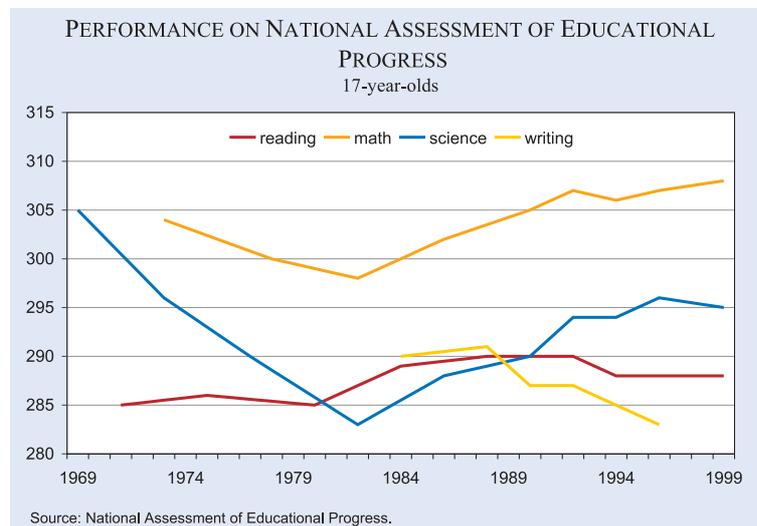
Accountability has been a catchword in education for decades. While it seems natural to measure outcomes and hold schools responsible for them, the mechanics of how to do that appropriately are complicated. Considerable controversy accompanies accountability in schools. Parents, teachers, policy makers, and the American public frequently enter into debate about various elements and uses of accountability systems. These debates are motivated by different underlying views about how best to improve the education of our youth as well as by self-interested reactions.

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Understanding the dynamics of the United State education system sheds light on the current thrust towards accountability and the issues facing today's policy makers. In simplest terms, student performance has stagnated while costs have steadily increased. These simple facts have led to the realization that just providing more resources within the current structure is unlikely to be effective. Nor does adding further regulation offer much promise.

This stagnation is illustrated by the results of the National Assessment of Educational Progress (NAEP), which regularly tests students across the country in different subject areas. The tests, which have been conducted over the past three decades, start with a random sample of students from different grade levels. A summary of the performance of 17-year-olds over time is provided in the Figure. The Figure tracks average scores in reading, math, science and writing. The story is one of flat achievement. Reading and math scores are slightly higher at the end of three decades, while science and writing appear to have noticeably declined.

Level performance would not be a matter of serious concern except for two important additional trends. First, it parallels mediocre performance on the international level, where the United States has performed at or below average since the



**Public school resources in the United States
1960-2000**

	1960	1980	2000
Pupil-teacher ratio	25.8	18.7	16.0
Percentage of teachers with master's degree or more	23.5	49.6	56.2 ^{a)}
Median years teacher experience	11	12	15 ^{a)}
Real expenditure/pupil (in US\$)	2,235	5,124	7,591
^{a)} Data for 1996.			

1960s.¹ Second, the US performance has not been for want of trying. As the Table shows, school resources have been increased over the same period of time. Real spending per student more than tripled between 1960 and 2000. This increase in resources was accomplished in the way typically called for by reformers and policy makers: by significantly reducing pupil-teacher ratios, by increasing the training of teachers and by developing a more experienced teaching force.

The dominant approach to policy making over much of this period has been regulation of education inputs and processes along with providing resources for specific school programs. This approach has been especially appealing to legislatures, because it is easy to set resource policy. But, as shown in the aggregate data, increased resources have not improved performance. Moreover, these overall impressions have been reinforced by similar findings of analyses of performance across classrooms and schools (Hanushek 2003).

This lack of improved performance has brought attention to alternative means of effecting change in schools. This attention has been manifested in a variety of forms, but a common theme has been the regulation of outcomes rather than the more traditional regulation of process and inputs. Previous efforts were based on providing or prescribing specific inputs (such as reduced class size in specific circumstances) and hoping that these led to improved student performance. Often, however, these decisions were based on little information that would indicate high probabilities of success. The new regulatory frameworks tend to emphasize objective outcomes, while letting schools decide how they would meet demands for achievement. The underlying

¹ At least in recent years, these results do not reflect international differences in selectivity of schooling or test taking but instead appear to reflect more fundamental forces. A summary of the performance of countries across the tests along with references to the basic data can be found in Hanushek and Kimko (2000).

idea is that public monitoring and reporting of student outcomes, perhaps coupled with consequences for schools, teachers or students will be more successful than previous input-based policies.

Design of accountability systems

Each state in the US has developed its own student accountability system, and, while NCLB provides some guidelines, the states remain pre-eminent in developing school policy and accountability. NCLB did, however, dramatically change the focus of schools by declaring that all students would achieve some measure of proficiency within a dozen years.

The basic skeleton of accountability systems involves content standards, measurement, consequences and reporting. While states differ in significant ways, a general description of the structure of these systems is useful in comparing actual plans and how their elements interact.

Content standards

Content standards typically present the details of what is expected in each subject and grade. They create boundaries or domains for attention. The typical student outcome standards delineate a body of material that has been designated by an authoritative body to represent a minimum acceptable set of knowledge to be mastered by the student. Although apparently straightforward, the creation of precise standards has been fraught with difficulty. Tension exists between the need for a representative set of elements and the need for the elements to be testable (discussed below).

Measurement

The biggest controversy in accountability probably surrounds how compliance with standards should be measured. Proving that the standards have been met requires some sort of measurement. Assessing compliance requires several decisions: who to measure; what approach to use; how to create valid indices; and, frequently, where to set the critical value or cut-point for meeting the standard.

The centerpiece of current state accountability systems is the testing of student performance. This performance is then aggregated to, say, the school

or district level, and some summary of the test scores is made public.

Deriving composite measures

While most of the public attention has gone to the development of standards and how to measure compliance with them, the use of resulting data, particularly when there are multiple objectives, is equally important. The goal of an accountability system is improving student performance, but performance is the outcome of a variety of factors: student ability and effort, parental inputs, teacher inputs, and school programs and resources. Even with accurate and reliable data on student performance, the outcome statistics produced must reflect the actions of the actors if they are to enter appropriately into performance incentives.

The issue of disentangling underlying elements of performance is most frequently raised in assessing the performance of teachers and schools. If we take accountability down to each schools and teachers, it is common sense that none should be held responsible for bad performance by others. For example, if a teacher starts with low-performing students but does a terrific job of improving their performance, she should not be penalized if the resulting performance level is still lower than, say, the national average. Similarly, a teacher starting with a high-performing group should get credit for her job in improving them but not for their initial preparation. The implication is that any measurement of teacher quality should focus on the teacher's addition, or value-added, to student learning – and this requires adjusting the measurement of student performance according to the initial preparation of students.

The best way to separate the different factors that influence student performance is not obvious. A variety of approaches has been proposed and experimented with in the states. The most common starting measure – applied in virtually every existing accountability system – is the average of all student test scores for a district or a school. This aggregate summary, however, mixes all sources of performance. Extensions that have been proposed and used in different places include:

- Average scores of a school relative to state average scores for students of similar background
- Regression adjusted scores to remove individual background differences.

These measures also highlight a fundamental tension between the incentives that are created by the way a given accountability system is structured and the overall performance goals they are supposed to promote. For example, for many uses it may be desirable to pinpoint the value added by each school, but even a high value added school may start with students sufficiently ill-prepared that the school does not bring them up to the desired levels of student performance. Looked at from the viewpoint of enforcing high standards of student performance, this school might be judged as falling short – while from the incentive side, this school would deserve praise. This apparently simple issue illustrates the difficulties of using student performance data simultaneously for multiple goals. A common approach is for states to create incentives involving a combination of the level of score and the school change in score over time (such as seen in school reward systems in North Carolina and California).

Uses and consequences

Goals, standards, and measurements create an accountability system. But in most states, accountability systems have multiple objectives – including creating a measuring rod for outcomes, improving school instruction, creating incentives and creating rewards/punishments for performance.

The standards and accountability movement strives to induce alignment between standards, teaching and student performance. In contrast to a regulatory approach, the underlying philosophy of accountability is letting the actors maintain control of a process whose outcomes are scrutinized. Consequences – both positive and negative – are the fulcrum that gives leverage to the other players in the education system. If schools or students do not expect any decisive actions as a result of their performance, there is little to motivate attention to the outcomes they produce.

No child left behind

The No Child Left Behind program took the state systems that were developed and layered on new aspects that related largely to consequences if

schools did not show improvement in student scores. Specifically, NCLB required states to develop a plan for ensuring that their students will eventually be proficient in the basic subjects. A key element is tracking whether schools are meeting “adequate yearly progress”. This is a measure of whether the state and the school are following on an acceptable trajectory.² If schools are not performing well by these standards, they face increasing requirements to support the students in the schools with more choice of schools, with supplemental services and ultimately with the ability to leave a public school completely and to find a better school. The school itself may even, at some point, be dissolved.

The key element added by NCLB is a set of sanctions against schools that perform poorly. These sanctions require, at least in principle, that the school aid the student in finding better schooling that brings the student to proficient levels. The federal program, however, is only one element. The states include their own rewards and sanctions for schools that do well or do poorly. A clear change has been the universal introduction of consequences (in the future) for schools that do not perform well as measured by student achievement.

Assessing the results

Although it is not possible to investigate the impact of NCLB directly, it is possible to assess the impact of the underlying state accountability systems that were introduced before the federal legislation. This discussion summarizes a more detailed statistical analysis found in Hanushek and Raymond (2005).

The inability to assess NCLB comes from a variety of factors. First, and most importantly, the majority of states had already instituted some sort of accountability system by the time the federal law took effect. Although only 12 states had accountability systems at the school level in 1996, 39 states did so by 2000. Thus, there is no ready comparison group that can indicate what might have happened without any law. Second, the law has many facets making it hard to isolate the effects of any single

one. Finally, the common pace of implementation of NCLB across the states eliminates any status quo alternatives for comparison.

Nonetheless, it is possible to assess how the prior state accountability systems impact student outcomes. The varied introduction of accountability across states during the past decade permits analysis of how this institution affects student learning. Moreover, because NCLB is based on individual state systems, the prior state structures are generally very closely related to their responses to the federal legislation.

The basic analytical approach builds on information about state differences in mathematics and reading performance as identified by the National Assessment of Educational Progress (NAEP). Although these tests are not the ones employed by the states in their accountability systems, they do provide a common assessment of performance across the states (something that is not available with the individual and different tests used by each state). We directly analyze how performance growth on each test between grade 4 and grade 8 is affected by whether or not a state applies a test-based accountability system.

Extensive analyses of educational production functions have been conducted, and they form the relevant background for this work. Those studies have concentrated on describing how various inputs to schools enter into the determination of student outcomes. As described elsewhere, however, these studies have not provided any consistent picture of how schools affect student performance (Hanushek 2003).

Many different state policies, regulations, and incentives – although poorly identified and measured – enter into determining student performance. State educational policy encompasses a wide range of factors including financial structure, collective bargaining rules and laws, explicit regulations on educational processes, and the like. The complications for the analyst are multiple.

The objective is to separate the impact of accountability from other possible influences on student achievement. But, if these other influences cannot be readily measured and cannot be directly controlled for in any statistical analysis, they are likely to be correlated with accountability, making accu-

² This discussion is a very simplified one that leaves out many details. In fact these provisions have been very controversial, in part because it is difficult to specify the ways of meeting the objective while being both flexible and serious about the results. As with most new systems, the exact provisions will undoubtedly evolve over time.

rate identification of the impacts of accountability on achievement impossible.

The analysis summarized here relies on three related approaches to the statistical disentanglement of the impacts of accountability. First, important components of general state factors that influence achievement – either from policy or from the character of the state population – will influence student achievement at multiple levels of schooling. Therefore, if we look at the growth of achievement over time – say, as used here, the change in student performance between fourth and eighth grades – common factors that have a constant impact on the level of achievement over the observation period will be fully captured in the early test score and thus will be implicitly controlled in the statistical analysis. Second, from the multiple observations of performance in each state over time, it is possible to estimate a common state-specific growth rate for student performance. (Technically, this amounts to extracting a state specific fixed effect in the growth equations for student scores). The easiest interpretation of this approach is that we compare growth in achievement before and after a state introduces an accountability system; that is, each state acts as its own control for comparing the effects of accountability. Thirdly, a variety of time-varying factors can be entered directly into the analysis. For example, the pattern of spending on students in each state or changes in the adult (parent) population are readily measured and can be introduced to avoid any complications that might arise from correlations with the introduction of accountability measures.

How accountability affects performance

There are straightforward findings from the statistical analysis of student achievement. We find that the introduction of accountability systems into a state tends to lead to larger achievement growth than would have occurred without accountability. The analysis, however, indicates that just reporting results has minimal impact on student performance and that the force of accountability comes from attaching consequences, such as monetary awards or takeover threats, to school performance. This finding supports the contested provisions of NCLB that impose sanctions on failing schools.

Much of the explicit interest in accountability and the federal legislation, however, focuses on low achievers. And, given the generally lower achievement of minority groups, an implicit assumption is that accountability – as revealed through mandatory disaggregation of performance for racial and ethnic groups – will simultaneously close the large racial/ethnic achievement gaps along with improving all performance. When we look specifically at the performance of subgroups, we find that Hispanic students gain most from accountability while African Americans gain least.

The finding of differential effects of accountability raises a clear policy dilemma. A prime reason for the US federal government to require each state to develop a test-based accountability system involved raising the achievement of all students, but particularly those at the bottom. It has done that, but not at the same rate across groups. We conclude from this that additional policies are needed to deal with the multiple objectives. Again, as is frequently the case, a single policy cannot effectively work for two different objectives – raising overall student performance and providing more equal outcomes across groups.

The movement toward stronger accountability in schools has also suggested to many that there would be adverse consequences – more exclusions, higher dropout rates, a narrowing of the curriculum, and the like. While some existing research supports these presumptions, it appears that the negative impacts are likely to be considerably overstated (Hanushek and Raymond 2003). Importantly, many of the adverse effects that involve “gaming” the system come from short-run incentives that are unlikely to be present over time.³

Although not the focus of this discussion, it is important to note that the character of currently available accountability systems is not particularly strong. This concern has two dimensions. First, the educational standards and accountability systems vary dramatically across states, and an analysis of the underlying conceptual structures suggests that different systems are expected to be associated with stronger achievement gains because of the incentives created – even though it is not possible

³ Hanushek and Raymond (2005) provide an analysis of special education placement rates, one of the most cited areas for possible abuse, but this indicates clearly that accountability has not had an overall impact through this form of exclusions.

to distinguish clearly among alternative quality ratings in the statistical analysis.

Second, a majority of the systems concentrates on overall achievement levels (with highly variable passing scores across states). Such systems do not generally provide clear signals about the value-added of schools. Instead, they combine a variety of effects including those resulting from family background differences and neighborhood effects. As such, they cannot provide truly clear and strong incentives. Moreover, while there is a range of potential consequences incorporated in state systems, it is not possible to investigate whether some specific consequences are more powerful than others. Yet, in the face of the rather blunt incentives from existing systems, the introduction of accountability systems is associated with achievement improvements on the order of 0.2 standard deviations of student achievement. (This gain amounts to moving students from the median of the distribution to the 58th percentile). Such improvements, while not revolutionary, are notable when compared to the failure to find alternative reforms that yield such impacts on a broad basis. As accountability systems evolve, they are likely to have considerably stronger impacts if they move in the direction of more precise incentives for individual schools.

Without doubt, the achievement of our students has direct ramifications for the future well-being of society (Hanushek 2004). It should be a very high priority to ensure that all of our students do in fact gain the skills that will be needed as our economy grows and evolves. Improved school accountability offers much more promise than the failed input policies of the past, although much is still to be learned.

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SCHOOL CHOICE AND SCHOOL QUALITY IN THE US

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Over the past several decades, education policy discussions in the US have become increasingly sophisticated as initial hopes for the promise of public school spending equalization have given way to the disappointment of persistent and often worsening inequality of educational opportunities within the public school system. Gone are the days when court mandated state aid to public schools is viewed as the solution to desperate conditions for the nations poorest children. Instead, policy makers and the public are beginning to look more favorably for creative solutions that empower families who currently are ill served by primary and secondary public schools. And increasingly these solutions involve some form of increased choice, particularly for low-income parents.

At the same time, debates on policy options that include increasing school choice are often mired in ideological fervor and rooted in simplistic frameworks which ignore the very economic forces that have led to the problems policy makers are trying to address. Advocates for increased choice cite the power of competitive markets to elicit efficiency gains from an overly bureaucratic public school sector, while opponents cite fears that private or public “choice schools” would divert resources and “skim the cream” off traditional public schools – thus leaving a troubled public school sector even worse off. This debate, however, neglects some important forces, and a better understanding of these forces can lead to a better appreciation of the potential of increased choice to improve not only schools but also the communities that are most troubled by bad public schools.

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Causes of bad public schools

It is often observed that the US primary and secondary public school system is already infused with much choice. Since entrance into most public schools is gained by living within some specified district or neighborhood boundary, most parents choose schools for their children implicitly by choosing where to live. In fact the bundling of residential location decisions with school choice is so ingrained in the US that people often forget that many choose their neighborhood in large part because of the access to particular schools that this choice implies. Real estate agents frequently act as important conduits of information about local schools, and an increasing number of web resources provide new residents with school related information. It is therefore not surprising that a plethora of academic studies have conclusively established that residential housing markets and public schools are closely linked, a fact which shows up nowhere more strikingly than in the differential housing prices for equivalent house qualities in different public school districts (Epple and Nechyba 2004).

Given all this choice, why would any parent then choose an inferior public school? The answer is that some parents cannot afford housing anywhere but in those school districts that provide inadequate opportunities to children. In part because of zoning regulations that prohibit low-income housing in good school districts, in part because of housing prices that incorporate the value of good public schools, and in part because good school districts tend to be found in areas with poor access to low-income job opportunities, therefore some parents do not have much of a choice within the public system. Schools within districts that are open to the disadvantaged have little incentive to serve them while at the same time being faced with the enormous challenges that arise in schools serving predominantly disadvantaged children.

The root of the problems faced by many low-income parents is therefore found in the way that



choice is exercised in a system which bundles residential location and schooling decisions. Housing markets have become structured around the idea that there are fiscal benefits from keeping out the poor (who pay less in taxes and whose children sometimes require additional resources), and those with the ability and the means to move take advantage of good educational opportunities that public schools in good districts provide. The problem is exacerbated by market forces that incorporate public school quality into housing prices – thereby inflating house prices in good school districts and depressing prices in those with bad schools. Poor families do not necessarily value education less than other parents – a residence-based public school system simply does not provide them with the opportunity of “purchasing” good schools as they are out-bid for housing in districts which provide such schools.

Learning from public school choice

Nevertheless, one can learn to a limited extent about the relationship between school choice and school quality from the different degree to which public school choice (linked to residential housing markets) differs across metropolitan areas in the US. This research finds its roots in the pioneering work of Hoxby (2000), who uncovered a positive relationship between the degree of public school choice and public school quality within the US metropolitan areas – with more residence-based school choice producing better schools at lower cost. At the same time, it is not at all clear that increased traditional public school choice benefits all groups equally. Rather, it appears that families who are more able to exercise choice within such a system benefit most, while families who are less able to choose (due to income constraints) are sorted into underperforming schools (McHugh 2004).

This evidence therefore suggests that there is truth in both sides of the choice debate: on the one hand, increased choice appears to produce efficiency gains, but it also leads to increased sorting that deprives some districts of resources that are quite fundamental for high quality schools. While the debate tends to center on financial resources that might be drained from the system under increased private school choice, the bigger concern (in light of much evidence that the marginal product of

additional financing is low) centers around the lack of non-financial resources in underperforming districts. These resources include parents that monitor schools, peers that bring with them positive externalities and good teachers that follow good peers. The tension between increased efficiency on the one hand and increased sorting on the other therefore places severe limits on the degree to which public school choice linked to residential housing markets can improve schools serving the most disadvantaged children (Nechyba 2004).

Increasing public and private choice

Given these limits to traditional public school choice, two alternative (and potentially complementary) approaches of increasing choice have been proposed. First, the charter school movement in the US has focused on creating more choice *within the public system* by allowing the creation of new public schools that can experiment with new approaches to educating children while not restricting admission to those who reside within a particular geographic area. Second, the private school voucher movement has focused on using private and public funds to *extend choice to private schools*.

Lumping all choice approaches into these two categories, however, obscures many of the subtleties associated with particular choice proposals. In any proposal aimed at increasing choice, whether within the public system or into the private system, decisions must be made as to who is eligible to participate and under what conditions households and schools may participate. Private school vouchers, for instance, could be extended to all, or to only low-income households, or to only households in underperforming schools (Nechyba 2000). Similarly, schools may be deemed eligible to participate only if they abide by particular rules of admission or curricula, and students that impose different costs on schools may be granted different voucher levels. As a result, the debate about extending choice within the public school system in the US is really a debate about what kind of choice should be extended to whom and under what conditions.

The evidence on the impact of increased choice from charter schools or private school voucher programs is still quite limited in large part because

charter school programs are still relatively new, and private school voucher programs are too narrowly targeted to result in systemic effects. Recent work investigating charter school impacts nation-wide suggests that children in charter schools on average perform better academically (Hoxby 2004) while work on charter schools in particular states is more mixed (Ladd 2004). Similarly, it appears that children who switch to private schools under limited voucher programs improve their performance (Rouse 1998). But a full empirical evaluation of the impact of choice on school quality awaits larger policy interventions that can be used to test not only the impact of school choice on those who choose but also on the entire system more generally.

How can we further predict the impact of increased choice on school quality?

With no large voucher experiments to analyze and with the charter school movement still in its infancy, the challenge for policy analysts is then to come up with a method of predicting the impact of increased choice in a way that does justice to the complexity of the economic forces underlying the current difficulties. In a series of papers over the past seven years, I have attempted to develop such a method.¹ It begins with the specification of an economic model which combines a realistic housing market, a private school market and a political market that responds to new policies. More specifically, families within the model are assumed to choose between different housing options across different school districts, to vote on how much support to lend to public schools funded by a combination of local property and state income taxes, and to determine whether or not to send their children to private schools offered by the market.

School quality in the model results not only from spending in schools but also from the mix of parents and students that attend the school. Thus, the framework can realistically model not only the role played by school spending, but also the fact that other resources – such as teacher quality, peer quality and parental involvement – are essential components of good schools. Housing prices in the model incorporate not only the local public school quality and local tax rates, but also other local

amenities such as crime rates, public parks and so forth. And political support for education is determined by the desires of voters (who are assumed to support low levels of spending if they choose private schools). Finally, private schools are assumed to have an advantage in that they can choose not to accept students with low “peer quality”, while public schools have the advantage that they are free.

The next step in the analysis is to use real world data to “calibrate” the model. Thus, key parameters in the model are set in order to replicate the observed outcomes in schools, housing markets and political markets. For instance, the distribution of house quality across different districts is specified so that the model accurately predicts the distribution of house prices in the data. Family incomes in the model are set so as to replicate the income distribution in the real world, and the desire of voters for spending in schools is set so as to accurately predict the observed levels of public school spending that arise out of the political process. Finally, the weight placed by parents on spending versus other factors such as the peer composition in the school is set in order to allow the model to accurately predict the level of private school attendance in the absence of vouchers.

The result of this work is a complex computer model which incorporates the relevant economic forces and which accurately replicates the current state of the world – i.e. housing prices, public school quality levels, per pupil spending levels, private school attendance rates, etc. It is at this point in the analysis that new policies can be introduced on the computer, and the computer can then solve the model to predict how outcomes will change under the new policy. The maintained assumption throughout is that the economic forces that can explain why the world looks the way it does today will continue to operate as new policies are introduced. This approach has then allowed for an analysis of the likely impact of previously untried public policies in a framework that fully recognizes the underlying connection between different economic forces we know are important.

Impact of private school vouchers on communities

Even with a rich framework such as this, the computer model cannot be expected to offer a single

¹ The technical details of the underlying theoretical model are outlined in Nechyba (1999), with details on how data is used in combination with the theoretical model in, among others, Nechyba (2003a).

answer to the question of how a large choice or voucher program will impact educational opportunities for children. Voucher proponents argue that there are likely to be efficiency gains in public schools that will result in better use of public resources and thus better public schools, while opponents point out that private schools may leave the public sector drained of important resources even if the remaining resources are used more efficiently. Given that we still have relatively little evidence on how large these competing effects are likely to be, it is therefore prudent to begin the analysis with a “worst case scenario” – one that assumes no efficiency gains from increased competition, full “cream skimming” by private schools and a decline in public support for taxation to support public schools. This provides “lower bound” benchmark prediction. We can then move on to consider how the predictions will change if assumptions more favorable for vouchers are introduced.

The most striking outcome of this approach is the robustness of one particular result: *regardless of how pessimistic the underlying assumptions, private school vouchers that are available to all parents or those targeted to parents living in poor districts result in a substantial lessening of income segregation across school districts* (Nechyba 2003b). The underlying reason for this prediction follows straightforwardly from an understanding of the economic forces that have led to the current US public school crisis in poor neighborhoods. Because house prices are inflated in good districts and depressed in poor districts, those parents that choose to use a private school voucher will tend to choose housing in poor districts. After all, if a middle-income family currently living in a good public school district chooses to switch to private schools as a result of a voucher, why should it continue to pay inflated prices for housing as well as higher local taxes that go to support local public schools? The reason that many families stretch their family budgets and choose to pay such inflated prices and high taxes is that this is required in order to gain access to good public schools. The public school system therefore provides the incentive for families to segregate based on their incomes, an incentive that is removed (and in fact reversed) when *school choice policy un-bundles the residential location and schooling choices*. Families that switch from public to private (or public choice) schools can therefore afford more housing in poor districts

without facing the prospect of using bad public schools in those districts.

For this reason, the model predicts that vouchers – those universally available and even more those targeted to residents of poor districts – will change the way that many families will choose to live. Regardless of what happens within schools, under realistic levels of voucher funding this invariably leads to a lessening of income segregation. Furthermore, home values in poor districts will rise as poor districts become more attractive and housing demand there increases, while home values in rich districts will decline as there is less of a need for such prices to incorporate the premium due to good public schools in those districts. In the real world, these changes are, of course, likely to unfold over time. While some families might choose to move immediately in order to take advantage of a voucher in the poor district, others will simply move for reasons unrelated to education but will then make their next residential location decision differently than under a system that firmly bundles this decision with school choice.

An important caveat to this result is that it is true for vouchers that are available to all families and even more to vouchers that are targeted to families residing in failing public school districts, but *it is not true for vouchers targeted only to very low-income families*. Under the first two types of vouchers, there are implicit and (in the case of district-targeted vouchers) explicit incentives for middle-income families to move into low-income districts like inner cities, but these incentives are absent if vouchers are only available to families with very low incomes. Since it is likely that any large scale voucher proposal will be targeted in some way, it is therefore important to realize that *district targeting is very different from income targeting*. District targeting spreads competition to all public school districts – not just those that are targeted, while income targeting insulates middle and high-income districts from any threat that large numbers of families in those districts may choose private schools. To policy makers considering targeted voucher programs, this research therefore suggests that district targeting is much more effective in infusing competition into the entire system than income targeting, and large decreases in residential segregation flow only from the former and not the latter type of proposal.

Impact of increased choice on traditional public schools

While the result highlighted above holds universally regardless of assumptions about the responses of public schools in terms of more effective resource use, regardless of how much “cream skimming” is undertaken by private schools and regardless of the impact of declining political support for public education, the predicted impact on public school quality is more sensitive to these kinds of assumptions. Still, because of the segregation effects highlighted above, even the worst-case assumptions yield predictions that are less dire than a more simplistic approach might suggest. The results discussed below are restricted to universally available or district targeted vouchers that are funded through a state income tax (Nechyba 2003c).

There is no mechanism under the worst-case scenario that would allow public schools to improve overall under vouchers. However, because, many of those choosing private schools would eventually move from good public school districts in order to take advantage of housing deals in poorer neighborhoods, public school quality would decline throughout the public school system – not just in poor communities where private schools would form. In fact, the model predicts that public school quality in poor districts would decline the least because of an increased local tax base (since housing prices rise) and because a large fraction of families that pay local taxes in the poor district would in fact not make any demands on the local public schools, thus leaving more spending per pupil in those schools. Even under the worst-case assumptions, the model therefore suggests only modest declines in public school quality in poor districts, with slightly larger declines in other districts.

Few people, of course, believe that there would be no response from public schools to increased competition, and private schools typically do not “cream skim” from public schools to the extreme extent assumed under the worst case assumptions. The structure of the model then allows for the introduction of a modest level of public school response in the form of better resource utilization. The results suggest that under such responses, modest voucher levels (in the range of \$2,500 per pupil with the option for parents to pay additional tuition if they choose) can cause increases in public school quality in all districts while at the same time leading to a narrowing of the quality gap between rich and poor districts.

Conclusion

The clearest winners of vouchers (or other forms of non-residence based choice) – particularly proposals that target families who live in poor districts – are families who own homes in those districts (because their property appreciates substantially in value) and who have children with good peer characteristics that switch from bad public schools to better private schools. The clearest potential losers are families who own homes in wealthier districts with good public schools (because their property depreciates substantially as the public school premium declines.) In addition, if voucher advocates are wrong and public schools will not respond to increased competitive pressures, then average public school quality may decline somewhat with an introduction of school vouchers. This suggests that voucher plans – particularly those targeted to poor districts – should be accompanied by careful attention to what is happening to public schools, especially those that are already quite bad in poor districts. It does not, however, take away the potentially larger benefits that are likely to arise as healthier communities form when vouchers unbundle the residential location and school decisions – thus removing the current incentives for income segregation across school districts. Vouchers will do more than just change schools – they will change the way households choose to live and interact with one another, and this is true regardless of whether one takes the grim view or the optimistic view on other aspects of the school choice debate.

The primary argument against choice programs targeted at poor districts therefore seems on shaky grounds given the large benefits for poor communities that are likely to arise from the un-bundling of housing and schooling decisions. This argument essentially claims that we cannot afford to allow schools to compete for poor parents because we need those parents to stay in public schools for the benefit of children whose parents will not exercise choice under a voucher system. Put differently, the argument states that we must use poor parents that want to exercise choice but cannot under the current system in order to prop up the only public school they can afford to attend. Few would accept such an argument if extended to its logical next step – removing choice from middle and high-income parents who choose good public schools. It is difficult, then, to see how the US can continue to restrict choice to those who are most powerless

when it is not willing to accept such restrictions on others. This becomes particularly difficult when research suggests that – even under the worst case scenarios – increased private school choice brings with it substantial benefits to residents of poor districts.

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PUBLIC VERSUS PRIVATE UNIVERSITY SYSTEMS

GEORGE PSACHAROPOULOS *

In the higher education world today, private versus public is a moot distinction. It is certainly very hard to find a purely public or purely private university. According to the OECD's glossary, an institution is classified as public if it is controlled and managed directly by a public education authority, or by a governing body most of whose members are appointed by a public authority. Conversely, a private institution is one that is controlled by a non-governmental organization, or if its governing board consists mostly of members not selected by a government agency (OECD 2003, 441-442). Such a definition is very close to the heart of the matter regarding institutional comparisons of university systems, i.e. who makes the critical decisions regarding the operations of a university: Is it the center, e.g., a bureaucrat in the Ministry of Education? Or is it the university senate and, why not, the student-user of university services?

Table 1 lists what I believe to be the most critical decisions a university has to make in order to function and excel. In a public university system, as it is typical in continental Europe, all critical decisions are ultimately made by the center. The amount of resources available each year to the university is a line in the state budget – usually what it was last year adjusted for inflation. Universities cannot raise additional resources by charging even moderate fees. The Minister of Education has to approve the appointment of

professors, who are civil servants paid on public sector pay scales regardless of their performance. The university does not have a say on how many students it admits, nor does it select the candidates. And of course the students may end up studying subjects they are least interested in, provided they have a place in a numerus clausus system. Such an institutional polar case of a public university system is found in Greece where, by explicit constitutional provision, all universities are public, private universities are prohibited, tuition is zero, professors are civil servants and cannot be dismissed (Psacharopoulos 2003).

By contrast, in a private university system, the size of an institution's budget largely depends on its own efforts and quality of services offered. Students react with their feet regarding the tuition charged by a given institution, crowding centers of excellence and penalizing mediocre institutions. If not rendering what students want, private universities close down, whereas public universities carry on never closing. Private universities can attract star professors by offering market salaries well above civil service pay scales. Most important, private universities have a say on their admission policy, and students can choose what subject to study in what university.

Figure 1 illustrates in another way the essential difference between public and private university systems. In a public system, the financier and the producer overlap, keeping the user (student) out of

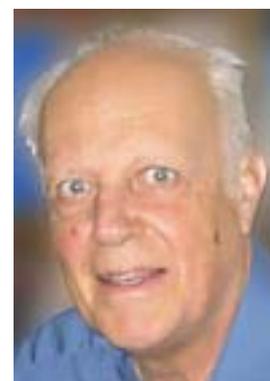


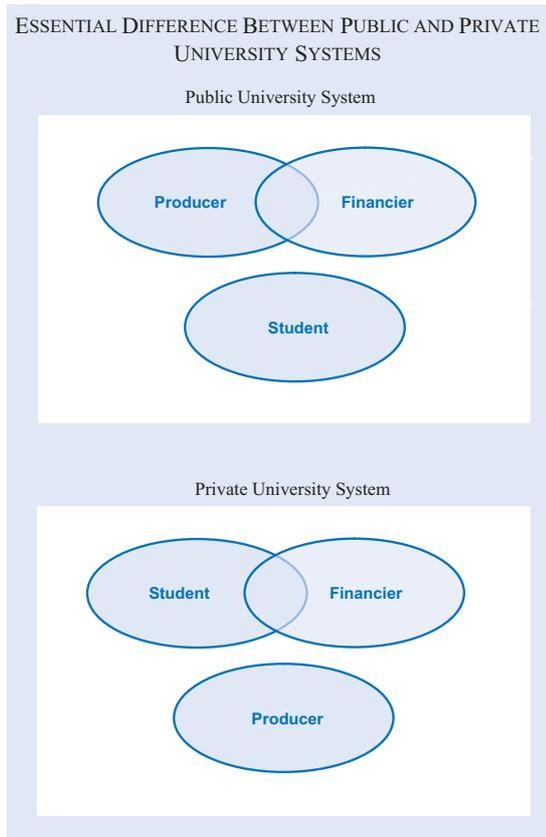
Table 1

Critical decisions pertaining to universities, and decision makers in public and private university systems

Decision	Main decision maker in a	
	public univ. system	private univ. system
University budget level	State	University, students
University budget allocation	State	University
Tuition fees	State	University, students
Hiring professors	State	University
Professorial pay	State	University
Professorial promotion and tenure	State	University
Admissions policy	State	University
University entry choice	State	Students

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Figure 1



the loop. Such separation of user control over what is produced has detrimental incentive effects on the quality of public universities. At least there is wide agreement today that the public sector is not the best for producing services offered more efficiently by the private sector. By contrast, in a private system the student has control over the services offered by virtue of directly financing the university by the tuition, and thus being able to choose among different producers.

Where between the two polar cases?

Notwithstanding the classification difficulties expressed above, the world today is divided in four distinct clusters regarding the degree of privatization of universities:

- Continental Europe: mostly public university systems
- The UK, Ireland and Spain: outliers in Europe regarding private systems
- Australia and Japan: leaders in privatization
- North America: United States mostly privatized

Table 2 (col. 2) presents evidence for this division based on the private share of the GDP devoted to

tertiary education. This information is matched to the number of universities listed in the World Top 100 (Table 2, col. 3). The criteria for the academic ranking of universities are mainly based on a combination of the number of alumni and staff winning Nobel prizes, and publications and citations in 21 broad subjects, all adjusted for the size of the institution (Liu 2004). The leader in privatization (US) accounts for more than half of the top 100 universities. The first time a continental EU-15 country appears in the list is the Netherlands (Utrecht) at rank 39, followed by Germany (Munich Technical) at rank 49.

Until the middle of the last century, Europe was the center of excellence in global learning. But in the last 50 years the trend has been reversed, at least as judged by the number of Nobel prizes won on the two sides of the Atlantic (Psacharopoulos 1999). Although it is very difficult to establish a cause-effect, the prima facie evidence points to a clear correlation between privatization of tertiary education and academic excellence.

Even in the UK, where tuition fees are the highest in Europe, universities struggle to retain the best staff and continue to fall further behind their American counterparts (The Economist, October 4, 2004, quoting the Vice-chancellor of London University).

Table 2
Private resources to tertiary education and number of universities in the World Top 100

Country	Private share of GDP to tertiary education (%)	Number of universities in Top 100
(1)	(2)	(3)
Austria	0.0	1
Denmark	0.0	1
Finland	0.0	1
Greece	0.0	0
Norway	0.0	1
Belgium	7.7	0
France	9.1	4
Portugal	9.1	0
Germany	10.0	7
Italy	11.1	1
Sweden	11.8	4
Netherlands	16.7	2
Ireland	20.0	2
Spain	25.0	0
UK	30.0	11
Australia	43.8	2
Japan	54.5	5
Canada	38.5	4
USA	66.7	51

Source: Col. (2) based on OECD (2003), p. 208; Col. (3) based on Liu (2004).

Why public systems dominate

If a dose of privatization helps academic performance, why are most university systems in today's world (and not only continental Europe) public? There are four popular technocratic arguments in favor of tertiary education being public, based on equity and market failure. But having recently served a stint in politics, my favorite key phrase in this respect is "cherchez les votes".

Equity

If good universities were private, the poor would be excluded because they could not afford the tuition. This is one of the biggest popular fallacies ever. It has been fully documented in all countries that have cost-benefit incidence studies, (i.e. who really pays and who really benefits from higher education) that public financing is regressive (Castro-Leal, Dayton and Mehra 1999; Tsakoglou and Antoninis 1999). Even in a "free" higher education system it is the poorer segments of the population who finance (through general taxation) the university studies of the rich (Blondal, Field and Girouard 2002). And even where higher education is proclaimed to be "free", the incidental costs of attending university can amount to 20 percent of family income among farmers and manual workers. This is in contrast to the nearly 10 percent of such expenditure among families in the top quintile (Psacharopoulos and Papakonstantinou 2005).

Those who attend higher education come without exception from the wealthier segments of any society. After they obtain their degree, they will have a considerable earnings advantage over those who did not attend higher education. Actually, the more privatized the higher education system, the higher the earnings advantage of the graduates and the private returns they realize on their investment (Table 3, col. 3). Zero tuition for all, irrespective of family income, goes against the grain of the equity it is supposed to serve. Charging selective tuition, in direct proportion to family income would, paradoxically, be more equitable.

Capital market imperfections

What if the poor wanted to borrow the necessary funds to reap the benefits reported in Table 3, but they cannot because human capital does not have collateral? This is not a real argument against private universities as student loans do exist in several countries (DICE 2004b), and several new funding schemes have been developed in theory and practice, such as individual learning accounts (DICE 2004a) and human capital contracts (Palacios 2004). Student loans are equitable, because it is those who benefit who will ultimately pay. They are also efficient, in the sense that students may make wiser choices on the subjects they study and, certainly, will graduate faster.

Externalities

This is the argument par excellence in favor of public universities. What if the university graduate spills over to society benefits that are not privately captured? In such a case the social returns to education would be higher than the "narrow" social rates reported in Table 3, col.3. Regretfully, it is also the argument for which there exists no solid evidence whatsoever (Venniker 2001). Surely, university education, as other levels of education and many other activities in life must have positive external effects, and some would argue that it even has negative external effects (LaRocque 2003; Veder 2004). But to base the subsidization of higher education on externalities, one should have evidence on the relative value of such externalities between sectoral activities – a luxury not yet available in empirical economics.

Table 3
Earnings advantage and returns to investment in tertiary education
circa 2000

Country	Relative earnings (tertiary / secondary graduate = 100)	Rate of return (%)	
		Private	Social
(1)	(2)	(3)	(4)
Denmark	128	7.9	6.3
France	163	13.3	13.2
Germany	141	7.1	6.5
Italy	142	6.7	7.0
Netherlands	132	11.7	10.0
Sweden	140	9.4	7.5
UK	151	18.1	15.2
USA	190	18.9	13.7

Source: OECD (2003), pp. 165 and 167.

Information

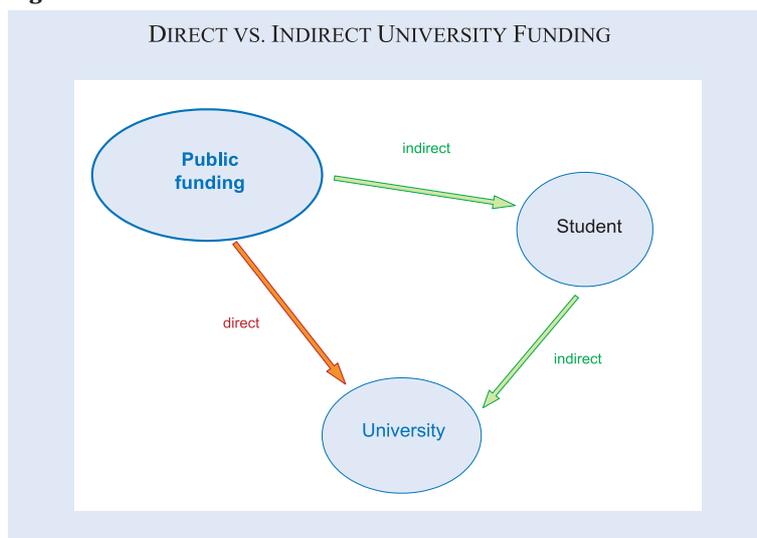
Public universities have also been defended on the basis of student protection against unscrupulous entrepreneurs offering bogus degrees. But in today's world, students themselves may know better than the central Ministry of Education which universities are best and what subject to study where. Public universities tend to offer outdated subjects out of inertia, leading to graduate unemployment. An example in case is Greece, where in 2001 there were 21,000 applications to study computer science in the public (and only) university system, yet there were only 125 available places.

Political votes

This is the most persuasive explanation on why public university systems still dominate worldwide. Telling the electorate that in the name of equity higher education is free generates votes. Alas, it is only the highly educated (still a minority) who understand the fallacy of the argument. But they also tacitly accept that populist argument because it is in their interest to have their children study free in a state university system. And given the fact that a university degree is a passport to civil service jobs, the question of quality of the degree is swept under the carpet.

Towards a new institution

Throwing more public money to universities will not necessarily lead to academic excellence under the dominant finance model (red arrow in Figure 2). But if the same money were channeled through the hands of the students (green arrows in Figure 2), the efficiency and equity of higher education would be enhanced. This major institutional change would mean that the state would stop paying university salaries and the like, and each university would survive based on the willingness of the students to enroll and pay tuition. Some universities would close down, while others would excel.

Figure 2

The state could continue financing higher education, although it would not be a producer of university services. What the state spends on education today could be given to the hands of the students in inverse proportion to family income. Wealthier students would receive nothing from the state and would have to pay full tuition. Less wealthy students will get vouchers to buy university services from a producer of their choice.

Of course such institutional change cannot happen overnight, but in my opinion this is the direction we must go to achieve better higher education in Europe.

Where is Europe heading?

It was not until some time in the 1990s that Europe realized it was falling academically behind the United States. Some countries like the United Kingdom adopted politically unpalatable measures to try to correct the situation by injecting a degree of privatization in the university system – raising tuition fees (Dearing Committee 1997). Yet, according to *The Economist* (January 22, 2004) “the price and quantity of courses are state-controlled, in a system more suited to Soviet central planning than a modern democracy”.

Most countries in the continent stuck to traditionally free and low-quality mass higher education. Current debate in continental Europe focuses on the amount of resources the state devotes to higher education, without questioning how the resources

would be used. There is a move towards a three versus four years of the first higher education cycle, without asking what would be taught during any number of years (Bologna-European Council 1999).

Recently, the European Commission has shown interest in the subject and is asking good questions (European Commission 2003). But the Commission is handicapped in its actions because, according to the Treaty of Rome, education policy is in the hands of individual countries. The EU Education Ministers met in Prague in May 2001 to discuss a possible European Higher Education Area. In their communiqué they “supported the idea that higher education should be considered a public good (sic) and is and will remain a public responsibility (regulations etc.) ...” (European Commission 2001). Beyond the wrong use of the term “public good”, such thinking among Education Ministers does not augur well for a radical institutional change in Europe regarding higher education.

The degree of privatization of a university system is a major institutional arrangement that affects academic quality. What matters is not the legal status of the institution – rather who has control over university functions and quality control. Without exaggeration, many European universities today resemble nationalized industries that are on the way out in other sectors of the economy.

Today in Europe there is a divide between the protected non-competitive higher education area, and the drive for the internal market and international competitiveness (Lisbon, EU 1999). Unless there is a radical institutional shake-up away from direct state finance and control of universities, academic excellence in the old continent will keep slipping away to more progressive parts of the World.

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LEARNING FROM ABROAD: CHANCES AND LIMITATIONS OF TRANSFERRING INSTITUTIONS

WOLFGANG OCHEL *

Introduction

Political decision makers hope that international comparisons of institutions will give them insights that will help to improve decision making in their own country. They wish to know what institutional arrangements have been chosen by other countries and whether the arrangements chosen have yielded desirable results. The questions associated with institutional learning are discussed in the next three sections.

In addition to institutional learning, political decision-makers must decide on which regulations they wish to transfer to their own countries. These decisions will be guided by the goals of the decision-makers, by political competition and by the nature and intensity of the competition between systems that the country is exposed to. The transfer of institutions from other countries can be hindered by a country's insufficient ability to make institutional adjustments and by powerful interest groups. Both hindrances are not unalterable. Questions in connection with the transfer of institutions will be treated in the second part of this article.

International comparison of institutions: A modern basis for political decisions

The way an economy works is determined decisively by its institutions. Institutions regulate social life. They impose limits to individual comportment and steer it into certain channels. They contribute to the stabilisation of expectations. Regulations determine the economic processes, on the other hand they themselves are expressions of basic economic and social developments. Far-reaching institutional reforms cannot be carried out without social consensus. An example is the Wassenaar

Agreement of 1983 that led to employment promoting wage and labour market policies in the Netherlands. Included among institutions are the market, the laws of the state, government regulations, and court decisions, agreements between interest groups, as well as norms, customs, and value judgements shared by the members of society (Regini 2000, p. 22). The following remarks focus on labour market regulations emanating from the state (e.g. legal dispositions regulating the termination of employment) and on agreements between interest groups (e.g. wage agreements between employers and trade unions).

Laying down institutional arrangements has always been a fundamental responsibility of the state. In fulfilling this responsibility, governments have always been aware of the arrangements prevailing in other countries. Since the beginning of the 1980s, however, so-called benchmarking has gained considerably in importance. In view of the "eurosclerosis" that has been diagnosed, a debate has begun on the advantages and disadvantages of Europe as a place to live or work or conduct a business. In this debate, great attention has been given to differences with respect to state regulation between European states, especially as compared to the United States (Tronti 1998). And in transformation economies as well, governments have been eager to adapt institutional set-ups of western countries that seem to promise success. In carrying out benchmarking studies, international organisations such as the OECD, the European Commission and the International Labour Office (ILO) have given support to individual countries.

The increasing importance of international comparisons of institutions in recent years is due to a number of factors. As a result of globalisation, locational competition is becoming more intense. State regulations are becoming increasingly more important as a locational factor for enterprises that operate internationally. Governments are thus competing against each other in an attempt to develop an institutional framework that is as attractive as possible. The growth of international integration means that increasingly 'national' economies are subject to similar shocks. This provides a better basis for evaluating the ability of national institutional arrangements to cope with such shocks. Institutional learning, which is facilitated by improvements in communications, is developing into an important foundation for political decisions (Dolowitz and Marsh 2000).

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Another reason for the increasing importance of international comparisons of institutions is to be seen in the on-going dissolution of the original ideological foundations of the modern welfare state. This means that the traditional sources of legitimisation for the state's economic policies are increasingly called into question. On the other hand, established ideological positions are less and less a hindrance to adapting other countries' ideas and institutional arrangements. A pragmatic attitude is becoming more and more common. Politicians look increasingly to those states that have the status of a role model. Wisconsin Works, for example, has attracted much attention. Other countries' successful institutional arrangements serve to legitimise institutional change in one's own country (Cox 1999).

International comparisons can trigger institutional reforms in two ways. On the one hand, the observation of weaknesses vis-à-vis comparable countries and the resulting recommendations place national decision-makers under pressure to justify their policies. On the other hand, international comparisons can offer solutions that can be pursued in a national context when designing reforms. For example, the active social policies in Denmark and the privatisation of reintegration services in Australia and in the Netherlands have influenced the Hartz legislation in Germany. This has expanded the repertoire of possible problem solutions beyond the national horizon (Eichhorst, Thode and Winter 2004, p. 58).

Capturing the institutional arrangements of other countries

The first step in carrying out an international comparison of institutions is to choose the countries with which the institutions of a particular country are to be compared. A country's institutional networks are influenced by the political environment (dictatorship, democracy), by the economic system (planned, market economy), by the stage of development in which the country finds itself (developing, threshold, industrialised economy), by the prevailing culture of regulation (formal vs. informal regulation) of the country, to name only the most important influences. Institutional learning is, as a rule, only possible when the countries used for comparison exhibit similar characteristics.

In connection with the selection of comparable countries, the question arises of whether there is an individual country whose institutional arrangement is superior to all other countries with regard to the pursuit of economic-policy goals and to which special attention should thus be given. This "one-best-way" thesis has not yet been proved, and it is challenged by the thesis of a functional equivalence of institutional systems, according to which a specific goal can be achieved just as well with different institutional systems. As proof of functional equivalence, proponents give the example that both a welfare state, such as Sweden, and a liberal economic system, as that in the United States, can produce very nearly full employment (Freeman 1995). Also the job-creating successes of the Dutch Polder model can be used to support the equivalence thesis.

The next question is, what institutions should be compared. This depends, of course, on the question under discussion and on the empirically determined relevance for that question of the institutions under review. In many cases, it will prove important to ascertain the reasons and the immediate cause for the introduction of specific institutional arrangements. Only when this is known, will it be possible to determine whether the motives for the foreign arrangement are analogous to the problems at home for which one seeks a solution. The degree of congruence in the objectives pursued casts light on the question of whether the regulatory model will be of use in attaining a given goal.

In order to carry out a comparison between countries, it is often necessary to make the institutional arrangements in the different countries comparable. This may require converting qualitative information into quantitative; it may require aggregating individual indicators into a comprehensive indicator. Weighting schemes based on cluster or on factor analysis can be helpful in this connection (Nicoletti et al. 1999). A concrete example for this kind of procedure is the compression of many individual indicators into one comprehensive indicator representing the effectiveness of the measures of protection against dismissal in individual countries (OECD 1999 and 2004).

Comparisons limited to a point in time are often not sufficient to capture the differences between institutional arrangements. As a rule, such arrangements are initially introduced or later modified in the

course of reform processes extending over longer periods of time. Furthermore, institutions only bring about behavioural changes and processes of adaptation affecting the real economy when they have been applied over a certain period of time. Therefore, it is necessary to compare institutions in their development over time. But time series appropriate to this task are not always available.

One problem in carrying out international comparisons of institutions is that the texts of laws and edicts do not tell us whether they are actually applied or not. One country's strict rules may be paired with lax enforcement, whilst another country's lax provisions may be applied with great rigour. Simply comparing the text of the law would, in such cases, give a misleading picture. The application of sanctions for refusal of work by unemployed persons can serve as an example. Of the 12 OECD countries which use sanctions, Switzerland, Finland and Norway apply them relatively strictly; Japan, New Zealand, Belgium and Germany, on the other hand, apply them hardly at all (OECD 2000, p. 136). This example shows that evaluating the institutional arrangement without knowledge of its application is not satisfactory. But the information required for a well-founded evaluation is often not available either.

International comparisons of institutions should not be limited to laws and administrative orders. The establishment of norms as well as the interpretation of legal or administrative provisions by the courts are significant in many cases (Ichino et al. 2001). At the same time, attention must be paid to informal norms and customs, which are particularly important in lightly regulated countries. In the USA, for example, a high degree of external labour market flexibility resulting from scant protection against dismissal stands in contrast to a low degree of flexibility within the enterprise (Regini 2000, p. 23).

Evaluation of institutional arrangements

The international comparison of institutions should not stop at the mere collection of other countries' institutional arrangements, but should proceed to the identification of those arrangements that have brought about desirable results. Those institutions that can contribute to the solution of specific problems in the researcher's own country have a claim to his special interest. The

identification of appropriate institutional arrangements requires, as a prior condition, their evaluation. This procedure must be carried out in several steps: the objectives must be defined as a basis for measuring the effectiveness of the institutions; the intensity of compliance must be examined; the effectiveness of the arrangement must be estimated and a comprehensive cost-benefit analysis must be carried out (Schmid et al. 1996, p. 5).

Labour market institutions are created in order to attain certain results by means of modifications in the behaviour or in the expectations of the participants in the labour market. Correspondingly, the immediate objective can be to influence a certain behavioural or expectational aspect, e.g. the search activity of unemployed persons, the avoidance of free rider activities, or other behaviour (Teulings and Hartog 1998, p. 110). On the other hand, the goal pursued can refer to certain labour market results, such as the position of the Beveridge curve, the equilibrium volume of unemployment, or real wage developments. From the objectives, performance indicators can be derived which can serve as a basis for assessing the institutional arrangements.

The second step in evaluation refers to the implementation of the institutional arrangement. Arrangements that only exist on paper have scant effect. In order for them to have effect, they must be applied to the persons specified and the application must be long-term. In some cases, compliance must be enforced by means of sanctions. Implementation includes not only the concrete application but also its harmonisation with complementary institutions and with discretionary economic policy measures. The behaviour of relevant actors must also be coordinated. As has been mentioned, the implementation of institutional arrangements is seldom documented. This is another obstacle to international comparisons of institutions.

The estimation of the effectiveness of institutional arrangements is affected by theoretical considerations. For quite a long time the neoclassical theory of the labour market was dominant, and since it offered no room for the role of institutions, little or no attention was paid to their role in the labour market. In the last 15 to 20 years, however, such institutions have become increasingly an object of theoretical and empirical interest. Although a self-contained theoretical construction is still not available, there are a number of individual models that

take institutional aspects into account (Blau and Kahn 1999; Nickell and Layard 1999). The effects emanating from labour market institutions are complex. One reason for this is that there are influences coming from other determinants of economic activity such as the regulation of markets for goods, the financial incentives set by the state, the composition of the participants in the labour market and their behavioural patterns. Then too, it must be borne in mind that the effects observed are quite possibly not pure effects, but only take place in connection with certain kinds of shocks (Blanchard and Wolfers 2000).

Two different methods may be used to determine the effectiveness of labour market institutions (Ochel 2004):

- Aggregate analyses of effectiveness measure the influence of labour market institutions on certain macroeconomic indicators that are defined as the performance criteria. Examples could be employment rates, unemployment rates, exits from unemployment or the level of wages. Such analyses of effectiveness are carried out at the regional or national level or as comparisons between pairs of countries. In addition, multiple comparisons have gained in importance. Here, the effects of one or more institutional arrangements in different countries are analysed. Such studies may be based on cross section analysis, or the cross sectional data are combined with time series. An advantage of aggregate analyses is that they take into account both direct and indirect effects. A disadvantage is that although effective institutions can be identified, very little light is shed on the details of the most desirable institutional arrangement.
- The last-mentioned disadvantage is less likely to attend microeconomic evaluation studies. Here the researcher attempts to estimate the effect of institutional arrangements on the market participant directly affected by means of individual data. The actual situation is compared to a counterfactual situation in which it is supposed that he or she were not affected. Of course, the same person cannot be at once affected and not affected. It is therefore necessary to form a control group, which ideally should differ from the group of persons affected only in one respect: the institutional arrangement under review does not affect them (Schmidt et al. 2001, p. 28). Social experiments of this kind have been car-

ried out above all in North America but scarcely in Europe. Microeconomic evaluation can also be based on data not obtained from experiments. This approach seeks to replace the missing control group with econometric and statistical procedures (Heckmann et al. 1999). Microeconomic evaluations capture the direct but not the indirect effects. The indirect effects arise as a result of substitution and displacement effects as well as macroeconomic circular flow effects.

Analyses of effectiveness only provide information about the effects of institutional arrangements. The effects obtained must, however, be set in relation to the cost they entail. If all direct and indirect effects and costs have been taken into account, then in effect a comprehensive cost-benefit analysis has been carried out that would form a basis for economic policy decisions.

International institutional transfer when there is competition between systems

In addition to institutional learning governments have to decide on which regulations they want to transfer to their own country. These decisions will be guided among other things by the autonomy of decision-makers or in other words by the nature and intensity of systems competition that a country is exposed to. What is more, a government pursuing its own interests will decide in a different way than a benevolent government.

Although the government of an autonomous country stands in political competition, it is not subject to the conditions of systems competition. Such a government is thus not obliged to consider the effects of its policies on the locational decisions of the mobile factors of production (real capital and workers), effects which systems competition may induce. Instead, it is only obligated to its own interests or to those of its citizens. It will adopt regulations from other countries depending on these obligations.

Unlike the situation in a largely closed economy, governments in open economies must take into consideration in making their decisions that some of their economic agents have the option of cross-border solutions. With their decisions on production locations, internationally mobile factors of production can express their estimation of the attrac-

tiveness of national investment locations. In some cases, the mere announcement of shifts in location sites or only the reference to more favourable institutional systems in other countries suffice to influence their own governments. A government's scope of action in political competition is thus limited.

For systems competition to become an effective factor, some conditions must be met:

- Firstly, the factors of production must be mobile. Globalisation has made this more possible than ever before for investment capital and for skilled labour. At the same time, mobility is still limited by transaction costs, mobility costs and regulations.
- Furthermore, international differences in institutional regulations must be able to lead to shifts in production locations. This can but need not be the case. If, for example, the population of a country tends to consist of risk-averse people, they will not leave the "protective network" of their own country and go to a country whose people are less risk-averse and whose regulations are less all-encompassing. Also the utilisation of specialisation advantages could speak against the idea that an increase in international regulation differences induces enterprises to shift their locations. According to the theory of comparative institutional advantages, the specialisation of countries in specific products reflects their specialisation in particular institutional arrangements. The United States, for example, with its deregulated labour market and dynamic venture capital market, would provide advantages to enterprises that concentrate on "radical innovations" (development of completely new products, employment of new production methods). In Germany, on the other hand, a system of industrial law and corporate governance has been formed that favours incremental innovations: continuous, small improvements in products and processes (Hall and Soskice 2001). Enterprises that exploit the associated site advantages will not be motivated to change locations because of differences in institutional arrangements.
- For systems competition to take effect, a government must also be able to identify the institutional arrangements in its own country that have been major factors in shifts of location. This may be difficult because the migration of mobile factors is not selective, as a rule, with regard to indi-

vidual institutional regulations (for example, stricter protection against dismissal in an international comparison) but with regard to a whole package of institutional regulations, tax and business laws as well as other determinants.

- Finally for systems competition to take effect the political actors who are exposed to diverse influences in the collective process of opinion formation must be aware of the needs of mobile entrepreneurs and workers. Their interests and the interests of the indirectly affected immobile agents of production must be organised in order that the necessity for reform in certain regulatory areas be recognized. Interests can be most effectively pursued when there is the possibility credibly to threaten the government with sanctions in a political context (Streit and Kiwit 1999).

As has been shown, competition between systems forces politicians to take into account the reactions of the mobile factors of production. This competition can bring about different results. It can be functional and thus lead to an improvement in the institutional framework. Institutions can be suboptimal because the state has pursued the interest of political actors or of specific pressure groups and has disregarded the preferences of the citizens (Brennan and Buchanan 1980). In this case, systems competition has a controlling influence on the political actors. For example, excessively strict laws against wrongful dismissal, that a government introduced in the interests of unions, can be corrected by the locational moves of the enterprises that need reversibility with respect to their personell decisions. But in the case of a "benevolent" state as well, the institutional framework can be improved by systems competition. Systems competition leads to a discovery process in which information is supplied on the design of institutions in other countries and their problem-solving capacity, thus contributing to the gradual correction of institutional deficits.

Systems competition can also, however, be a disturbing factor that hinders the state in its task of correcting market failures in the interest of its citizens. In this case, systems competition is dysfunctional, that is, it impairs in fact desirable regulations. This can be exemplified by looking at social welfare systems. In an open economy with the right to change the country of residence, people representing a "good risk" are inclined to leave the welfare state, whilst those representing a "bad-risk" are attracted to such a state. Factor migrations lead

to financial burdens for the welfare state. In order to reduce factor migrations, the state favours the net payers and disadvantages the net receivers by cutting their benefits. Here preference is given to regulations that have proved to be successful in countries with similar problems. The result is an erosion of the social welfare systems. A Pareto-optimal redistribution policy from a national standpoint, as represented by the establishment of a social welfare system, can suffer as a result unless countermeasures are undertaken (Sinn 2003).

Path dependency as a hindrance for institutional transfer

The competition between systems, which is part of the globalisation process, has increased the pressure to reform the institutional arrangements whilst at the same time taking into account the reactions of mobile factors of production. Here it has proved to be useful to consider the experiences gained in other countries. In view of this new challenge, the question arises as to what extent national systems of institutions are capable of being modified? Is it only possible to transfer foreign institutional arrangements when they are compatible with existing values and with the existing network of institutions in the target country? Under what conditions will the interaction between the foreign institutions and the traditional set of rules be seriously disturbed (problem of institutional coherence)? To what extent will the institutional transfer make excessive demands on the procedural competence of the recipient country?

In responding to these questions the thesis of the path dependency of institutional development has gained recognition. The thesis is that institutional change at home is only influenced to a slight degree, if at all, by the perception of the evolution of foreign institutions; all attempts to learn from foreign countries, and especially all attempts to implement what has been learned, can only be successful if carried out in the context of existing institutions (Scherrer 2001, p. 1). Disturbances of institutional compatibility give rise to considerable costs, so that path dependency is associated with considerable institutional inflexibility.

On what notion of path dependency are these ideas based? According to Ackermann (2001, p. 55), path dependency is present if the process of institutional development depends on the preced-

ing path of development. A state of institutional development that has been attained tends to be self-reinforcing and hence a considerable measure of institutional inflexibility is the result (Arthur 1994). It is difficult to adapt institutional arrangements to changed conditions. Therefore, there is little scope for transferring successful arrangements from foreign countries.

The inflexibility of paths of institutional development is due to positive feedbacks. Following David (1994), Ackermann (2001, chapter 3) distinguishes between three causes of positive feedbacks in institutions. They refer to the level of actions of interacting individuals, to the level of rules that structure these interactions, and to the interrelationship between the levels of actions and rules. On the action level, coordination effects arise as a result of the advantages offered by standardised patterns of behaviour. These can lead to stable rules. At the level of rules, complementary effects will arise if the interdependent relationships between institutions are of a complementary nature, i.e. if following a particular rule becomes more attractive as a result of the interdependence with other rules. Positive feedback as a result of interactions between the levels of societal rules and the level of individual behaviour, finally, result in processes of social communication in a society that lead to the convergence in its members' mental structures.

In the concept of path dependency, the feedback effects are responsible for the fact that the path of institutional development imposes narrow limits on the scope for institutional modifications. For this reason suboptimal institutions are retained. The legacy of existing institutions also sets very narrow limits to the possibilities of institutional transfer across international boundaries. The path of institutional development is only departed from when the actors consider the loss of efficiency to be greater than the costs associated with the creation of new and efficient institutions (North 1992).

A number of objections to the thesis of path dependency and institutional inflexibility may be formulated. It does not seem very plausible to see in the past development of institutions only a limiting force but not at the same time a source of experience that can be useful in carrying out the reform of institutions. At the same time, it is not at all clear that a path consists only of self-reinforcing sequences and that counter-reactions are inconceiv-

able. A further central deficiency of the notion of path dependency is that it is difficult to operationalise. What is the relevant period of time for the path? Which institutions are decisive for the path? Which events that may have influenced the path should be taken into consideration (Scherrer 2001)?

Apart from the objections to the “regularity” of institutional development, the question arises whether the necessary institutional compatibility does not also depend on the nature and extent of the institutional arrangements that are to be transferred. In this connection a differentiation must be made between global problem definitions and solution strategies, on the one hand, and particular programmes and measures, on the other (Schmid 1999; Schludi 2003). Global solution strategies (active instead of passive social policies) that are first devised in the national context as concrete reforms can be transmitted between welfare states with similar institutional structures relatively easily (Denmark, Sweden). On the other hand, the model of the liberal labour market of the United States cannot be easily transferred to a corporatistic country such as Germany with its collective bargaining arrangements. In the case of particular institutional regulations, the transfer can be much easier. They can, without a great deal of interface problems, be adapted to the national institutional structure. The adaptation requirement in the national context is relatively small, also when complementarity with other institutional regulations must be taken into consideration (Orzag and Snower 1999).

Despite these points of criticism, the empirical evidence is not entirely hostile to the idea of path dependency. The inertial energy with which many west European countries cling to their labour market institutions seems to be related to the inflexibility predicted by the thesis of path dependence. However, with respect to labour market institutions in highly developed economies it is not possible to speak of complete inflexibility. Great Britain and New Zealand are not the only countries to have successfully carried out reforms of their labour market institutions; other countries such as the Netherlands, Denmark and currently Germany have also made such reforms. What is more, the process of institutional learning has gained in importance in recent decades. And then the question arises of whether the inertia observed in many countries is really due to path dependence or

whether other factors such as the resistance of powerful interest groups are responsible.

The political economy of institutional transfer

The theory of path dependency refers to spontaneous development processes that are not the result of contests of power. If such processes only offer a partial explanation for the inflexibility of institutions and thus for the limits to institutional transfer, then the question arises whether the power of the state and the influence exerted by interest groups are not the principal factors hindering the international transfer of institutions? Relationships of power can play a role in connection with perceiving and selecting advantageous institutional arrangements, in persuading socially relevant groups at home that particular arrangements are advantageous, and in introducing and applying such arrangements.

According to Scherrer (2001), even the perception of the advantageousness of institutions is tied to interests. In the national discourse on institutional reform, only those institutions or arrangements that are deemed compatible with the interests of the elites and the influential interest groups are admitted to the debate. The ability of central actors in society to convince others of the advantages of foreign arrangements depends among other things on whether they succeed in presenting the economic problems under discussion as being so threatening that they can only be dealt with successfully by adapting foreign institutions, which are presented as having coped successfully with the problem. This ability will be all the greater, the more influence these central actors have in the process of opinion formation.

If power relationships and competing interests play an important role in determining the content of the national discourse on foreign institutional models, they play an even more decisive role in the decisions concerning the introduction and the implementation of institutional arrangements. Political decision-making processes are determined by the monopoly power of the state to fix the design and sequence of the reform steps as well as by the necessity of attaining voter approval on the reforms. If the potential results of the institutional reforms are very insecure, a revision of the reforms is only possible at high costs, and if many

voters feel they are the losers of the reforms, their resistance can be expected (Roland 2002). If the losers constitute powerful interest groups, then the reforms will be prevented.

Resistance to the adaptation of foreign labour market regulations can have different causes:

- The number of losers is larger than the number of winners. Thus, for example, the liberalisation of the protection against wrongful dismissal will mean that for many insiders the risk of losing their jobs increases; but the chance of finding employment will only increase for a relatively small number of unemployed persons.
- The number of losers resulting from a reform of the labour market may be small, but the much larger number of winners is scattered among many heterogeneous groups that, aside from labour market issues, have different interests, so that they are unable or unwilling to agree on a common strategy to push through reform. In such a case the losers may be successful in their resistance.
- There is uncertainty about the effects of the reform. A large number of those who will be affected are risk adverse and unable to form an opinion of whether they will in the end be among the losers. They therefore argue in favour of retaining the status quo.
- To the extent that the reform brings about improvements in efficiency, compensatory payments may make winners out of potential losers. But the potential losers are afraid that the compensation will not be high enough, or will be reduced in future, and therefore withhold their approval (Alogoskoufis et al. 1995, chap. 6; Dewatripont and Roland 1995; Saint-Paul 2000).

Policy learning – a way to remove the transfer barriers?

The transfer of institutional regulations from other countries can be hindered by an inadequate institutional adaptability and by the domestic political balance of power. Both hindrances are not unalterable, however. Positive feedback effects that are responsible for the inflexibility of paths of institutional development can be counteracted by altering standardized behaviour (and thus stable rules) through a learning process of the relevant actors. In the same way resistance to institutional reforms

from pressure groups can be reduced when “knowledge coalitions” consisting of experts convincingly demonstrate the advantages of adopting regulations from other countries.

The prerequisite for removing transfer barriers is the ability of actors to learn, which is also known as policy learning. Policy learning refers to learning processes that lead to a changed assessment of specific institutional regulations and that increase the legitimacy of adopting institutions from other countries. Learning from other countries often occurs as a result of external shocks and can result in subsequent modifications in the domestic political arrangement (Jenkins-Smith and Sabatier 1993; Schmid 2003).

There have been attempts in many countries to benefit in political decision-making from the experiences of other countries with different institutional regulations. For example, in Germany the benchmarking group in the Alliance for Jobs and the Hartz Commission have introduced the problem-solving approaches of other countries into the political debate in Germany. This was only partially successful, however, although the so-called “window of political opportunity” was open. The reasons for this partial success are the weak influence that academics have on politicians, the political balance of power and the veto positions of powerful pressure groups.

Summary

The international comparison of institutions has become more important. It is an instrument with which the political decision makers in a country seek to learn from other countries and to improve the quality of subsequent decisions. The learning process is not confined simply to finding out what the institutional arrangements of foreign countries are, but also examines the effectiveness of these arrangements. Analyses of aggregate effects of institutional arrangements measure the influence of institutions on indicators that are defined macroeconomically. They inform us as to which arrangements have been internationally successful at a global level. Microeconomic evaluations, on the other hand, focus on individual regulatory efforts and estimate their effects on those directly affected. By comparative analysis of microeconomic evaluations, insights into the best design for in-

dividual regulations (best practices) may be obtained.

The transfer of institutions from other countries is determined by the goals of the government, by political competition and to an increasing extent by systems competition. The latter forces governments to take into account the effects of their decisions on the locational choices of mobile factors of production. Systems competition can influence institutional transfer in different ways. Depending on the conditions, it can lead to an improvement, but also to a worsening of domestic institutional regulations.

Different factors limit the scope for adapting institutional arrangements that seem to promise success. The inflexibility of one's own institutional arrangements and values arising from path dependency makes the adaptation of foreign institutional arrangements more difficult. In addition, restrictions on political decision-making processes as well as powerful interest groups at home may be opposed to the transfer of institutions, or may influence the content of such a transfer. Policy learning may, however, reduce the barriers for an international transfer of institutions. The combined effects of all of these factors, which are different from one country to another, lead to the multiplicity of institutional systems that characterises today's international scene (Freeman 2000).

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WORK AFTER THE AGE OF FIFTY: SWITZERLAND IN AN INTERNATIONAL COMPARISON

GIOVANNI FERRO LUZZI AND
ANNE SONNET *

People over the age of fifty constitute an enormous potential of skills and experience for society and the economy. Unfortunately, the contribution of older workers is often overlooked. Institutional regulations and the personnel policy of companies are frequently obsolete and hinder the continued employment of this age group. It is thus necessary to overcome the wide-spread stereotypes and enhance the status of those over fifty, who also make up an ever increasing share of the population. Many older workers would work longer if policies and business practices were better matched to their needs.

Thematic OECD study about older workers

The Organization for Economic Co-operation and Development (OECD) has analysed extensively the public old-age pension system in connection with population ageing. It has emphasised the necessity of reforming the pension system and creating a financially sound basis for it. These reforms will not be sufficient, however, to promote retirement at an older age and to reduce the risk of labour shortages. Additional measures in other areas will be needed, such as

- Adapting wage-setting practices to greying workforces;
- Fighting age discrimination and negative attitudes to working at a later age;
- Improving job skills of older workers and their working conditions; and
- Better activating older job seekers.

Relatively little is known about what countries have been or should be doing, in these areas. This is why

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in spring 2001 the OECD Employment, Labour and Social Affairs Committee decided to investigate the policies implemented to promote the prospects of the older labour force¹ – in terms of both the supply and demand side – on the labour market. Approximately 20 OECD countries chose to participate. Switzerland took part in the first round in 2002 together with Belgium, Sweden, Spain, Japan and Korea. The most important results of the report on Switzerland² are summarised below.

Rapid decline and ageing of the labour force

Switzerland – as is also the case for other OECD countries – is facing the problem of population ageing. According to the scenario “Trend” of the Federal Statistical Office (Bundesamt für Statistik; BFS) those over 65 years of age will make up, in comparison to the 20 to 64-year-olds, around 43 percent of the population in 2050 (2000: 25 percent). Even if the participation level remains at the high level of 2000, the Swiss labour force will decline as of 2020 with a marked ageing process. According to this scenario, those over fifty will make up 31 percent of the population in 2020 (2000: 25 percent).

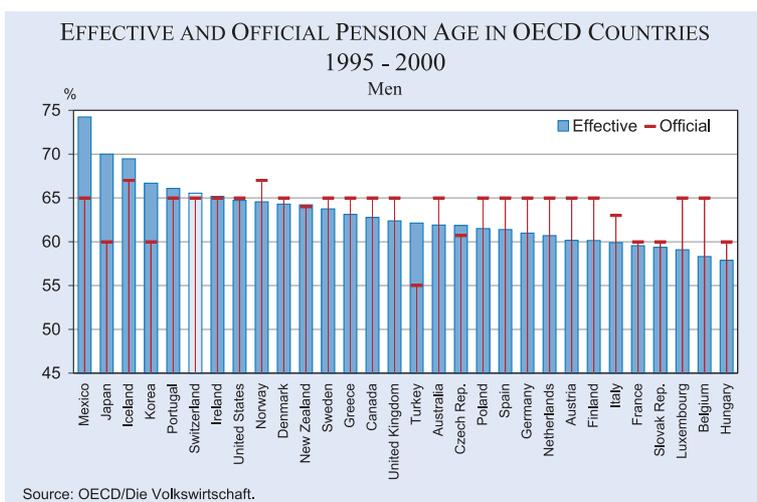
Periodic revision of the social security system

The Swiss practice of periodically adjusting the social security system to the changing social situation makes it possible in the mid-term to proceed in a pragmatic manner and at the same time to consider longer-term demographic changes. The current reforms of old-age and survivor insurance – AHV (1st pillar: pay-as-you-go system) and old-age insurance (2nd pillar: funding principle) should guarantee retirees a sufficient income and greater flexibility. The reform of the workers’ disability insurance (IV) and unemployment insurance (ALV) has taken into account the fact that too many older workers have become invalid or are counted as long-term unemployed.

¹ In this review, “older workers” were defined as those over fifty years of age. The threshold of fifty years does not mean that this age marks the border between the young and the “old”. The feeling of being old is subjective and has little to do with biological age. In numerous countries, however, the participation rate of the labour force begins to decline above the age of fifty. To facilitate an international comparison, it is helpful to use the same age for all countries.

² The report was published in French (Vieillesse et politiques de l’emploi – Suisse). It can be found in the Internet at www.oecd.org/bookshop.

Figure 1

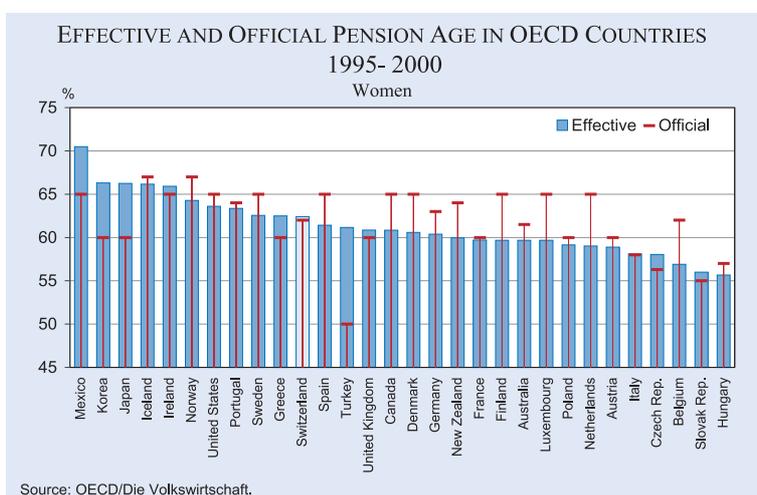


Source: OECD/Die Volkswirtschaft.

Currently it is being discussed whether the retirement age of 65 should be raised. It has already been decided that for women retirement age will be gradually extended to that of men. Figures 1 and 2 make clear that Switzerland is one of the few countries between 1995 and 2000 in which the effective retirement age was nearly identical with the official retirement age. To be able to maintain this high average age of retirement, however, reforms are necessary that will enable workers to retire early or later, provided that the system is neutral on an actuarial basis and includes appropriate pension reductions and increases. Furthermore, a clear interconnection between higher life expectations and the retirement age must be established, as Sweden has done in its recent reforms.³

³ This reform is presented in the OECD report on Sweden ("Ageing and Employment Policies - Sweden", Paris 2003).

Figure 2



Source: OECD/Die Volkswirtschaft.

Consolidation of the labour market for the labour force over fifty

In an international comparison Switzerland shows a high employment rate (see Figure 3) for the labour force over fifty. Among men aged 50 to 64, Switzerland is in the second place in OECD countries, behind Iceland. Despite economic stagnation in the 1990s and the increase in early retirement, the employment rate of men has only dropped slightly, whereas for women it continues to rise. Thus it is a question

of consolidating the high employment rate for men over fifty by promoting good jobs for them. Also women's performance at work must be recognized and long-term careers encouraged, while taking into account that a woman's choice of retirement age is often dependent on her partner's situation.

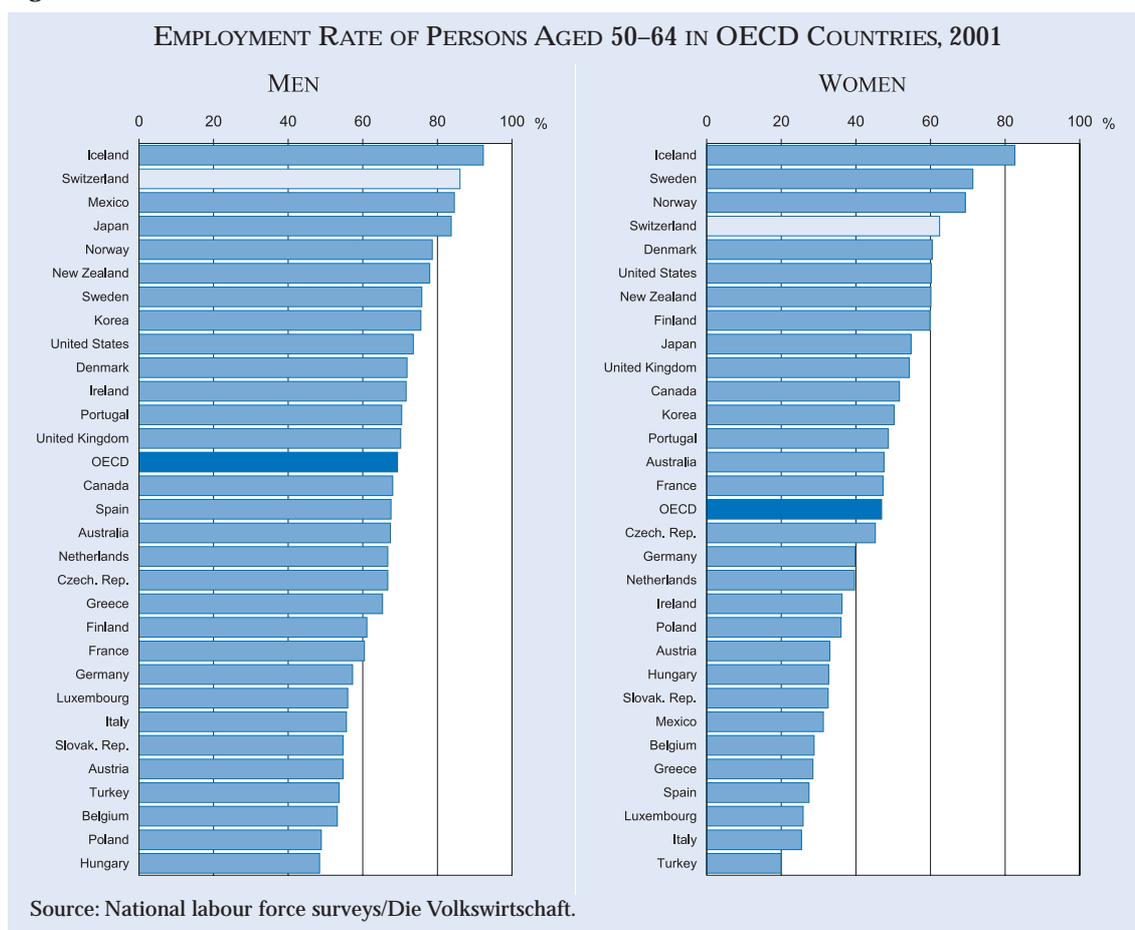
This generally positive situation can, however, not hide the fact that there is a lack of prospective human resource management. Increase in labour productivity has also been too low. The positive situation is mainly due to measures that have been implemented to increase employability, to strengthen professional competency of staff over fifty and also to increase the quality of their jobs. It has been difficult to implement this policy in atypical status such as part-time and temporary work, which is the case primarily for women. Among employed women aged 50 to 64, one-half of them work in part-time positions. A minority of older workers is facing real difficulties. These are mainly long-term unemployed who, without hope of being reintroduced into the labour market, receive either unemployment compensation or welfare assistance.

Where should reforms set in?

Reforms must be implemented simultaneously at several levels and should aim at the following goals:

- Enhancing co-ordination between different institutions;

Figure 3



- Adapting Public Employment Service (PES) measures to end-of-career situations;
- Encouraging employers to review their practices with regard to older workers; and
- Promoting older workers' employability.

Enhancing co-ordination between different institutions

A major problem in the Swiss insurance system is the lack of coordination between the different institutions dealing with the problems of the labour force aged over fifty. They all intervene in their own areas (labour market, unemployment, retirement, old-age insurance, company pensions, job-related training and invalidity) without taking into account the effects that their activities have on other areas.

Contributions to old-age insurance, for example, are calculated – regardless of their effect on employment – on the basis of the entire professional career. These contributions, which are paid by employer

and employee, are 7 percent of wages of young workers but increase to 18 percent of those of older workers. This can hinder employment prospects of older workers. It would be particularly important to evaluate the quantitative effects of contributions to the second pillar on the hiring of workers over fifty and their possibility to continue working.

In any case better co-ordination between the federal government and the cantons is desirable. The present division in social and educational policy has led, for example, to the federal government administering passive compensatory measures, whereas the cantons have been responsible for the implementation of active labour market measures. Proximity is important in order to adjust the active measures to the local needs. It has been noticeable, however, that the so-called “carrousel effect”⁴ has not had undesirable effects. This can encourage cantons to push off the burden of the unemployed

⁴ Thus at the end of the time frame stipulated by the Swiss Federal unemployment insurance an unemployed worker who takes on a temporary job paid by a canton can contribute again to unemployment insurance. The worker is then once again eligible for unemployment for a new time frame.

who are difficult to place – especially those above fifty – onto the federal government. The same is true for disability insurance, the claims for which are settled by the cantons.

Adapting Public Employment Service (PES) measures to end-of-careers situations in the labour market

The Swiss labour market authorities are concerned about the considerable effect of long-term unemployment for 55-year-olds. In connection with the last ALV reform, it was decided to provide compensation to older unemployed for a longer period of time on their way to reaching retirement age. This means that long-term unemployment among older workers could increase in comparison to that of young workers if the extended period of compensation is not accompanied by active measures to help them to find work, following the principle of mutual obligation. There are, however, no special measures currently directed at this target group. The reform of ALV also does not include any such measures. Monitoring is necessary in order to avoid abuse on the part of the employers who, seeking to profit from the situation, could let staff go at the age of 60.

That is why the regional job placement centres (RAV) should pay considerable attention to the difficulties of older workers, who are increasingly faced with employers refusing to hire older applicants aged over fifty. Emphasis should be placed on supporting the older unemployed looking for work. In addition, potential employers should be encouraged to create new positions. The current funds for labour market measures should be evaluated and innovative forms of subsidies developed for those who are most difficult to place. Measures should also be considered that make it easier for the unemployed over fifty to become self-employed. Like-

wise promising appears to be to train the advisors who support people at the end of their working lives.

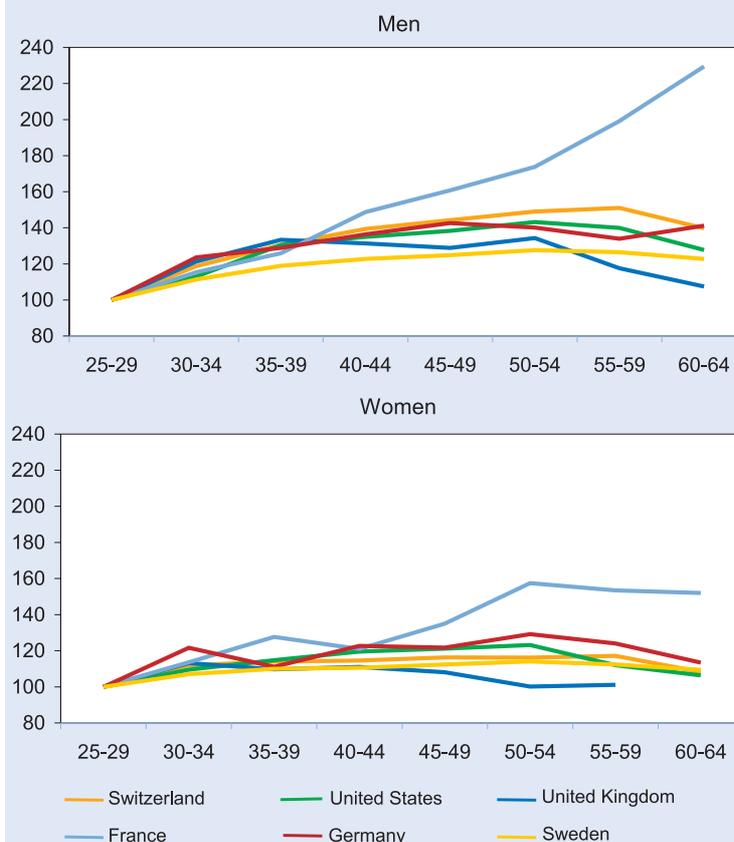
Encouraging employers to review their practices with regard to older workers

Thanks to the considerable reserves of the pension fund, it was relatively easy to finance early retirement in the 1990s. In the meantime, companies have, however, become aware that qualified staff – and thus considerable know-how – have been irreplaceably lost. Recently, the difficult working conditions in the construction industry have resulted in a collective agreement between social partners proposing early retirement.

An essential characteristic of older workers is that their wage is much higher than that of younger ones. This so-called experience or age bonus can be a considerable hindrance for employment opportu-

Figures 4

AGE-EARNING PROFILES IN SELECTED OECD COUNTRIES
earnings of 25-29 = 100



Sources: Schweizerische Lohnstrukturerhebung (2000); US: Current Population Survey (2000); Great Britain: Labour Force Survey (2000); France: Enquête Emploi (2000); Germany: German Socio-economic Panel (1998); Sweden: Statistics Sweden (2000)/Die Volkswirtschaft.

nities of older workers, especially in difficult economic situations. An international comparison has shown that earnings for Swiss men increase considerable with age (see Figure 4). Social partners should thus carefully consider the negative consequences of seniority, which links age or tenure with wages. This link could be weakened via a decentralised wage determination, which takes into account to a greater extent the skills and productivity of individual workers.

In practice, it is important that companies' human resource policies incorporate different situations of 50-year-olds. In some areas, it is necessary to intervene considerable before this age. Social partners could publish examples in the internet of companies that do something to promote employment of the older labour force. A website of this sort, very popular, has been created by the Austrian Industrial Organization.⁵

Social partners should make sure that the working conditions are improved for the entire labour force. Every qualitative increase in the working conditions means a reduction in premature health problems and the avoidance of stress, which has a positive effect on keeping older employees at work. One possibility would be to launch a national campaign along the lines of the Finnish model to promote working conditions that are better suited to older workers. Furthermore, specific actions should also be carried out to help older staff, for example, the elimination of night shifts for those over 60 or the possibility of more flexible working hours.

The trickiest issue concerns the hiring of the unemployed over fifty. It is usual for job advertisements to address a specific age group. This can be seen as discriminatory and unconstitutional because categories of the labour force are excluded on the basis of a personal characteristic. Campaigns have to be conducted against this type of discrimination on the part of the employer so that age is no longer a hindrance to employment.

⁵ Website: www.arbeitundalter.at.

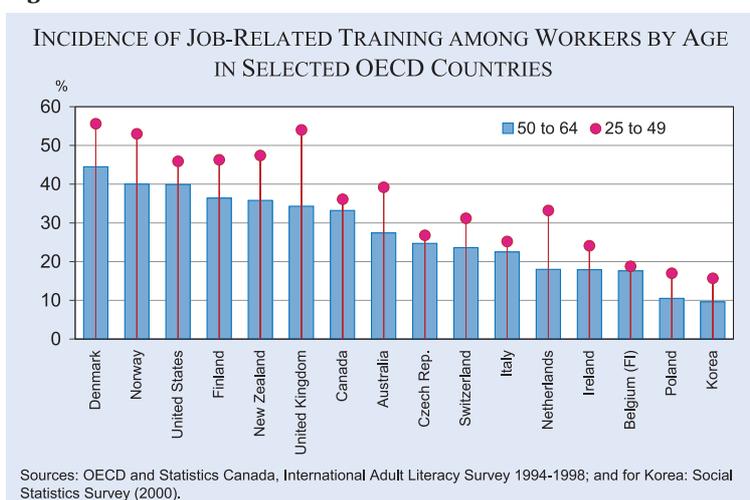
Promoting older workers' employability

In the Swiss education system, continuous training appears to be a neglected area, in general. Continuous training is primarily seen as being dependent on personal initiative of the individual. The principle of a training right, as in various Scandinavian countries, does not exist in Switzerland. The contribution of the federal government to continuous training is also very limited.

Like in most other OECD countries, in Switzerland participation in further job-related training in companies is not available on a equal basis to all staff members. Young and well-educated employees benefit the most. Those fifty and over have fewer possibilities to update their skills and qualifications (see Figure 5). In a world in which knowledge and technology change so fast, developments of this kind tend to contribute to worsening the situation for this age group.

It is thus necessary to motivate companies and workers to participate in high quality recognised vocational training over the entire career. Methods for recognition, certification and validation of experience could enhance the skills of the older and less qualified labour force and motivate them to continue learning. Furthermore, the social partners should be encouraged to incorporate innovative measures for the financing of training and continuous education programmes in collective agreements. The financial participation of workers in their own further education could be promoted by offering tax incentives.

Figure 5

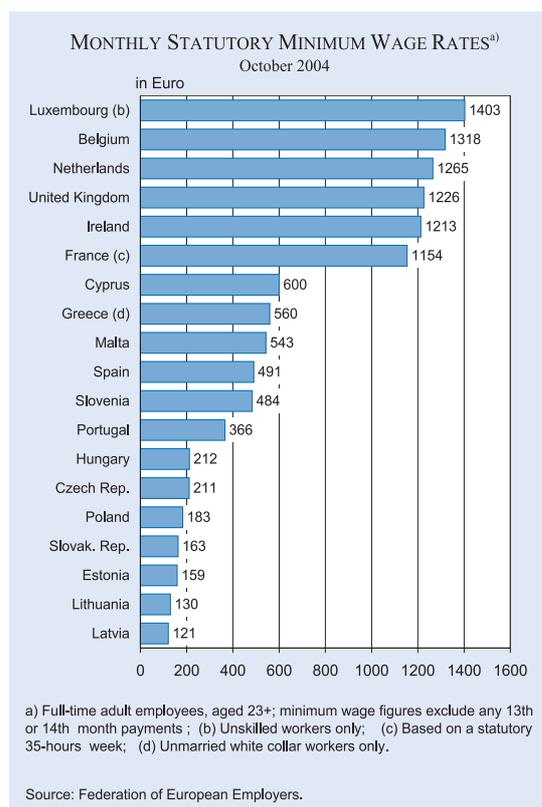


STATUTORY MINIMUM WAGES

Nineteen of the 25 EU member states presently have statutory minimum wages (see the Figure). As a result of a particularly strong tradition of free collective bargaining in Germany, the Scandinavian countries (Denmark, Sweden and Finland), Austria and Italy, these countries have spoken out against the introduction of a minimum wage law. Whereas statutory minimum wages have a long tradition in the majority of the old EU states, they were introduced in Great Britain and Ireland only in the 1990s as a reaction to the decreasing coverage rate of collective agreements and an expanding low-wage sector.

With respect to their absolute level, minimum wages vary considerably from country to country. Compared with the national gross wages of an average production worker the differences are, of course, not that great. The Table shows, however, that countries tolerate different wage dispersions at the bottom. Whereas in France minimum wages were 61.5 percent of average wages in 2003, the corresponding values in the Czech Republic were 32.8 percent and in Poland 31.4 percent.

Although the statutory minimum wage is determined in the end by the individual governments, de facto it is the result in almost all countries of more or less formalised negotiations between govern-



ments and the parties involved in collective bargaining. In Belgium and Greece the minimum wage is explicitly fixed by a national collective agreement. In the remaining countries there are numerous bi- and tri-partite institutions that make specific recommendations for raising the statutory minimum wage. Many European unions see statutory minimum wages as an important hindrance to the growth of the low-wage sector.

W. O.

Wage dispersion

Country	Minimum wage x 12, € ^{a)}	Average earnings, € ^{b)}	Wage dispersion, %
	(1)	(2)	(3) = (1) : (2)
Luxembourg	16,836	32,198	52.3
Belgium	15,816	31,328	50.5
Netherlands	15,180	31,790	47.8
United Kingdom	14,712	32,650	45.1
Ireland	14,556	26,939	54.0
France	13,848	22,533	61.5
Greece	6,720	11,908	56.4
Spain	5,892	16,975	34.7
Portugal	4,392	8,677	50.6
Hungary	2,544	5,150	49.4
Czech Republic	2,532	7,712	32.8
Poland	2,196	6,993	31.4
Slovak Republic	1,956	4,004	48.9

a) October 2004. – b) Earnings of an average production worker in 2003.

Sources: Federation of European Employers; OECD, Taxing Wages 2002-2003, Paris 2004.

EXPENDITURE RULES

Fiscal (or budgetary) rules regulate the development of public budget deficits and surpluses (see DICE Report 2/2004), without explicit reference to expenditures or revenues. The revenue side is strongly dependent on the growth development of the economy and can be influenced only by tax-rate and tax-system decisions, which do not fit easily into current stabilisation policy or to short-term budget consolidation. The expenditure side of the public budget, in contrast, offers a wider range of possibilities for current and discretionary policy decisions aimed at stabilising the economy or consolidating the budget. Explicit expenditure rules, thus, might serve to make fiscal rules more effective.

Such a possible underpinning of fiscal rules by expenditure rules may be of specific importance for EU countries. All member states are required to avoid “excessive deficits” (considered to be above 3 percent of GDP according to the EU Treaty), while Euro countries are even obliged to have a budget position of “close to balance or in surplus” according to the Maastricht Treaty.

Expenditure rules, which formulate expenditure targets, can be designed in different ways:

- A rule can relate to the total of all expenditures, to some particular expenditure items only or can exclude some items (like investment expenditures or interest payments). The rule can also specify different targets for different aggregates.
- Expenditures may be those of the central government only or may include all administrative levels.
- Expenditure targets and their development can be expressed in nominal or in real terms, and as a level or a rate of change, which leads to four possibilities.
- The rule must relate to a certain time span within which the target is to be met. This may be the next year only or a longer period.
- The expenditure rules may be based on legislation or on political commitment only.
- An effective rule must specify possible sanctions in case the target is not met.

The majority of EU member countries – 14 out of 25 – have installed such rules to keep the expendi-

ture side of their budgets under control (see Table 1). Germany already introduced expenditure rules in the beginning of the 1980s, with other EU countries following 10 to 20 years later. In some countries such rules have been introduced very recently – in reaction to the Stability and Growth Pact of Maastricht.

In many countries expenditure rules relate to total public expenditures, but there are also cases where a specific subset of expenditures is addressed, for example primary expenditures in Belgium, Ireland and Italy, public consumption in Denmark, compensation of public employees in Greece. In Austria and Italy two and three targets, respectively, are in force.

Most countries formulate their expenditure rules only for the central government sector, while borrowing restrictions hold for lower government levels. An exception is Germany where expenditure rules – albeit soft ones – apply to all levels of government.

The specific way in which an expenditure target is expressed differs widely in EU countries. All of the above-mentioned four possibilities occur. A target of a real or nominal growth rate is widespread, but some countries put ceilings on (absolute) levels of certain expenditure items (for example in Italy, Spain, Sweden and the UK).

There is also a wide variety concerning the time span for which the rule applies. The majority of countries have installed a multi-year framework, but its concrete definition differs.

Most expenditure rules do not have a legal basis but rest on a political commitment. Thus, also their enforcement is weak. This is reflected in the absence of prescribed actions in case of non-compliance to the rules in most countries (see Table 2) where no enforcement measures nor sanctions are specified ex-ante. An exception seems to be Austria, where for total expenditures (not for administrative expenditures) similar sanctions apply as are foreseen in the “excessive deficit procedure” of the Maastricht Treaty.

The EU Commission (2003) analysed the development of expenditures following the introduction of spending rules in 10 EU countries. The conclusion reached was “that there are no evident changes in

Table 1

Rules for public expenditure, EU countries, 2003: Basic characteristics

	Expenditure item	Definition of target	Level of application	Date of introduction	Time span
Austria	Administrative expenditure	Cuts in personnel, mostly through not replacing civil servants leaving for retirement.	Central government.	Previous rule: 2000; forthcoming rule: 2003.	End of legislation period (previous rule: 2003 in theory but government collapsed in 2002; for forthcoming rule: end of 2006).
	Total expenditure	Budget balance rule. However, budgetary targets can be attained via expenditure side measures only.	Regional and local governments.	2001	End of the current financial equalisation.
Belgium	Primary expenditure	Annual real growth rate to 1.5%, in medium term.	Originally: federal government and social security (entity 1). From 2001 onwards: federal government.	First mentioned at end of 1998 as 'point of reference'.	Medium term (time frame as covered by stability programme).
Denmark	Public consumption	Annual real growth rate to 1% on average during 1999-2005.	Central government.	First mentioned in 1997, but became fully binding in 1999.	Multi-annual rule (three years).
Finland	Total expenditure	Freezing real central government spending all the level of 1999 outcome.	Central government on-budget expenditure excluding extra-budgetary funds (pension, etc.)	1999, but annual frames for central government spending were designed already at the beginning of 1990s.	Cabinet period (latest: 1999-March 2003).
France	Total expenditure	Cumulative real growth rates, as established each year for the next 3 years.	Mainly central government.	1997	Medium term, rolling.
Germany	Overall expenditure	Annual nominal growth rate to be agreed on yearly basis by <i>Finanzplanungsrat</i> (FPC).	Central, regional and local governments.	Beginning of 1980s.	Current and following four years.
Greece	Compensation of employees	Recruitment norm 5:1 (one new recruitment for every five civil servants leaving service), except for health, education and armed forces where the norm is 1:1.	Central government.	1997	Indefinite
Ireland	Total expenditure	Annual nominal growth of 4% on average during 1998-2002.	Central government.	1997	5 years of the government's term: 1998-2002.
Italy	Primary expenditure	Nominal ceilings or "safeguard rules" for all provisions included in all legislation introducing new and higher expenditures.	General government.	End 2002	Indefinite
	Current primary expenditure of regions	In 2002, +4.5% compared to 2000 engagements. In 2003, 2004 and 2005: 2002 absolute value + target inflation.	Regions.	End 2001	2002-2004

(Table 1 continued)

	Expenditure item	Definition of target	Level of application	Date of introduction	Time span
Italy	State funding of health care expenditure	Ceilings on expenditure by regions over a 3-year period. Revised in 2001: ceiling of € 71.3 billion in 2001, with annual increases in 2002-2004 equal to nominal GDP growth as estimated in the medium-term plan.	Regions.	2000	2000-2003 (revised target for 2001-2004).
Netherlands	Expenditure as defined by the ceilings	Medium term real expenditure ceilings, translated each year into nominal amounts.	General government.	First introduced in 1994; adapted in 1998 and 2002.	Medium term: coverage according to cabinet period.
Portugal	Compensation of employees	No new labour contracts in the central administration are to be signed unless authorised by the Minister of Finance.	Central government.	2002	Current legislature (2002-2005).
Spain	Non financial expenditure	Fixed ceiling set up annually in the budget Law.	Central government.	2003	Annually
Sweden	Primary expenditure plus expenditure for the old-age pension system outside the budget.	Annual ceiling on nominal expenditure: expenditure covered by the ceiling should not rise faster than (projected) nominal GDP.	Central government.	1997	3 years ahead, rolling.
United Kingdom	Departmental Expenditure Limits (DEL) ^{a)}	Government Department sets spending plans for the level of nominal expenditure for three years ahead in so-called Comprehensive Spending Reviews (CSR). Parliamentary authority to spend must still be obtained each year.	Government Departments.	First launched under the 1998 CSR for the period 1999-2002. A new batch of three years was set in the 2000 CSR and again in the 2002 CSR.	3 years. The CSR take place every two years – the third year of the previous exercise becomes the first year of the succeeding exercise.

^{a)} The two main parts of the UK's budgeting and control framework are DEL (Departmental Expenditure Limits) and AME (Annually Managed Expenditure). Government departments are given three-year spending limits: the DELs. Any spending that cannot reasonably be subject to such multi-year limits is included in AME (e.g. social security spending, net payments to the EC). All AME projections for future years are estimates which are updated twice-yearly in the Budget and Pre-Budget Reports. Together, AME and DEL sum to Total Managed Expenditure (TME), a national accounts measure defined as public sector current expenditure plus net investment plus depreciation. In tables 1 and 2, only DEL spending is included, since this is the only part of TME which is subject to multi-year limits.

Sources: European Commission (2003), Public Finances in EMU 2003, Brussels (COM (2003) 283 final); also published in: European Commission (ed.), (2003), European Economy No 3/2003.

Table 2

Rules for public expenditure, EU countries, 2003: Non-compliance, shocks, experience

	Action in case of non-compliance	Exception to rule in case of economic shocks	Experience with the rule
Austria (Administrative expenditure)	No measures specified ex ante.	No automatic exceptions specified ex ante.	The planned personnel cuts were implemented as planned from 2000-2002. Despite an increase in pension expenditure for public servants, it is assumed that this rule has had a restraining impact on expenditure.
Austria (Total expenditure)	Financial sanctions similar to those of the excessive deficit procedure of the SGP, via revenue distribution mechanism between central and lowers levels of government.	The flood disaster in 2002 led to a temporary suspension of the rule, i.e. not taking into account of flood-related expenditure in the year 2002 and 2003.	Ceiling not respected in 2001. Not respected in 2002 but suspended for that year. In general, difficult to measure structural savings of regions.
Belgium	No measures specified ex ante.	No automatic exceptions specified ex ante.	Limit was respected in 2000 and 2001, but not in 1999. Difficult to judge adherence given status of medium term benchmark.
Denmark	No measures specified ex ante.	No automatic exceptions specified ex ante. However, discretionary revisions of target have taken place, e.g. in 2001 when target was raised from 1% to 2.2%.	Difficult to judge adherence, given specification of average target over several years and revisions of the target during that period. New government is implementing system that aims at recuperating slippage in subsequent years.
Finland	No measures specified ex ante.	No automatic exceptions specified ex ante. However, declining government debt and falling unemployment have created leeway for additional expenditure.	Overruns occurred in 2001 and 2002 and according to the 2003 spending guideline central government budgetary spending is estimated at € 1.2 billion over the outcome of 1999. It is generally assumed that the framework has had a restraining impact on expenditure.
France	No measures specified ex ante. These targets are not legally binding and are usually adjusted in medium term programmes of later years and the final budget for any particular year.	No automatic exceptions specified ex ante.	The original medium term objectives have not been respected. However, in general the increases fixed in the yearly budget have been respected, except in 2002.
Germany	From 2004 onwards, the FPC would discuss deviations and could agree upon recommendations.	No automatic exceptions specified ex ante. However, discretionary revisions of targets have taken place, at least in downswings.	Ceiling not respected in 2002; it remains to be seen how possible recommendations by the FPC on non-compliance would affect outcomes.
Greece	No measures specified ex ante.	No automatic exceptions specified ex ante.	Political commitment, not legally binding. Difficult to assess the implementation of the recruitment norm.
Ireland	No measures specified ex ante. Target abandoned in budget for 2001 as the ceiling of 4% in nominal terms turned out to be ambitious given high nominal GDP growth.	No automatic exceptions specified ex ante.	Rule abandoned in budget for 2001 rather than adjusted to reflect higher than expected nominal GDP growth.
Italy (Primary expenditure)	Application of legislation is frozen until new legislation makes funding available.	No automatic exceptions specified ex ante.	Too early to assess. However, some evidence of a reduction in general government consumption on quarterly data.

(Table 2 continued)

	Action in case of non-compliance	Exception to rule in case of economic shocks	Experience with the rule
Italy (Current primary expenditure)	None direct. Remote action only in case of EU sanctions following a breach of the Maastricht Treaty 3% of GDP deficit threshold.	No automatic exceptions specified ex ante.	Too early to assess.
Italy (State funding of health-care expenditure)	None. State-Regions agreement. However, any extra deficit should be covered by regions through own resources or by expenditure cuts.	No automatic exceptions specified ex ante.	The ceiling was not respected and a new agreement between state and regions was negotiated in 2001. According to provisional figures, the ceiling was breached also in 2001.
Netherlands	Commitment to offset overruns of expenditure ceilings by expenditure cuts.	Specific rules formulated for dividing windfalls between lowering the deficit or the tax burden.	General expenditure ceiling has been adhered to, but overruns have occurred as regards the specific targets for subsectors (health care). It is generally assumed that the framework has had a restraining impact on expenditure.
Portugal	No measures specified ex ante.	The Finance Minister alone can override the freezing, in particular for sensitivity areas like health care.	Too early to be assessed.
Spain	No measures specified ex ante.	This limit includes a contingency fund, set at 2% within this limit, so as to meet unforeseen events in the budget. Therefore, any unexpected non-financial expenditure increases have to be met throughout this contingency fund and/or by decreasing other spending items.	To be assessed since 2003 is the first year of application.
Sweden	Bi-annual monitoring required by the Budget Law. If there are signs of overruns (overall) the government shall prepare a proposal for correction.	No automatic exceptions specified ex ante.	The expenditure ceilings have been respected in each year since 1997 when they were first introduced. It is generally assumed that the framework has had a restraining impact on expenditure.
United Kingdom	The DEL plans are binding, but they can be altered in the budget process and are subject to approval by government and parliament. Under- or overspending in one year can be offset in another year within the current three-year batch.	No automatic exceptions specified ex ante.	The government's medium term plans published in the Budget report, and which form the framework for DEL programmes, are required, under the terms of the Code for Fiscal Stability, to meet the government's fiscal rules. They have satisfied these rules so far.

Sources: European Commission (2003), Public Finances in EMU 2003, Brussels (COM (2003) 283 final); also published in: European Commission (ed.), (2003), European Economy No 3/2003.

the behaviour of expenditure once spending rules are introduced" (p. 143). This result may be plausibly related to the, most often, weak enforcement mechanism of the expenditure rules. Up to now, the existing expenditure rules do not seem to contribute largely to the better achievement of overall budget aims, like those of the Maastricht Treaty.

R.O.

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WAGE SETTING INSTITUTIONS

The main wage setting institutions are trade union density, the coverage of workers by collective bargaining provisions, centralisation and coordination of wage bargaining.

Trade union density can be defined as the extent of union membership of employees. It represents a measure of potential union bargaining clout. Trade union density in 2000 was highest in Iceland, Sweden, Finland, Denmark and Belgium. The determinant of the high union density rate in the last four countries is the so-called Ghent system, whereby unemployment benefit, as a rule, is administered by union-affiliated institutions. Union density rates are very low in France, Korea, the United States, Poland, Spain, Mexico and Switzerland (Table 1).

Collective bargaining coverage measures the real extent to which salaried workers are subject to union-negotiated terms and conditions of employment. It is thus a complementary indicator of union presence. The average level of bargaining coverage is almost twice as high as the average union density level (60 vs 34 percent). In continental Europe, at least two out of three workers tend to be covered by bargained wage setting, the exceptions being Switzerland and the central and eastern European countries. The high bargaining coverage is partly due to administrative extension mechanism. Collective bargaining coverage is very low in Korea, the United States and Japan (Table 1).

Apart from trade union density and coverage, bargaining centralisation and coordination play an important role in determining wages. The level where collective contracts are negotiated and formally set is one of the more obvious dimensions of bargaining structures. Three levels are usually distinguished: first, firms and workers may negotiate over terms and conditions of employment at the level of the individual enterprise or establishment. Canada, Japan, Korea and the United States have historically bargained at this level; the United Kingdom, New Zealand and some central and eastern European countries have joined this group more recently. At the other extreme, national unions and employer associations engage in inter-industry bargaining at national level, covering the entire economy or most parts of it – a feature historically characteristic of the Nordic countries, but also, from a different angle, of the arbitration system in Australia. Most continental European countries have traditionally favoured “intermediate” forms of wage negotiation, mainly at branch or sectoral level. The classification of countries by bargaining level is complicated by the fact that in many countries bargaining occurs at multiple levels. In a number of countries, such as Belgium, it is

Table 1
Trade union density and collective bargaining coverage, 2000

Country	Trade union density		Collective bargaining coverage ^{a)}	
	%	Ranking	%	Ranking
Australia	25	18	80+	6
Austria	37	8	95+	1
Belgium	56	5	90+	2
Canada	28	14	32	20
Czech Republic	27 ^{d)}	15	25+	21
Denmark	74	4	80+	6
Finland	76	3	90+	2
France	10	30	90+	2
Germany	25	17	68	13
Greece	27 ^{c)}	16	..	..
Hungary	20 ^{d)}	23	30+	18
Iceland	84	1	..	..
Ireland	38	7	..	..
Italy	35	10	80+	6
Japan	22	22	15+	23
Korea	11	29	10+	25
Luxembourg	34 ^{d)}	11	60+	14
Mexico	18 ^{b)}	24	..	..
Netherlands	23	20	80+	6
New Zealand	23	21	25+	21
Norway	54	6	70+	12
Poland	15 ^{d)}	27	40+	16
Portugal	24 ^{b)}	19	80+	6
Slovak Republic	36 ^{e)}	9	50+	15
Spain	15 ^{c)}	26	80+	6
Sweden	79	2	90+	2
Switzerland	18 ^{d)}	25	40+	16
Turkey	33	12	..	..
United Kingdom	31	13	30+	18
United States	13	28	14	24

.. Data not available. – ^{a)} Figures with a + sign represent lower-bound estimates. For the purposes of calculating rankings and averages, the indicated value was increased by 2.5 percentage points. – ^{b)} 1997. – ^{c)} 1998. – ^{d)} 2001. – ^{e)} 2002

Source: OECD Employment Outlook 2004, p. 145.

extremely difficult to localise for every single year or period “the” predominant bargaining level. Ideally, this level would need to be determined by taking into account what shares of employees are subject to wage bargaining at what level, and even more importantly, at which level most of the change in wage rates is being determined. The clas-

sification in Table 2 has taken into account the possibility of multiple-level negotiations by allowing for five, instead of three categories.

Conceptually different from the level where wages are formally set is the degree of coordination of bargaining. This degree is determined by the extent to which pay negotiations are co-ordinated across the economy and are thus able to take into account any consequences of settlements on the full economy. A high degree of coordination is not guaranteed by centralisation, for example when several rival unions bargain at peak level, or when peak-level contracts are undermined by conflictual behaviour at lower levels. Neither is centralisation a necessary precondition for coordination, since the latter can be achieved through the presence of coordinating institutions which assist bargainers at lower levels to act in concert. Table 2 distinguishes five levels of coordination. The two upper levels (4 and 5) integrate various possible features of economy-wide coordination, such as pattern-setting by key industries, as well as different forms of government involvement in wage setting, inter alia through tripartite agreements or wage schedules. Decentralised countries are usually characterised by fragmented bargaining with little or no coordination, with the important exception of Japan, where wage-setting is highly coordinated (particularly on the employers’ side) in the so-called annual spring offensive or *Shunto*. Germany, where negotiations are usually at the combined regional and sectoral levels, is characterised by pilot agreements in one key industry, usually the metal sector, which serve as a pattern for other bargaining agents. Belgium, Denmark, Italy and the Netherlands are among other countries that tend to get higher scores on the coordination than the centralisation dimension, because of different forms of peak-level coordination of sectoral bargaining or government intervention in tripartite agreements or social pacts.

W. O.

Table 2
Centralisation and coordination of wage bargaining
1995 – 2000^{a)}

Country	Centralisation ^{b)}	Coordination ^{c)}
Australia	2	2
Austria	3	4
Belgium	3	(4, 5)
Canada	1	1
Czech Republic	1	1
Denmark	2	(4)
Finland	5	5
France	2	2
Germany	3	4
Hungary	1	1
Ireland	4	4
Italy	2	4
Japan	1	4
Korea	1	1
Netherlands	3	4
New Zealand	1	1
Norway	(4, 5)	(4, 5)
Poland	1	1
Portugal	4	4
Slovak Republic	2	2
Spain	3	3
Sweden	3	3
Switzerland	2	4
United Kingdom	1	1
United States	1	1

^{a)} Figures in brackets are period averages in cases where at least two years differ from the period’s modal value. – ^{b)} Centralisation: 1= Company and plant level predominant; 2= Combination of industry and company/plant level, with an important share of employees covered by company bargains; 3 = Industry-level predominant; 4 = Predominantly industrial bargaining, but also recurrent central-level agreements; 5 = Central-level agreements of overriding importance. – ^{c)} Coordination: 1 = Fragmented company/plant bargaining, little or no coordination by upper-level associations; 2 = Fragmented industry and company-level bargaining, with little or no pattern-setting; 3 = Industry-level bargaining with irregular pattern-setting and moderate coordination among major bargaining actors; 4 = (a) informal coordination of industry and firm-level bargaining by (multiple) peak associations, (b) coordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules, (c) regular pattern-setting coupled with high union concentration and/or bargaining coordination by large firms, (d) government wage arbitration; 5 = (a) informal coordination of industry-level bargaining by an encompassing union confederation, (b) coordinated bargaining by peak confederations or government imposition of a wage schedule/freeze, with a peace obligation.

Source: OECD Employment Outlook 2004, p. 151.

Reference

OECD, Employment Outlook 2004, Paris 2004, chapter 3.

MORTGAGE BANKS

Throughout the world, banks extend credits for buying or building houses or for buying real estate. Due to the high level of collateral the credits are very secure. However, not all countries have created special legislation that makes it easier for banks to refinance these credits by issuing legally defined mortgage bonds or “covered bonds”, as they are mainly referred to in the international capital markets.

In Denmark and Germany the legal foundations for mortgage bonds were established more than 100 years ago. This long tradition, coupled with accumulated market experience, is the likely reason why these countries today account for the bulk of mortgage refinancing – outstanding and new issuance – in Europe (see Figure 1). The total market volume in Europe in terms of stocks of issued covered bonds amounts to about € 1.5 trillion.

Also in France legal provisions for mortgage bonds date back to the 19th century – but a sizable market for such bonds never developed due to legal inadequacies. It was only in 1999 that a new law was introduced in France.

In the United Kingdom and in the United States (as well as in Iceland) there is no specific law that regulates mortgage bonds. UK banks have a long tradition in refinancing their real estate and housing loans via so-called Asset Backed Securities (ABS). A major difference to covered bonds is that ABS are bonds issued by a special purpose vehicle on which all the underlying assets are transferred,

while covered bonds have an on balance sheet character, implying that all cover assets remain on the balance sheet of the issuer at least until an issuer goes insolvent. In order to diversify their investor base and to create a more liquid refinance instrument some British banks have recently started to create *Pfandbrief*-like bonds on a contractual basis, so-called structured covered bonds.

In the United States three-fifth of the mortgages extended for single-family homes are financed through the issuance of Mortgage Backed Securities (MBS), sub-markets of which are guaranteed by the Government National Mortgage Association (Ginnie Mae).

In several countries covered bonds are not only covered by real estate collateral but also by public sector credits (at the state, regional and communal level). These bonds are called “public covered bonds”. However, it is only in Germany that these bonds represent a larger share of outstanding covered bonds than the mortgage bonds proper (Figure 1).

With five notable exceptions all EU member countries dispose of a specific “covered bond” law. The exceptions concern – beside the UK – the Netherlands, Belgium and Italy. Also Estonia has not introduced a mortgage law up to now. While in Italy, Belgium and Estonia a covered bond legislation is under preparation, it is up to now only considered in the Netherlands. EU candidate countries like Bulgaria and Romania have already introduced such a law, while it is prepared in Croatia. Russia has recently introduced a legislation, while it is under consideration in the Ukraine. Figure 2

gives an overview on the year of introduction of legislation in Europe.

Covered bond regulations differ between countries in several respects. Tables 1 and 2 contain the respective information. Some regulatory features of special interest are summarised below.

1. The valuation of a mortgage loan eligible as a covered bond may rest on either the mortgage lending value or the market value of the collateral. The central European countries and

Figure 1

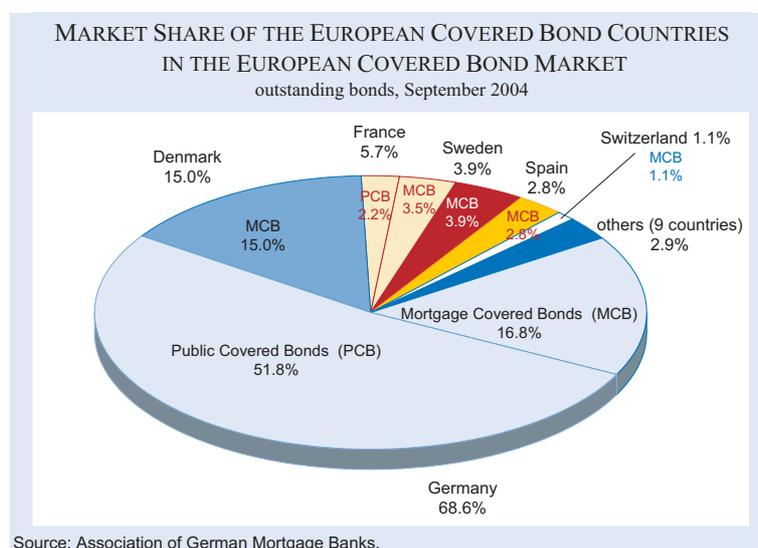


Table 1

Covered bond legislation in Europe: Basic system characteristics

	Regulation entered into force	Specialist bank principle	Refinanceable through covered bonds	Cover register	Legally anchored preferential right in bankruptcy	Regulations on valuation	Relative lending limit for funding through covered mortgage bonds	Absolute lending limit for funding through covered mortgage bonds
Denmark	1850/1989	Yes	Mortgage loans	No	Yes	Yes	40/60/70/80/84% of value of collateral	Yes
Germany	01.10.1900	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60% of value of collateral	Basically no (100% of market value)
Greece	1924	Yes	Mortgage loans	Yes	Yes (but uncertain)	Yes	75% of market value	75% of market value
Austria	01.01.1939	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60% of value of collateral	No
Switzerland	01.02.1939	Yes	Mortgage loans	Yes	Yes	Yes	2/3 of value of collateral	No
Spain	05.05.1981	No	Mortgage and public sector loans	No	Yes	Yes	70/80% of market value	No
Portugal	16.04.1990	No	Mortgage loans	Yes	Yes	Yes	80% of market value	No
Sweden	1992	In praxi: yes	Mortgage loans	No	No	Yes	60/75/85% of value of the property	No
Czech Republic	01.07.1995	Limited mortgage bonds licences	Mortgage loans	"independent declaration"	Yes	No	70% of market value	No
Slovak Republic	01.03.1996	Limited mortgage bonds licences	Mortgage loans and government loans secured by mortgages	Yes	Yes	Yes	70% of value of collateral	No
Hungary	07.06.1997	Yes	Mortgage loans	Yes	Yes	Yes	60% of value of collateral	70% of mortgage lending value
Luxembourg	19.12.1997	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60% of value of collateral	Basically no
Poland	01.01.1998	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60% of value of collateral	100% of mortgage lending value
Latvia	29.09.1998	No	Mortgage loans, loans guaranteed by government or municipalities	Yes	Yes	Yes	60/75% of market value	No
France	27.07.1999	Yes, but no personal	Mortgage loans, public sector loans and loans guaranteed by banks or insurances	No	Yes	Yes	60/80/100% of value of collateral/market value	60 / 80 / 100% of mortgage lending value/market value
Romania	09.12.1999	Unclear	Mortgage loans	No	No	No	60% of value of portfolio	No

(Table 1 continued)

	Regulation entered into force	Specialist bank principle	Refinancable through covered bonds	Cover register	Legally anchored preferential right in bankruptcy	Regulations on valuation	Relative lending limit for funding through covered mortgage bonds	Absolute lending limit for funding through covered mortgage bonds
Finland	01.01.2000	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60% of value of collateral	Basically no
Bulgaria	13.10.2000	No	Mortgage loans	Yes	Yes	Yes	60/80% of market value	No
Ireland	22.03.2002	Yes	Mortgage and public sector loans	Yes	Yes	Yes	60/75% of the prudent market value	yes (80% of prudent market value)
Lithuania	10/2003	No	Mortgage loans	No	Yes	Yes	30/40/50/70 % of mortgage value (prudent market value)	No
Russia	18.11.2003	No	Mortgage loans	Yes	Yes	No	70% of market value	No
Norway	Forthcoming 2004	Yes ("kredittforetak")	Mortgage and public sector loans	Yes	Yes	Yes, regulation by the supervision	60% of market value	60% of market value
United Kingdom	No specific legal provision for covered bonds.							
United States	No specific legal provision for covered bonds.							

Sources: Association of German Mortgage Banks (2004); Hagen, L. (2004).

Finland have chosen the first way, while Sweden, the Baltic countries, Portugal and Spain have taken the second route.

2. For being eligible loans funded by covered bonds must not exceed a certain percentage of its underlying value. This ratio is 60 percent in several countries, while it is 70 percent in some other. In some countries a range of ratios might be applied.

3. An important question is also who is allowed to issue mortgage bonds. In central Europe the specialist bank principle holds, while it is not – or less strictly – applied in the countries of South-Eastern and South-Western Europe.

4. The specialist bank principle is very strictly applied in France, Finland and Ireland, where the covered bond issuer is allowed only to hold eligible assets. In Denmark, Germany, Hungary, Luxembourg and Poland the specialist bank principle holds but the banks are allowed also to keep

non-eligible assets (which, by definition, do not contribute to the “cover”). The mortgage market in Russia and Latvia is characterised by the universal bank principle. There, any bank, provided that it has got a qualified covered bond licence, may issue mortgage bonds. In Germany there is a new legislation under way which will also introduce the universal bank principle (with qualified licensing).

5. To deserve the name “covered bond” the bond in question must possess special security properties. The most important properties are that their underlying assets must be “segregated” (i.e. not mixed up with those of less secure bonds) and “remote to bankruptcy” in case of an issuer’s insolvency. In most countries (but not in France and Spain, e.g.) the assets (the cover) must be listed in a register. National mortgage legislation differs widely in the range of flexibility granted to the banks for (re-)structuring and administering the cover.

Table 2

Covered bond legislation in Europe: ceilings, coverage and supervision

	Absolute lending ceiling	Non-cover limit (volume above the relative lending ceiling)	Trustee	Substitute coverage	Substitute coverage limit	Public sector bond	Special public supervision	Compliance with Art. 22 (4) of UCLIS ^{a)} regulation
Denmark	Yes	Not permitted	No	No	No	No	Yes	Yes
Germany	Basically no (100% of market value)	20%	Yes	Yes	10%	Yes	Yes	Yes
Greece	75% of market value	Not allowed	No	No	No	No	Yes	Yes (but unsure)
Austria	No	No	Yes	Yes	No	Yes	Yes	Yes
Switzerland	No	No	No	Yes	No	No	Yes	Yes
Spain	No	No	No	No	No	Yes	Yes	Yes
Portugal	No	No	No	Yes	No	No	Yes	Yes
Sweden	No	No	No	No	No	No	No	No
Czech Republic	No	No	No	Yes	10%	No	Yes	Yes
Slovak Republic	No	10%	Yes	Yes	10%	Yes	Yes	Yes
Hungary	10% of value of collateral	No	Yes	Yes	20%	No	Yes	Yes
Luxembourg	Basically no (market value?)	No	Yes	Yes	20%	Yes	Yes	Yes
Poland	100% of value of collateral	30%	Yes	Yes	10%	Yes	Yes	Yes
Latvia	No	No	No	Yes	20%	Yes	Yes	Yes
France	60/80/100% of value of collateral/market value	No	Yes	Yes	20%			
Romania	No	Unlimited	No	No	No	No	No	No
Finland	Basically no (market value?)	1/6	No	Temporary	No	Yes	Yes	Yes
Bulgaria	No	No	Basically no	Yes	30%	No	Unclear	Unclear
Ireland	Yes (80% of cautious market value)	Yes (10%)	Yes	Yes	20%	Yes	Yes	Yes
Lithuania	No	No	No	Yes	10%	No	Yes	Yes
Russia	No	No	Yes	Yes	20%	No	Yes	Yes
Norway	60% of market value	Not permitted	Yes	Yes	Proposal: 30% regulation of the supervisory authority (substitute coverage and derivatives)	Yes	Yes	Yes
United Kingdom	No specific legal provision for covered bonds							
United States	No specific legal provision for covered bonds							

^{a)} EU Directive on Undertaking for Collective Investment in Transferable Securities (UCITS).

Sources: Association of German Mortgage Banks (2004); Hagen, L. (2004).

EMPLOYMENT PROTECTION REGULATION

Employment protection refers to the protection of regular employment and the regulation of temporary work. The overall summary measure of the strictness of employment protection of the OECD relies on three main components related to protection of regular workers against (individual) dismissal, specific requirements for collective dismissals and regulation of temporary forms of employment.

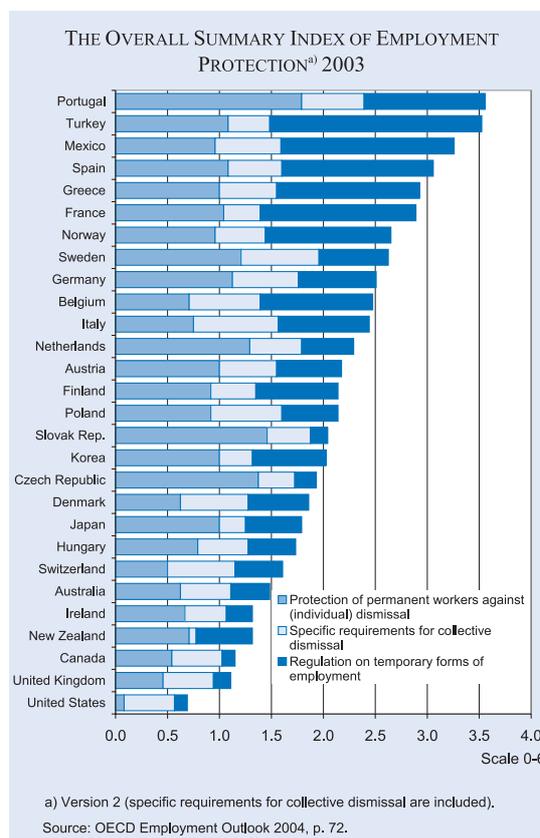
In order to assess job protection of workers with regular contracts, three main areas are considered: (i) difficulty of dismissal, that is legislative provisions setting conditions under which a dismissal is “justified” or “fair”; (ii) procedural inconveniences that the employer may face when starting the dismissal process; (iii) and notice and severance pay provisions. Regular employment contracts do not generally specify any duration for the employment relationship. Part of the role of employment protection is thus to define “just causes” or “serious reasons” for the termination of an employment relationship and the sanctions applicable to the employer in case of non-respect of this principle of just cause termination. In other words, these provisions set conditions under which it is possible for an employer to dismiss an employee. Procedural inconveniences can be seen as a complement to these provisions. Indeed, they may give the opportunity to the employee to challenge the layoff decision at an early stage of the process. These procedures may also involve a third party (such as a works’ council or the competent labour authority), usually not empowered to stop the process but that can nevertheless help to avoid the dismissal. When the dismissal is certain, notice and severance pay provisions are then the final costs for the employer.

Considering that collective dismissals may have a social cost, additional provisions have been introduced in almost all OECD countries to minimise this cost. The related component of the employment protection index only refers to additional delays and procedures required which go beyond those applicable for individual dismissal, and does not reflect the overall strictness of regulation applicable to collective dismissals. Indeed, whatever the number of additional requirements, collec-

tive dismissals are de facto strongly regulated when the regulation of individual dismissals is itself relatively strict.

Finally, provisions regarding fixed-term contracts and temporary work agencies are also considered. This component of the employment protection index is intended to measure the restrictions on the use of temporary employment by firms, with respect to the type of work for which these contracts are allowed and their duration.

Protection of regular contracts against (individual) dismissal constitutes the core component of the overall summary index of employment protection strictness. Indeed, although temporary forms of employment have grown in many OECD countries over the past two decades, regular contracts are still the most common employment arrangement. Temporary work is sometimes regarded as a way to circumvent rules governing regular contracts. For the component related to collective dismissals, the story is quite different: by construction, it includes only regulation applicable in addition to that applied in cases of individual dismissals and cannot therefore be considered as a stand-alone component of employment protection.



Summary indicators of the strictness of employment protection, 2003

Country	Regular employment	Temporary employment	Collective-dismissals	Overall employment protection ^{a)} (version 2)
Australia	1.5	0.9	2.9	1.5
Austria	2.4	1.5	3.3	2.2
Belgium	1.7	2.6	4.1	2.5
Canada	1.3	0.3	2.9	1.1
Czech Republic	3.3	0.5	2.1	1.9
Denmark	1.5	1.4	3.9	1.8
Finland	2.2	1.9	2.6	2.1
France	2.5	3.6	2.1	2.9
Germany	2.7	1.8	3.8	2.5
Greece	2.4	3.3	3.3	2.9
Hungary	1.9	1.1	2.9	1.7
Ireland	1.6	0.6	2.4	1.3
Italy	1.8	2.1	4.9	2.4
Japan	2.4	1.3	1.5	1.8
Korea	2.4	1.7	1.9	2.0
Mexico	2.3	4.0	3.8	3.2
Netherlands	3.1	1.2	3.0	2.3
New Zealand	1.7	1.3	0.4	1.3
Norway	2.3	2.9	2.9	2.6
Poland	2.2	1.3	4.1	2.1
Portugal	4.3	2.8	3.6	3.5
Slovak Republic	3.5	0.4	2.5	2.0
Spain	2.6	3.5	3.1	3.1
Sweden	2.9	1.6	4.5	2.6
Switzerland	1.2	1.1	3.9	1.6
Turkey	2.6	4.9	2.4	3.5
United Kingdom	1.1	0.4	2.9	1.1
United States	0.2	0.3	2.9	0.7

^{a)} Weighting scheme: Regular employment 5/12; temporary employment 5/12, and collective dismissals 2/12.

Source: OECD Employment Outlook 2004, p. 117.

The overall strictness of employment protection varies widely between countries. France, Greece, Spain, Mexico, Turkey and Portugal face the highest employment protection. The United States, the United Kingdom, Canada and New Zealand are at the lowest end (see chart and table). With respect to the strictness of employment protection, specific requirements for collective dismissals do not play a major role. Indeed, taking account of these specific requirements in the overall measure of employment protection, strictness does not affect cross-country comparisons much. Conversely, regulation of temporary employment appears to be a key element behind cross-countries differences. France, Greece, Spain, Mexico and Turkey offer, for instance, the strictest employment protection among OECD countries, while not having particularly stringent provisions for regular contracts. Overall, in cross-country comparisons, there is more dispersion in the strictness of regulation for temporary work than for regular contracts.

W. O.

Reference

OECD, Employment Outlook 2004, Paris 2004, chapter 2.

EVOLUTION OF HEALTH-CARE REFORMS

At the end of the 19th century, when organised health-care systems began to develop in many, mainly Continental European, countries, spending for health care was low due to the limited contribution the medical profession could make to healing the majority of sicknesses. The main task of health insurance, at that time, was to provide income replacement in case of sickness. It is only after the Second World War that treatment possibilities increased dramatically, e.g. by the discovery of penicillin and other antibiotics. This and the further scientific development caused people to change gradually their priorities with respect to health-care relative to other goods and services. But also most governments of the industrialised countries reacted and created or enlarged public health-care systems.

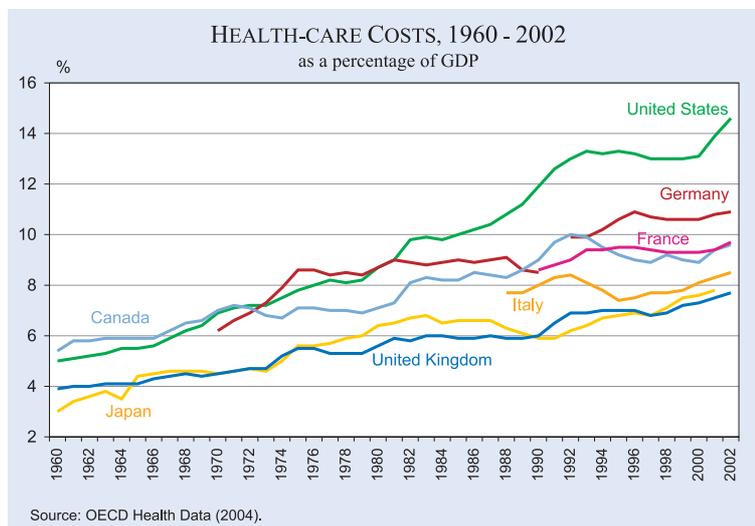
In 1960, the first year for which country-comparative data on total health-care costs are available, health-care costs as a percentage of GDP were still relatively low (see Figure). In the following years, however, health-care costs witnessed an unprecedented, nearly continuous rise. On average for some large industrial countries considered here ("G7")¹, the share of health-care costs in GDP has more than doubled in the last 40 years.

This development has mainly been driven by the continued advances of the medical profession, by increased coverage of the population enrolled in health-care insurance plans and by raising the

(equality of) access to advanced levels of medical treatment for a widening range of sicknesses. During the last two decades, or so, a further cost-increasing factor grew in importance, the ageing of the populations.

The development of costs exerted two types of rising pressure. The first is the pressure on government finances, because in all countries the health-care systems are funded or at least supported by the government, albeit to differing degrees. The second pressure is on the labour market, at least in those countries where the contributions to health insurance are shared between employer and employee. This type of pressure, however, does not exist in countries with a totally tax-financed public health-care system, like that of the UK.

The necessary cost-containment could have been achieved by either administrative (regulatory) measures or by a more market-oriented solution. In a first attempt to control costs, it is the administrative method which has been used by practically all countries (Cutler 2002). Such methods (see Table) comprised, e.g., global budgets for hospitals and/or physicians (Canada, France, Germany, UK), prescription drug budgets for individual physicians (Germany) or for the whole country (France), tighter fee schedules for physicians (France, Japan, UK, US) and limited expansion plans for hospitals (Japan). The main reason for the dominating regulatory approach to health-care cost reductions can be seen in the – not unjustified – fear of governments and people that a market-oriented way of reform might harm the degree of equality in health-care burden sharing and health-care access reached over the course of time.



These regulatory measures, introduced mainly in the 1980s, were partly effective. They have helped reduce the growth path of costs, but have not been able to prevent costs from rising steadily, albeit at a different pace in the countries considered. Moreover, the administrative approach of non-market oriented rationing led to wait-

¹ For information on more countries (28) see the table "Evolution of Public Health-Care Systems" in DICE database (www.cesifo.de/DICE).

Evolution of health-care systems in selected large industrial countries

	Introduction of public health-care system	Important reforms from 1945 – 1980	Important reforms from 1981 - today
Canada		1947: First provincial health insurance program; 1966: Establishment of Medicare; 1971: Last province enacts Medicare.	1984: Canada Health Act; physicians must accept government payment as payment in full; Hospitals: global budgets established with universal coverage; Certification of Need required for expansion of a hospital; 1991: Federal payments to provinces cut; tighter supply-side limits by provinces; merging of hospitals; cutback in public coverage (dental care, visions exams).
France	Late 19th century: Local sickness funds for certain workers; 1928: Compulsory health insurance for low-wage workers in certain industries.	1967: National insurance fund for salaried workers; agricultural and self-employed covered by other funds; 1978: National coverage achieved; 1979: Fee schedules tightened.	1984/85: Global budgets introduced for public hospitals to tighten expenditures; 1993: Global budgets introduced for private hospitals; 1994: National targets for pharmaceutical expenditures; 1996: Global budget for the health system as a whole; review of physicians responsible for overspending; regional hospital agencies to manage funding; increase of patient co-payments.
Germany	1883: Introduction of mandatory health insurance; 1884: Extension to work related accidents; 1889: Old age and disability; services included: sick pay, maternity pay and death compensation.	1949: Reestablishment of the health care system which was in power at the end of the Weimar period; 1977: Health Insurance Cost-Containment Act: Requirement to pursue a goal of stability in contributions for the sickness funds and the provider of health care; expenditure cap on ambulatory care; global budgets for physician associations.	1981: 90% coverage achieved; 1982: Out-of-pocket payments for drugs increased; 1984-86: Global budgets introduced for hospitals; 1989: Health Reform Act: Reference pricing system for drugs, increased patient co-payments, modest reduction of covered services; 1993: Health Care Structure Reform Act: links growth of health-care spending to growth of wages; more bundling of hospital payments; increase of patient co-payment; risk adjustment for sickness funds; prescription drug budgets for physicians; 1996: Health Insurance Contribution Rate Exoneration Act; 1997: First and Second Statutory Health Insurance Restructuring Acts, with choice of public sickness fund for the insured and increase of co-payments; 1998: Act to Strengthen Solidarity in Statutory Health Insurance; 2004: Reform Act of Statutory Health Insurance: higher co-payments; possibility for public health insurers to give rebates to low-cost insured; ordering of pharmaceuticals by e-mail permitted; reform of pharmacists' mark-up.
Italy	1861-1920: Autonomous mutual aid associations for artisans and workers; the Catholic Church and charitable institutions established several health care providers; moreover, provincial and municipal networks provided social assistance to disabled and needy people; 1898: First insurance for occupational accidents; 1923: Right for hospital care for the needy.	Mutual aid societies converted to local branches of national insurance program; 1958: Creation of an independent Ministry of Health; 1978: Creation of the National Health Service.	1990: Move from per-diem to DRG payments for hospitals; 1992: Creation of regional enterprises to limit spending; regional enterprises can contract out services, hospitals can become independent; 1994: First National Health Plan: definition of national health targets and establishment of uniform levels of assistance should be guaranteed to all citizens; 1995: Patients can opt out of SSN; 1998: Second National Health Plan.

(Table continued)

	Introduction of public health-care system	Important reforms from 1945 – 1980	Important reforms from 1981 - today
Japan	1922: Health Insurance Law covered some workers (extended in 1938)	1958: National Health Insurance mandated; 1961: In all local governments implemented.	Early 1980s: tighter fee schedules for hospitals and physicians; 1985 - 87: Hospital beds and expansion capped; 1997: Substantial increase in patient co-insurance, mandated prices for pharmaceuticals eliminated.
United Kingdom	1911: Manual workers and low wage workers covered.	1946: National health insurance. 1948: Introduction of the National Health Service: Collective responsibility by the state for a comprehensive health service which was to be available to the entire population free at the point of use.	1990: National Health Service and Community Care Act: GPs become "fundholders", they receive capitates payment per patient and must pay for services (drugs, inpatient care, emergency care), hospitals become "trusts" (similar to not-for-profit business); Global budgets established with NHS; salaries of physicians established with NHS; 1998 reform: Local Health Action Zones to set health goals and coordinate goals; Primary Care Groups made up of all physicians in an area will replace fundholders.
United States	In general: No universal public health insurance.	1965: Creation of Medicaid (support for the poor) and Medicare (support for the elderly).	1983: Prospective payment for hospital admission; 1992: Fee schedule for physicians; 1993 proposal (failed): universal insurance coverage; 1996: Health Insurance Portability and Accountability Act: guarantees portability of insurance for job to job transitions; 1997: Balanced Budget Act: choices in Medicare are expanded; 2003: Medicare and Medicaid reimbursement of drug costs expanded.

Sources: Publications of the European Observatory on Health Care Systems: Health Care Systems in Transition, on individual countries, different years; Cutler (2002), see references.

ing lists for hospital admissions and ambulatory physician services in many countries (Osterkamp 2002) and to other forms of restricted access to medical services as well as to inefficiencies in the provision of health care at the micro (hospital and physician) level. The ultimately insufficient cost-containment as well as the negative effects of rationing on the widely pursued aim of equal access to health care and of equal health-care burden sharing induced a second wave of reforms in the 1990s, which pursued a stronger market-based approach of health-care reform and cost-containment (Cutler 2002).

The main building blocks of that reform wave were competition and incentives. Competition can prevail between insurers as well as between providers. Incentives can be designed to induce the insured to reduce the use of those health services that are not urgent or of little individual benefit, while incentives for providers should lead them to more cost-efficient ways of healing sicknesses.

Due to the concern for equality of access and burden sharing, governments were reluctant to use market-oriented methods for reforming health-care systems. But rationing, as it has developed, was likewise not without unwanted repercussions on equality. Thus, what the 1990s saw as health-care reforms were mainly mixtures of both approaches. Administrative regulations have often been tightened, but elements of competition and incentives have also been increasingly introduced. Competition between providers has been intensified in nearly all countries and competition between insurers has been made possible or intensified (Germany, US). However, it is mainly in the US where health

insurers have developed from a passive “payer” to an active “player” in the health-care market. They became managed-care insurers of one form or the other and organise and closely supervise the behaviour of patients and providers. The period of stable health-care costs in the US during the 1990s is generally seen to be the result of more active health insurers.

Incentives for patients to behave cost-consciously have been intensified by higher co-payments. This instrument has been used in practically all countries, but the levels of co-payment still differ substantially. Payments to providers have changed from a fee-for-service to a fee-per-patient, per-day or per-admission basis. Specifically, the UK went far in allowing the primary care physicians to act self-responsibly and competitively by making them “fundholders” on behalf of the patients.

After 2000 health-care costs started to increase again in nearly all countries considered here. Thus, reform pressure continues – all the more as populations are progressively ageing. What will be the nature of the next wave of reforms to come?

Outside the large industrialised countries, in Singapore, an innovative model of a health-care system has been created (Schreyögg and Kin 2004). It is a (partly) funded system with obligatory private medical savings accounts to which regular contributions of an equal percentage of income must be made. The accumulated funds can be used for health treatments of higher costs than occur with everyday sicknesses. Such everyday sicknesses must be paid for by the patient out-of-pocket. For the special case of “catastrophic” costs and in case the accounts are not yet filled or recently used for another treatment, the government steps in. Equality of access to high-level medicine is guaranteed. Equality of burden-sharing is achieved by differentiated government subsidies for hospital treatment. The differentiated subsidies are linked to the hospital bed class. A low-income patient who accumulates funds in his accounts only slowly, usually chooses a low hospital bed class in which accommodation and treatment is heavily subsidised, whereas a high-income patient who accumulates funds quickly chooses a higher bed class for which there are lower or no government subsidies. Thus, tendentially, the personal medical savings accounts are more slowly filled and more slowly emptied in the case of low income earners

and more quickly filled and more quickly emptied for high income earners. A specifically intelligent – namely, resource saving – feature of the Singapore health system is the possibility to use accumulated funds, above a minimum ceiling, for certain other private purposes, bequests included.

In a small health-care sub-market in the US there is some experimentation with private medical savings accounts, which is also the main content of the recent and ongoing debate about “privatisation of health care” in the US. But also in China (PR) and South Africa, elements of a private funded system have been introduced. Medical savings accounts are likely to have an increasing reform appeal also in other countries when cost pressure continues to mount.

R. O.

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RECENT ENTRIES TO THE DICE DATABASE

In the fourth quarter of 2004, the DICE Database (www.cesifo.de/DICE) received about 110 new entries, which consisted partly of updates of existing entries and partly of new topics. Some topics are mentioned below:

- Gross Domestic Product and its Components
- Health Outcomes
- Health Resources
- Employment Protection
- Taxation of Labour
- Unemployment Benefit Schemes
- Students Performance Test: TIMSS
- Enterprise Entry Regulations
- Family Benefits

EUROPEAN INDUSTRIAL RELATIONS OBSERVATORY (EIRO)

The European Industrial Relations Observatory (EIRO) is a monitoring instrument offering news and analysis on European industrial relations. A project of the European Foundation for the Improvement of Living and Working Conditions, EIRO began its operations in 1997. Its aim is to collect, analyse and disseminate high-quality and up-to-date information on key developments in industrial relations in Europe. It aims primarily to serve the needs of organisations and EU institutions.

EIRO is based on a network of leading research institutes in the EU, candidate countries and Norway. There is also a centre covering developments at the EU level. EIRO also co-operates with other international institutions, such as the International Labour Organisation. In order to complement the coverage of industrial relations developments in Europe, EIRO has been collaborating since 2001 with experts in Japan and the US on the production of an annual comparative overview of industrial relations.

CESIFO VENICE SUMMER INSTITUTE 2005

CESifo's sixth Summer Institute will be held from 18 to 23 July 2005. The conference venue is Venice

International University on San Servolo, a tiny island across the water from San Marco in the bay of Venice.

Six workshops will focus on:

- *Economics and Psychology*
Organiser: Bruno S. Frey and Alois Stutzer
Keynote speakers: Colin Camerer (CalTech), Simon Gächter (University St. Gallen), Bruno S. Frey and Alois Stutzer (Zürich University).
- *Recent Developments in International Trade: Globalization and the Multinational Enterprise*
Organiser: Steven Brakman and Harry Garretsen
Keynote speakers: Alan Deardorff (University of Michigan), Peter Neary (University College Dublin), Jim Markusen (University of Colorado at Boulder), Joseph Francois (Erasmus University, Rotterdam).
- *Political Economy and Development*
Organiser: Mark Gradstein and Kai Konrad
Keynote speakers: Timothy Besley (LSE), William Easterly (NYU), Michael Kremer (Harvard).
- *Global Economic Negotiations*
Organiser: John Whalley
Keynote speakers: John Whalley (University Western Ontario) and David Greenaway (University of Nottingham).
- *Health Economics*
Organiser: Efraim Sadka and Achim Wambach
Keynote speakers: Paul Gertler (Berkeley), Pierre-Yves Goeffard (Delta).
- *The Design of Climate Policy*
Organiser: Roger Guesnerie and Henry Tulkens
Keynote speakers: David Bradford (Princeton University), Roger Guesnerie (Collège de France), William Pizer (Resources for the Future), Henry Tulkens (Université Catholique de Louvain).

CONFERENCES

Industrial Organisation

4-5 March, 2005, in Munich.

The purpose of this CESifo conference is to bring together CESifo Network members to present and discuss their ongoing research. Papers deal with

topics within the domain of the functioning and regulation of markets.

Scientific organiser: Christian Gollier.

IEA 14th World Congress 2005 in Morocco

The 14th world congress of the International Economic Association is scheduled to take place in Morocco from 29 August to 2 September 2005. The programme will focus on two main themes:

- (1) New trends in economics
- (1) Understanding the great changes in the world.

The area of theme (1) includes, among others, issues such as:

- New results in behavioural economics
- New institutional economics
- Pressure for and constraints on publication.

The area of theme (2) includes, among others, issues such as:

- Globalisation and new development in trade theory
- Economic development
- The first fifteen years of post socialist transition: Honesty and trust.

EEA Congress 2005

The 20th Annual Congress of the European Economic Association will take place in Amsterdam from 24 to 27 August 2005.



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DICE
Database for Institutional Comparisons in Europe
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The database DICE was created to stimulate the political and academic discussion on institutional and economic policy reforms. For this purpose, DICE provides country-comparative information on institutions, regulations and the conduct of economic policy.

To date, the following main topics are covered: Labour Market, Public Finances, Social Policy, Pensions, Health, Business Environment, Capital Market and Education. Information about Basic Macro Indicators is added for the convenience of the user.

The information provided comes mainly in the form of tables – with countries as the first column –, but DICE contains also several graphs and short reports. In most tables all 25 EU and some important non-EU countries are covered.

DICE consists mainly of information which is – in principle – also available elsewhere. But we think that the access we provide is very convenient for the user, the presentation is systematic and the main focus is truly on institutions, regulations and economic policy conduct. However, some tables are based on empirical institutional research by ifo and CESifo colleagues as well as the DICE staff.

DICE is a free access database.

Critical remarks and recommendations are always welcome.
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