

Human Capital and Economic Growth – Summary of the 35th Economics Conference of the Oesterreichische Nationalbank

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The 35th Economics Conference of the Oesterreichische Nationalbank, which took place on May 21 and 22, 2007, focused on the relationship between human capital and economic development as well as on the question of whether education policy can have a positive impact on this relationship. Good education systems can help step up slow productivity growth in Europe and help countries adjust to structural changes caused by globalization. The 35th Economics Conference followed up on the previous year's conference, which had explored globalization and the opportunities of economic policy in providing answers to future challenges. At the European level, the biggest need for adjustment was identified in the tertiary education sector, whereas Austria was judged to need reforms of its secondary education system as well. The speakers and panelists of the event included high-level experts of central banks and international organizations, as well as scientists, entrepreneurs, and politicians.

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Education Policy – A Panacea for Economic Problems?

In his opening speech, *Klaus Liebscher*, Governor of the Oesterreichische Nationalbank (OeNB), underlined that education policy could play a crucial role in overcoming two current economic challenges: First, since 1995, productivity growth in most EU economies – with a few exceptions – has not kept pace with that in the U.S. economy, which still operates at a higher productivity level. According to recent empirical studies, Europe's inability to close this gap, to secure economic prosperity and to deal with population aging can partly be attributed to the different education systems in Europe and in the U.S.A. and particularly to the fact that Europeans participate less in tertiary education.

Second, in the short- and medium-term, Europe will have to make structural adjustments of its economy to cope with increasing competition from the rapidly growing developing countries – even if globalization is

expected to have positive effects in the long run. In this context, Liebscher stressed that these adjustments called for a commitment to lifelong learning rather than for a protection of actually threatened jobs, since such an approach would enable people to bridge the gap between periods of unemployment and employment. Education increases the mobility of the workforce within a labor market and is therefore essential for the functioning of a monetary union in which asymmetric economic shocks can no longer be absorbed by adapting the exchange rate relations but have to be offset by flexible factors of production. For these reasons education policy played a crucial role, although it could not be seen as a panacea for all economic problems, said Liebscher. The EU still needs competitive product markets, flexible labor markets and sound public finances in order to meet the challenges ahead. Liebscher concluded that a stronger focus on the economic aspects of education policy should not

lead to a neglect of other educational aspects, such as social integration and personal and immaterial benefits.

In his address, Austrian Federal Chancellor *Alfred Gusenbauer* underlined that European countries including Austria had to embrace an innovative approach rather than a simple catching-up strategy if they were to remain among the wealthiest countries of the world. Therefore, education – particularly tertiary education – is a vital element of the Austrian government's economic strategy, along with increased investment in research and infrastructure. Yet, expanding top-level research and education opportunities in the tertiary sector should not be done at the expense of a sound education and training system available for everybody – because top results require a firm base and vice versa. Moreover, it is important to increase the number of women in research and science. According to the chancellor, Austria was failing to fully tap the potential of its talents. What current education policy lacked was the balance between equality and efficiency. In his conclusion, *Gusenbauer* stressed that investment in education showed a positive impact on growth only in the long run and that its success had to be measured by looking at both the economic parameters and the degree of participation in the knowledge-based society.

Joaquín Almunia, EU Commissioner for Economic and Monetary Affairs, encouraged EU Member States to use their human resources more efficiently and effectively to speed up the structural changes of their economies toward more high-value added activities. This change should not be achieved by merely increasing funds but also by raising the efficiency of public spending on

education. As an example, *Almunia* cited Austria, Finland, and Portugal: Although the three countries spend roughly the same amount on education (around 5.6% of their GDP), the results they achieve in the OECD's Programme for International Student Assessment (PISA) diverge widely.

A better use of human resources not only facilitates structural adjustment, it also increases employment rates. In 2005, for example, only 46% of the low-skilled workforce, but 69% of the medium-skilled and 83% of the high-skilled workforce had a job. The EU Commissioner stressed that reforms of the education system needed to be embedded in a comprehensive reform strategy built on the renewed Lisbon Strategy on Growth and Jobs. Simultaneous adjustments of product, labor and capital markets as well as of national innovation systems would maximize the effectiveness of education reforms, concluded *Almunia*.

A Better Education Means Better Incomes and Innovation

Lucas D. Papademos, Vice-President of the ECB, explored the connection between schooling and economic growth and between education and the development of financial markets. He pointed out that private returns on investment in education ranged between roughly 6.5% and 9% and that social returns were possibly even higher due to positive externalities. An additional year of formal schooling is associated with an increase in wages of 7.5% on average over the entire working life. Innovative methodological approaches (such as studies of twins who followed different education and life paths) provide ample evidence of this causality. Yet,

cross-country variation in growth rates can be attributed not just to the length of formal education but also to its quality. In fact, differences in the quality of education explain a significantly larger proportion of the cross-country variation in growth rates than the length of schooling.

Education influences growth not only directly but also indirectly, as education and innovation interact. Higher education levels foster innovation and the adoption of technological advances. Particularly the most technologically advanced countries, like the euro area countries, benefit from better education, which fuels growth in new sectors such as pharmaceuticals and electronics. By and large, the impact of technological progress on job opportunities varies according to the education level: While progress benefits educated and high-skilled labor, low-skilled labor increasingly comes under pressure. Investment in information and communication technologies (ICT), for example, leads to an increase in the number of high-skilled jobs while reducing low-skilled work. Due to this complementarity, it is crucial to invest in both human and physical capital.

Papademos then discussed the special aspects of economic and financial education. Although indispensable when to fully utilize the innovations of developed financial markets, economic and financial literacy are frequently rudimentary even in the most advanced countries. Well-functioning and liquid financial markets foster growth; consequently, financial literacy also plays a vital role in promoting growth. Moreover, such markets support the transmission of monetary policy throughout a monetary union and improve the capacity to absorb

asymmetric shocks. Thus, education is indispensable for the functioning of a monetary union, concluded Papademos.

Emmanuel Jimenez from the World Bank presented the World Development Report 2007, according to which favorable demographic conditions will accelerate growth in many developing countries in the coming years. With the number of young people peaking in these countries, their working age population has never been bigger than at present; fertility rates, however, have already begun to decline. Moreover, this huge labor force has relatively few children and elderly to support. The window of falling dependency rates can remain open up to 40 years; it is essential to invest in young people's education and training during this period. Jimenez then discussed several measures aimed at promoting effective education policies in developing countries. It is particularly important to improve the quality of primary education and to increase participation in secondary education while at the same time promoting labor-market oriented education and training.

Relevant information together with positive and negative incentives (e.g. in the form of higher taxes on tobacco or alcohol) can help young people to take the right decisions in their lives, including completing their formal schooling. Providing young people with information is particularly important, as it makes them aware of the economic value of education and of the fact that better education translates into higher income. Surveys show that young people regularly underestimate the income differential caused by better qualification. Second-chance programs should be implemented to help dropouts

return to formal schooling as soon as possible; because the older the drop-outs, the more difficult it is to reintegrate them into the education system.

Underestimated Impact of Human Capital on Growth

The first session, chaired by *Wolfgang Duchatczek*, Vice Governor of the OeNB, focused on the connection between human capital and economic growth. Older empirical cross-sectional studies underpin the hypothesis that the formation of human capital benefits economic growth. However, more recent research papers, combining time series with cross-sectional analyses, suggest at best just a weak link between human capital and economic growth.

Against this background, *Angel de la Fuente*, Vice Director of the Instituto de Análisis Económico, CSIC, Barcelona, argued that the disappointing empirical results could mainly be attributed to the poor quality of the underlying data, as even the best data sets contain implausible jumps as well as unrealistic time series and cross-sectional observations. Consequently, measurement errors in the data result in a systematic underestimation of the positive correlation between human capital and growth. After adjusting for this bias, the empirical evidence again shows a more distinct correlation between human capital and economic growth.

The European Tertiary Education System – Much Reform Needed

In the panel discussion *Mario Cervantes*, Senior Economist at the OECD, *Leslie Lipschitz*, Director of the IMF Institute, *Susanne Lohmann*, Professor at the University of California, Rick van

der Ploeg, Professor at the European University Institute in Florence, and *Georg Winckler*, President of the European University Association, discussed whether European education, skills and know-how were heading in the right direction.

Cervantes drew attention to the heterogeneous situation in Europe, where, by and large, smaller countries did better on average than bigger ones. In order to close the currently existing gap between the European and the U.S. education systems, Europe will have to step up its investments in human capital.

Lipschitz stressed how important it was to make economic knowledge available to people from developing countries. In this context, he appreciated the significance of the Joint Vienna Institute in providing economic education and training for participants from Central, Eastern and Southeastern Europe (CESEE).

In her statement, *Lohmann* emphasized the role of the universities in providing not only economic and technological know-how but also humanistic knowledge.

Van der Ploeg was rather critical of the current European tertiary education system. Despite the relatively good quality of European universities on average, they do not hold top positions in international rankings because they lack competition and suffer from intransparency, excessive red tape and a lack of funding, particularly compared to the U.S.A. Progress in this area hinges on a more important role for private funding with flexible and incentive-driven financial contributions.

In this context, *Winckler* pointed out that compared to the U.S.A. the returns on higher education were lower in Europe, which in turn

limited the scope for private funding. As an alternative, he proposed to further develop funding schemes for university education and research at a European level.

Financial Education Protects Consumers and Supports the Efficiency of Financial Markets

“Human Capital and Economic Development” was the focus of the second session chaired by *Josef Christl*, OeNB Executive Director. In his introductory remarks, he emphasized that economic and financial education contributed to a more efficient allocation of resources and a better understanding of monetary policy decisions. Christl drew attention to a new OeNB project on financial literacy that seeks to complement the OeNB’s current information material on economic and financial issues.

Jeanne M. Hogarth, Manager of the Consumer Education and Research Section of the Federal Reserve Board, talked about the Federal Reserve System’s role in providing basic economic and financial education. The Federal Reserve System engages in financial education for the following reasons: market efficiency, consumer protection, increased complexity of financial products and services, fast technological changes and demographic trends toward an aging society. Its activities include the provision of information on financial products and services, cooperation with other educational institutions and the support of relevant research projects and conferences. Hogarth stressed that educational programs for students and adults are very successful. In addition, she also underlined how important it was to take a neutral position on economic and financial education to prevent bias.

Austrian Education System Needs to Adjust to New Challenges

The last session of the 35th Economics Conference was a panel discussion on Austria’s economic policy with particular focus on education policy challenges.

Claudia Schmied, Austrian Federal Minister for Education, Arts and Culture, stressed that education was a key concern of the Austrian government in the current legislative session. The government’s plans include both higher investments and more qualitative measures. As reforms of the education system require concerted national efforts, Schmied envisaged initiating a broad public discussion. In this context, she welcomed the social partners’ educational policy papers, such as the “School 2020” concept of the Federation of Austrian Industry. She underlined that it was important to use an innovative and creative approach to education, to encourage good performance while at the same time showing solidarity with the disadvantaged.

As one of the concrete measures currently being implemented in Austria, Schmied mentioned the reduction of student numbers per class as of September 2007. Given the large number (more than 5,500) of school locations in Austria, this constitutes quite a big logistical problem. Other government measures include improving day care arrangements and teacher training programs as well as defining three or four test regions to implement a new comprehensive school model starting with the year 2008–2009. Finally, the organizational structure of the school system would need to be revised, with the distribution of competences among federal, regional and local authorities

reflecting their respective revenue and expenditure responsibilities.

According to *Günter Haider*, Head of the Project Center for Comparative Education Research Salzburg and Austrian Project Manager of the Programme for International Student Assessment (PISA), the main challenge for educational reform in Austria was what he referred to as the “long-overdue paradigm shift” in education governance. The Austrian education system – which is currently still hierarchical, centralized and bureaucratic, relies heavily on input factors and concentrates on preserving the existing structures – should be transformed into a more decentralized, autonomous and accountable system. Haider explained that the current governance structures of the Austrian education system dated back to the 19th century. As a consequence of Austria’s severe defeat against Prussia at the Battle of Königgrätz (1866), which was to some degree attributable to the large number of illiterate Austrian soldiers, schools were made part of the Austrian Empire’s rigid bureaucratic system, guaranteeing the quick establishment of a school infrastructure. At the time, this system was a role model for the whole of Europe. Problems did not become apparent until later: Administrative actions mainly based on rules and regulations prevented flexible adjustment to new conditions. As quality control was the duty of the legal experts at the ministry for education, the main concern was to ensure compliance with all rules and regulations and to manage the system by focusing on input rather than on output. As these shortcomings of the Austrian education system have now been identified, the following actions are necessary:

First, national education standards have to be introduced to make possible an objective assessment of the knowledge and skills acquired by students. Currently, standards are not harmonized, so teachers set their own standards and adjust them if the pressure increases. At the moment, different standards are an issue for Viennese children who are about to finish primary school: The grades in their school reports have a serious impact on their further educational careers, as they determine whether or not these pupils are admitted to secondary academic school or whether they have to attend lower secondary school. To provide objective information at all levels, a national education report is to be drafted and a federal institute for education to be set up by 2008. Moreover, local and regional schools should be enabled to take their own staffing and budgeting decisions, and the quality of their internal processes should be made more transparent. As an example, Haider referred to the current handling of school inspections in Austria, which was not really ideal, as it was common practice that school inspectors – often former staff representatives – announced their visits months in advance.

Christoph Badelt, Rector of the Vienna University of Economics and Business Administration and President of the Austrian Rectors’ Conference, underlined the positive effects of the Austrian university reform in 2002. The broad range of institutions in the tertiary education sector has, however, also created new problems: For example, the legal framework for technical colleges, public and private universities, etc. is not uniform. Thus, a comprehensive concept for the entire sector is needed. Accord-

ing to Badelt, the main challenges for Austrian universities included the definition of service level agreements, which constitute the basis for developing true competition among universities, and the access to tertiary education. Problematic issues within Europe are doctoral studies, the access of bachelor's degree holders to the labor market and the unclear signals with regard to top research at public universities. Then Badelt discussed the question of university access in Austria in greater detail (the Austrian Rectors' Conference has published a comprehensive study on the issue). He criticized that unlimited access to the universities was incompatible with their limited resources. Currently, 50% of the Austrian students are enrolled on courses with unfavorable student-teacher ratios, 30% with extremely unfavorable ratios. Badelt also attributed the relatively low number of Austrians participating in tertiary education to the shortcomings of the country's secondary education system, and in particular to its inherent social barriers.

Currently, only 37% of the Austrians leaving school in any one year continue with tertiary education and just 20% of them graduate – this is far below the OECD average of 53% beginners and 35% graduates. In the Global Higher Education Ranking, in which the accessibility to tertiary education of 13 countries¹ was studied, Austria ranks last.

Badelt called for a regulation of university access similarly to that already in place for technical colleges

as well as for the introduction of individually adapted selection schemes for certain courses, but most importantly for master and doctoral studies. As a result of the Bologna Process, which aims at harmonizing and restructuring the European higher education sector, anyone holding a European bachelor's degree could choose to attend a master's course anywhere in the EU. Given that most European universities already have selection systems in place, Austria might end up with just the second-rate students. Badelt concluded his presentation by calling for an active education strategy aimed at fully exploiting the pool of high potential in Austria – such a strategy would have to comprise primary and secondary schools.

Veit Sorger, President of the Federation of Austrian Industry, favored big and radical reforms rather than a piecemeal approach. Although the Austrian education system ranks in the middle range of most international comparative studies, it does not stand out in any particular area. Yet, this is exactly what Austria should aspire to. Therefore, the Federation of Austrian Industry drafted the strategy paper “School 2020” in which it calls for a compulsory and state-funded preschool year from the age of 5, and for one standardized secondary school type for all children aged 10 to 14 that at the same time allows for performance-linked differentiation. According to this paper, schools should be granted real autonomy and school managers should be responsible for their own staff and resources.

¹ Austria, Australia, Belgium, Canada, Finland, France, Germany, Ireland, Italy, the Netherlands, Sweden, U.K, U.S.A.

Prospective teachers should have to pass obligatory selection and ability tests; certified teachers should have to attend continuing professional development programs, they should get performance-linked salaries and a new employment law. In addition, the administration should be reduced to only three decision-making levels (federal, regional and local). Finally, education standards have to be harmonized and independent quality assurance mechanisms introduced.

Herbert Tumpel, President of the Austrian Chamber of Labor, focused on four problem areas of the Austrian education system. First, around 17% of the young people aged between 20 and 24 years have not progressed beyond compulsory schooling. At the same time, the number of primary and secondary students with above-average performance is below the European average. For this reason, the Chamber of Labor calls for the introducing of a compulsory pre-school year.

Second, the vocational or technical schools select too strictly and have high drop-out rates. Moreover, young people often get the wrong vocational training. Currently, vocational training programs do not really meet the requirements of the labor market, as rigid structures preserve agricultural, textile and manufacturing schools, while at the same time making it difficult to switch between education programs for health care and social services and initial training within the formal school system. According to the PISA study, Austrians find mathematics and natural sciences classes demotivating, and the study cites them as the least satisfied students in these fields. Tumpel called for the implementation of a govern-

ment program aimed at guaranteeing education and training opportunities for everybody up to the age of 18.

Third, Austrian university courses are characterized by their long duration and their high dropout rates. The latter can partly be attributed to difficulty of studying and working at the same time. Austria has fallen farther behind in tertiary education participation in recent years: While the average percentage of university graduates per year rose from 27% to 35% in OECD countries, it increased only from 16% to 20% in Austria. This is why the Austrian Chamber of Labor calls for reforms to give students a better work-study balance.

Fourth, in terms of continuing professional development, Austria lies far behind the leading European countries. While Austrian employees receive only about 422 hours of training, Danish employees can expect some 934 hours in their working life. In most cases, continuing professional development is funded privately or by the company, with only 2.3% of Austria's total public spending on education going into this sector. It should also become possible for Austrians to complete their formal education free of charge at some later stage – in other countries this has been common practice for decades. Tumpel concluded his presentation by calling for the implementation of a uniform education strategy with concrete targets, such as halving the number of young people without positively completed compulsory schooling to 2% of the students of any one year, increasing the share of secondary school graduates to 50% and the share of university graduates to the OECD average, raising the number of women science and technology

graduates, and doubling the number of people participating in continuing professional development.

**Summary:
Europe and Austria Have
to Exploit Their Human
Resources Better**

In summing up the 35th Economics Conference, *Josef Christl*, OeNB Executive Director, underlined that enhanced human capital and improved education systems would yield two benefits – individual job opportunities, and overall economic and productivity growth. Given the still rather moderate European productivity growth and the euro area labor pool, both job opportunities and growth remain the prime economic policy goals. But in demographically favorable periods, human capital also constitutes a key variable for developing countries.

Currently, neither Europe nor Austria are fully exploiting their human resources, which has an impact not only on employment, productivity, growth, wages and salaries,

but also on the smooth functioning of the monetary union. A better educated labor force tends to be more mobile and can thus contribute more to alleviating the effects of asymmetric shocks. At the same time, higher potential growth allows for faster economic growth without inducing inflationary pressure. At the European level, the tertiary education sector seems to be most in need of reform, whereas Austria might additionally have to adjust its secondary education system.

As a specific aspect of education, financial literacy plays a vital role for the efficiency of financial markets and consumer protection that cannot be underestimated.

However, by and large, education policy is not a panacea. Therefore, reforms of the education system have to be embedded in a more comprehensive strategy. Such a strategy would have to include the following elements: better public budgeting (e.g. more efficient education investment), flexible labor and product markets as well as liquid capital markets.