

# EDUCATION AND WAGE INEQUALITY IN EUROPE

This is the Final Briefing Paper of the project that started in November 2002

## Context of the Research

The EU and most national governments consider educational expansion as an important policy tool for reversing or slowing the rise in inequality observed in a growing number of European countries. At the same time, emerging evidence reveals that aggregate wage inequality is due not only to differences in educational attainment but also to disparities within educational groups. The aim of this project has been to deepen the understanding of the interplay between educational expansion and wage inequality in Europe.

To further this aim, in-depth empirical analysis has been carried out on the relationship between education and wage inequality in Europe over the past few decades, up to the new millennium, with a focus on wage inequality not only between groups but also within groups (stratified according to education, gender, age, and sector). Additionally, project research has explored major policy-relevant explanations for these patterns and trends, with the aim of deriving practical implications for economic and social policy.

## Key Findings

### The structure of and inter-temporal changes in wage inequality in Europe

1. The *level* of earnings inequality varies considerably across EU countries.
2. In most countries the bulk of inequality emanates from differences *within* (rather than between) narrowly defined groups of workers.
3. Very substantial cross-country differences exist in the *structure* of earnings inequality.
4. The distribution of *education* is usually the factor most closely associated with earnings inequality (rather than age, sex or sector of employment).
5. In most countries the observed *rise* in earnings inequality was driven primarily by rises in inequality within (rather than between) groups of workers.

### Economic effects of demographic and educational change

6. Demographic changes – the so-called “baby bust” – as well as long-term changes in the skill structure of the labour force – the “educational boom” – have, *ceteris paribus*, played a significant role in improving overall employment performance and also in alleviating youth unemployment in Europe.

7. These demographic and educational shifts have had qualitatively *different* effects on young and adult workers. Previous studies have not provided a full picture of this phenomenon, because no distinction has been made between the two types of structural change.
8. Education matters. The long-term increase in educational achievement has reduced, *ceteris paribus*, the unemployment rate of the *more educated*. This finding, which stands in sharp contrast to the standard textbook supply–demand model, holds true also when skill-biased technological change and the endogeneity of educational choices are taken into account.
9. The overall effect of cohort size on European *earnings* is negative but rather modest. It varies, however, by education and age. Moreover, it is stronger in the Southern European countries than in Continental and Northern Europe.

### **The dynamics of changing wage distributions in Europe**

10. Investments in education have continued to provide a *significant private return* to individuals in the European labour market. Despite a strong increase in the relative proportion of high-educated workers, the wage premium has remained remarkably stable.
11. Educational investments are, however, associated with a significant amount of *wage risk*, which arises from the fact that individuals who otherwise perform better in working life tend to reap a higher return from their investments in education.

### **The role of labour market institutions and flexibility arrangements**

12. *Effects on employment:* Labour market institutions have contributed to the changing fortunes of the least protected workers and have influenced unemployment rates in various ways. In particular, unemployment benefits raise unemployment, while bargaining coordination and employment protection reduce it.
13. *Effects on wages:* Labour market institutions affect the wage distribution in various ways. Bargaining coordination tends to compress wages especially from the top of the wage distribution. Employment protection tends to compress wages especially from the bottom of the wage distribution. The relationship between union membership and wage compression remains ambiguous, although within-country evidence suggests that union membership has a wage compressing effect. Institutional factors reduce wage inequality in the covered sector, but increase it in the uncovered and less protected sector. These opposite effects are likely to be stronger in the Southern European economies, where the high institutional protection granted to the covered sector is offset by the conspicuous role played by the unprotected sectors.

14. Education-intensive companies have fewer unionised employees, are less likely to be covered by collective agreements, and, if they are, these agreements tend more often to be determined at the local level. Indeed, the use of individual performance based pay systems is more frequent in these companies. They are likely to be more innovative, to undertake organisational changes, to invest more in on-the-job training, and to pay higher wages. All this evidence in support of the productivity-enhancing effects of education explains, at least partly, why wage dispersion is higher among the higher educated.

### **Does Europe face an over-education problem?**

15. 'Over-education' – in the sense of working in jobs requiring less education than one has – is widespread in most European countries. Exactly how much over-education there is depends crucially on the precise definition that is used in the data which is examined. There is no evidence that the rate of over-education has been rising over the last 10 years in European countries.

16. A challenging issue is how to reconcile the *presence* of over-education with rapidly rising educational participation and the existence of substantial private returns to educational investment. A major reason for the co-existence of these contradictory phenomena is that much of the over-education is explained by occupational structure and labour force mobility, that is, concerns dynamic adjustment processes. Many individuals are moving from one geographical location to another and will not obtain jobs commensurate with their qualifications in the short term. Also, there are new recruits to the labour market who take some time to find a suitable job.

17. Looking across countries there is some limited evidence that over-education is higher when the educational participation rate rises and when unemployment is higher. In addition the rate of return to education is lower when over-education is higher. At the level of the individual the effect of over-education is to reduce earnings by 2 to 18 % depending on circumstances. These findings suggest that there is a genuine policy issue with respect to the level of educational provision.

### **Gender and labour market inequality**

18. Labour market prospects for men and women in European countries remain unequal. There are large differences across Europe in the size of the gender *pay gap*. In general this pay gap has been declining in most countries but at a differential rate in each.

19. The project examined the extent to which the gender pay gap can be explained by: gender differences in educational choices, occupational segregation and behavioural differences in the participation decision across countries. Each of these factors was found to be important in the explanation of the gender pay gap.

## School quality and educational skills

20. Student characteristics and family background are the most important determinants of student achievement, while the effects of school quality, as proxied by, for example, school resources, stand out as surprisingly weak.
21. The variation in educational skills across European countries seems to be explained more by differences in institutions and the process of skill formation than by differences in resources and student characteristics.
22. However, disadvantaged students do benefit from more resources, especially during earlier grades. This underlines the importance of distinguishing between students of different characteristics.

## Market failures and the under-provision of training

23. Workplace training policies can be justified both on equity and efficiency grounds. Equity refers to the distribution of training, while inefficiency depicts under-provision of training in the absence of policy intervention. Designing policies aimed at reducing under-provision of training requires that the *causes* of under-provision are correctly identified.
24. Training is *not provided equally*: the young and better educated face a significantly higher probability of receiving employer-provided training, and training is more likely in the public sector and among large firms.
25. Companies *provide and pay* for training, both general and specific, which can be taken as evidence that labour markets are not perfectly competitive.
26. There is no clear evidence that training is lower than the *socially efficient* level. Without such evidence, it is difficult to justify policy intervention which aims at restoring efficiency. By investing in training, firms can reduce worker *turnover* and attenuate the reasons for under-provision. The empirical evidence on this, however, is not uncontroversial.
27. Even in the absence of clear evidence of under-provision, policy intervention can be justified because of *equity* reasons.

## Key Policy Implications

1. Taking into account the heterogeneity of European countries regarding trends in the level, structure and patterns of earnings inequality, it is rather unlikely that a given type of policy would have very similar effects across countries. Therefore, if – and this is a big “if” – the stated aim of policy is to reduce earnings inequality, different policies for different European countries are likely to be appropriate

2. Due to the changing age structure of the population, the burden of unemployment is increasingly shifting to adult workers, particularly women and the low skilled. Active labour market measures need to be targeted at the re-employment of these particular groups of displaced workers. Equally important is to guarantee the provision of both publicly and company provided education and training a more active role in this context.
3. When addressing the quest for greater labour market flexibility and a progressively weaker role for labour market institutions, a clear distinction should be made between “bad” labour market institutions (which distort the functioning of the labour market) and “good” labour market institutions (which are designed to correct market failures).
4. Labour market institutions tend to compress wages both from the top and the bottom of the wage distribution. This weakens the incentives of higher-educated employees to unionise. Accordingly, an increasingly better educated workforce will put pressure on European bargaining systems.
5. Policies aimed at increasing educational attainment can be expected to raise average earnings but also wage inequality due to the wage risk associated with educational investments. This wage risk may also affect the demand for education. All these aspects might require the development of new instruments to improve the equity and efficiency of educational funding.
6. The main policy question in relation to the over-education problem is to establish to what extent it represents a real waste of resources. It is clear that a large fraction of the labour force works in jobs they are overqualified for, which has a modest negative effect on their earnings potential. It is possible that these negative effects fall disproportionately on the disadvantaged in society. Despite these findings it is far from clear that governments should discourage private investment in education as short-term private returns to education are high and the long-term social return to education may remain high.
7. Countries should look for ways of further reducing the gender pay gap. There is more scope for promoting gender pay equality in some countries by the use of policies which encourage and facilitate: return to work after child rearing, free occupational and education choice. As women are free: to pursue more stable careers with better access to child care and fewer interruptions, to choose more flexible work hours and to have better access to educational and occupational choices, then the gender wage gap should fall. Better policies to promote these changes could be introduced in most EU-countries although some countries are much more equitable already.
8. Policies to improve the formation of educational skills should emphasise the provision of the right incentives to students and teachers by adjusting schooling institutions and by measuring achievement in a coordinated way.

9. Training opportunities are not equally distributed. Since human capital is an important source of income and job satisfaction, an equitable allocation would require some redistribution in favour of groups of individuals who are less likely to be trained. The key question here is whether economic policy should try to correct outcomes – differences in training – or to modify initial conditions which produce efficiently different outcomes, for instance differences in educational attainment.
10. Training policies are ubiquitous and are designed to affect either supply or demand, or both. Broadly speaking, supply policies can affect employer-provided training at the margin if they influence marginal benefits and marginal costs. Among training policies that could be classified as targeting marginal benefits are payback clauses and apprenticeship contracts. Levy/grant schemes, train or pay schemes, and tax deductions could be classified as policies targeting marginal costs. The evaluation of these policies, which cost money to the taxpayer, is still in its infancy, and in several European countries we know too little – at least compared to what we know about the impact of these policies in the USA.

## **Further Information**

The full title of the project is: "Education and wage inequality in Europe". The final report is due in November 2005.

An extensive number of final and interim thematic reports are available on the project web site at <http://www.etla.fi/edwin/>

## **Research Institutions**

The Research Institute of the Finnish Economy (ETLA), Finland  
Université Panthéon-Assas (Paris 2), Equipe de Recherche sur le Marchés,  
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Zentrum für Europäische Wirtschaftsforschung (ZEW), Germany  
Centre for Economic Research and Environmental Strategy (CERES), Greece  
Fondazione Eni Enrico Mattei (FEEM), Italy  
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