

AG 3 / WG3 “Investment in Human Capital”
Education, Training and Active Labour Market Policy

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This speech will address four topics:

- (1) macroeconomic effects of investment in education;
- (2) individual-level wage effects of investment in education;
- (3) effects of employer-provided training;
- (4) assessed effects of state-run training programmes.

1. MACROECONOMIC EFFECTS OF INVESTMENT IN EDUCATION

Public sector financing also of higher education has, over the years, been justified on several grounds relating to the society’s perceived social and economic benefits from such investment. A rough classification of these arguments would be: positive external effects, welfare gains, and technological progress. Needless to say, the ultimate goal is to boost productivity and growth. What can the literature tell us about these macroeconomic effects?

- **Positive external effects:** Investment in education is alleged to give rise to spillover benefits, for which reason it is in the society’s interest to provide individuals with incentives to invest in their education over and above what is optimal from their private point-of-view – the social return is taken to exceed the private return on education investment. Empirical support for the existence of such positive external effects is scarce and weak, however. Our knowledge is limited also about the social return on investment in education and its magnitude compared to the return on alternative investments.
- **Welfare gains:** The literature on the relationship between income distribution and growth has expanded enormously over the past decade. A common feature of both the theoretical and the empirical contributions in this field is that the findings are highly contradictory. Part of the studies reports that increased inequality has a positive, part states that it has a negative impact on economic growth. Moreover, the empirical findings are obtained from data on the performance of a broad group of countries at vastly different levels of economic development. It may, therefore, be questioned how relevant these world-wide findings are for the richer countries as a group and, in particular, for single industrialised countries with already quite equitably distributed incomes and wealth. – Education is seen as one of the key channels through which the distribution of incomes can affect growth. Although the literature provides a broad set of justifications for education subsidies, these theoretical approaches are ambiguous when it comes to the net effect, as there are also crucial counteracting factors in force. In addition, the findings derived from these approaches are

analytical rather than empirical in nature; that is, they are obtained by varying the underlying assumptions and the magnitude of the key parameters of the model. Furthermore, the theoretical models developed so far provide only a partial analysis of the redistributive effect of education subsidies. Accordingly it is impossible to evaluate in a comprehensive way the impact on income distribution and growth of changes in the pursued redistribution policies, including subsidisation of education.

- **Technological progress:** The attempts to capture the growth effect of improved labour quality (embodied knowledge) have a long tradition, starting from growth accounting and production functions. In recent years, this field of studies have moved also to the industry-level and all the way down to the firm and plant level. A common conclusion is that, on average, education does enhance productivity and growth. But little is still known about short-run vs. long-run effects; the channels through which education actually and mainly affects the technology-growth relationship; potential impact differences between levels and fields of education; etc. Moreover, the existing empirical evidence concerns to most parts only a limited number of countries, and mainly the USA.
- **All in all, the current state-of-the-art with respect to empirically assessed macroeconomic effects of investment in education is scattered, weak and/or highly contradictory. This is quite a paradoxical situation in view of the large amounts of money that governments invested annually in education, as well as the growing need of making the provision of education more efficient due to budget constraints.**

2. INDIVIDUAL-LEVEL WAGE EFFECTS OF INVESTMENT IN EDUCATION

Two main aspects deserve to be pointed to in this context:

- **Between-education-group wage inequality:** Estimates of the private average return to education have, over the years, been produced for a broad number of countries. Also European-wide comparative calculations are available, indicating a wide spread in returns between countries and no signs of a convergence across countries. Although returns can be expected to change only slowly over time, it is a clear drawback that the most recent cross-European evidence concerns the mid-90s. Moreover, the enlargement of the EU means that comparative data is totally missing for 10 EU countries. Another shortcoming is that we know virtually nothing about the reasons behind the different return levels and trends in Europe, not even whether they are primarily supply- or demand-led. The key question largely remains: **To what extent can between-education-group wage inequality be affected by public education policies in terms of expenditure and structure?**
- **Within-education-group wage inequality:** There is growing evidence of education-induced wage inequality reflecting changing within-education-group inequality rather than between-

education-group inequality. Not much is known about the dispersion of wages within educational groups; whether it increases or decreases with the educational level; and the policy-relevant explanations that potentially underlie this phenomenon. Accordingly, also here the key question is: **To what extent does public education policies in terms of expenditure and structure affect within-education-group wage inequality?**

- See the web sites: <http://www.etla.fi/PURE> and <http://www.etla.fi/edwin>

3. EFFECTS OF EMPLOYER-PROVIDED TRAINING

The effects of training provided and funded by the employer can be approached in two ways:

- From the **individual's point-of view**, whereby the main focus is on wage and career effects. The theoretical advances in this field have been slow. Generally speaking, the existing empirical evidence indicates that the wage effect is positive for off-the-job training, at least, and that the firm-specificity of the received training affects the turnover of the staff. The evidence is, however, still restricted to a rather limited number of countries; comparative cross-country analyses have only started to emerge thanks to Eurostat's *ECHP* data. The research questions are, however, "narrow" because, for the most part, the available information concerns merely (1) whether or not the individual has received *off-the-job* training during the past 12 months, and (2) for how many days on average. What about the impact of the length, content and frequency of the training spells? What about the effect of other types of training provided by the employer? **Despite all emphasis on life-long learning, our knowledge about its economic value for the individual is scarce.**
- From the **company's point-of-view**, whereby the ultimate focus is on productivity and profitability effects. The empirical evidence on company-level effects is even more scarce than that on individual-level effects owing to lack of proper data. The available evidence is country-specific, mostly based on case studies or rather small cross-section data sets. The case studies often provide detailed results but only for a few companies, whereas the cross-section data produce generalizable evidence but mostly at a general level. Furthermore, increased use of Eurostat's *Continuous Vocational Training Surveys* will be able to answer only part of the following question: Whom do the companies train and for which reasons and purposes? Which companies train, and do these training activities show up in their performance relative to companies who train less or not at all? A concrete example: despite our reliance on the service sector as the main job creator and our concern about the low skilled, especially those occupying service-sector jobs, we know virtually nothing about the training of the low-skilled in service-sector companies! See <http://www.uva-aias.net/lower.asp?lang=en>

4. ASSESSED EFFECTS OF STATE-RUN TRAINING PROGRAMMES¹

Broadly speaking, the research on the effects of publicly subsidised training programmes has moved hand in hand with the research on the impact of other modes of training. This is hardly surprising, since the same econometric challenges show up irrespective of how the training is obtained: How are the trainees' wage and employment benefits to be evaluated compared with the non-trained? How are the benefits of the providers of training – be they companies or the public sector – to be evaluated against the costs caused by the training investment?

Government-run training schemes with the aim of alleviating especially youth unemployment have been introduced in many countries over the years. There is an obvious need to evaluate the effect of these not only on the wages, employment, and employability of the trainees, but also the effectiveness of the training programmes in order to justify government involvement and expenditure.

In brief, our current knowledge seems to suggest that

- the employment and wage effects of participation in government-run training programmes are negligible or even negative. Apart from data and method problems these findings may also be explained by most evaluations having focused on short- to medium-term effects. Positive individual and societal effects show up mainly for women and the disadvantaged.
- government-run training programmes give rise to negative labour market externalities which affect the trainees both directly and indirectly, although the existence of such effects is difficult to assess empirically. Their net redistributive effect on income inequality is found to be minimal.
- all in all, the limited attempts made so far to evaluate government-run training programmes have found the economic and social consequences to be negligible or even negative rather than positive. This outcome should, however, be contrasted against the fact that such evaluations are extremely complex and that the critiques of the evaluations actually undertaken are mostly severe.

5. OVERALL CONCLUSION

The literature of today can, at most, provide us with an outstandingly scattered picture of the economic effects of investments in human capital at the individual level and even more so at the company and whole-economy levels. It seems fair to conclude that very few definite conclusions – not to mention policy-oriented conclusions – can be drawn based on the available empirical evidence.

¹ These comments are largely based on a paper in progress by Peter Dolton, "The Economic Assessment of Training Schemes".