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The Skills Challenge for Europe – the Unfinished Agenda

Introduction

Good afternoon ladies and gentlemen, distinguished guests and speakers. I am very honoured to participate at this conference in Vienna and as such I should like to thank the Oesterreichische Nationalbank and the organisers. You are all probably very familiar with the work of the OECD, not least its annual economic reports and forecasts, but also its PISA (Programme for International Student Assessment) study, the country reviews of tertiary education as well as its work on science, technology and innovation policies.

As most organisations, the OECD has its share of departments and divisions with fancy acronyms and abbreviations. I work in the Science and Technology Policy Division, or rather the DSTI. Our focus is on science, technology and innovation analysis and policies. In this context, we work together with the Education Directorate (which houses PISA) and the Economics Directorate on issues related to research, innovation and human resources in science and technology.

The reason I am describing the internal organisation and workings of the OECD is that it is also very relevant for governments insofar as the development of human capital – our topic today – cuts across ministerial, judicial and departmental boundaries. And therefore analysis and policy making in this area needs to be better linked up to become more coherent, mutually reinforcing and therefore more effective.

Now what I have been asked to do today is to be a discussant, hence I have dispensed with the usual battery of OECD slides that few of you in the audience could read except those sitting in the front. Firstly, I should like to recall why human capital matters and where Europe stands today. Secondly, I will outline the challenges for Europe as seen from the Science and Technology (S&T) side of the OECD and thirdly I will discuss the policy responses that have been adopted that could provide lessons for others.

Why the Focus on Human Capital?

The OECD's 2005 *Going for Growth Study*. Over the past ten years only around half of OECD countries have made good progress towards converging on the living standards of the benchmark United States. The study found that growth of labour productivity accounts for at least half of GDP per-capita growth in OECD countries (if not more). Another driver of growth has been improvements in the quality of labour e.g. increased labour quality due to education. In the U.S.A., improvement in labour quality contributed to 0.17 percentage points to U.S. labour productivity growth in the 1990s.

The gap in per capita GDP that several EU Member States have relative to the U.S.A. is mainly accounted by low labour utilization – that is, less people working productively relative to the U.S. benchmark.

In other OECD countries the gap is more due to difference in labour productivity – lower output per hour worked accounts for most of the GDP per capita gap in Switzerland, Iceland, Japan and Australia to name a few. In

some Nordic countries (Denmark, Finland, Sweden) the gap is due equally to lower labour productivity and lower labour utilisation (reflecting low average hours worked per worker). As well, Information and Communication Technologies (ICT) and Research and Development (R&D) have contributed to multifactor productivity growth. Furthermore, skilled migration is another factor that contributes to increasing to the quality of human capital stock.

As you all know, policies in several areas can contribute to address

weakness in labour productivity or in labour utilisation. Competition and product market regulation can help boost labour productivity. Another area is of course human capital development, the subject of our conference today. Other areas also matter such as labour market policies, innovation policies, tax policies etc. But let us keep to human capital.

Human capital is developed through several channels, most importantly, formal educational training that allows individuals to continue to learn and to accumulate and diffuse knowledge through tacit or codified means throughout their active lives.

How is Europe performing? The answer is well, relatively, but it can do better. A few dynamic countries are doing rather well, but some of the larger economies are stagnating or even falling behind. Among the EU Member States with the largest expansion in tertiary education are: Austria, Belgium, Denmark, Finland, Iceland, Ireland, Spain, and Sweden. Outside the EU, the U.S.A., Canada, Japan and Switzerland have seen increases of more than 5 percentage points in the share of 25–64 year olds with tertiary qualifications since 1995. In contrast, major economies such as France, Italy and the United Kingdom have just held their own and Germany actually has fallen behind.

In East Asia, progress has been more striking. Korea ranks number 3 (after the U.S.A. and Canada) among the 30 OECD countries whose youth in the age range of 25–34 has the highest share of graduates with university degrees. Furthermore, Korea ranks first in the OECD with the ratio of 25–34 year olds who have competed upper secondary education at 97%! The experience of Korea shows that rising population and increased demand can coincide to generate higher levels of educational attainment.

But demand for education is not increasingly across, the board, some skills are more in demand than others. Science and technology skills carry a premium: employment of human resources for science and technology (HRST) grew twice as fast as overall employment in the last decade.). The number of researchers in OECD countries, a subset of HRST, grew from 5.8 researchers per 1,000 employees in 1995 to 6.9 per 1,000 in 2002. Demand for researchers is greater in Japan (10.4 researchers per 1,000 labour force) and the

United States (9.6 per 1,000) than in the EU-25 (5.8 per 1,000). Japan and Korea aiming at boosting researchers and graduate enrolments. The EU objective of increasing R&D to 3% of GDP would require another half million researchers. Although we can debate such forecasts, it is clear that technological change is increasing demand for S&T skills.

What Does the Future Hold?

The PISA 2003 study showed that 20% of the 15-year-olds in the EU performed at baseline or lower level in the PISA math assessment. Overall 15 year olds in large EU Member States and the U.S.A. only performed around or below the OECD average. In contrast, six East Asian economies that took part in PISA were among the top 10 performers. There has also been some evidence of a decline in upper secondary and in university enrolments in S&T in countries such as Denmark and Germany. Whether these declines are temporary or a sign of a longer term trend remains to be seen. But policy makers would be unwise to not take action.

What are the Skill Challenges for Europe?

– *Quality of Education / Research Infrastructure*. Europe must act to reduce the number of school leavers without qualifications, especially those from lower socio-economic backgrounds are at greater risk of dropping out. It must also address renewal of research infrastructure at laboratories. Part of the solution will come from tackling the issue of financing. The EU spends less on education per student at all levels, primary, secondary and tertiary. But we all know that more money does not necessarily mean better quality, it is however, an issue of concern especially at tertiary level where the U.S.A. spends about close to USD 20,000 while the EU spends less than USD 10,000. Yet there are very high private returns to tertiary education, for questions of equity and sustainability, public funding must work together with private funding to ensure that European universities can adapt to global challenges.

– Another challenge with regard to participation is *helping integrate immigrant populations* and ensuring education systems can respond to diverse student populations. This is a societal challenge when one considers that unemployment rates among immigrants in many countries are two to three times higher than those among nationals. More than a third of second-generation immigrant children in Austria, Belgium, Denmark, Germany, Norway and the United States, who have spent their entire schooling in the host country, perform below the baseline PISA benchmark for mathematics performance at which students begin to demonstrate the kind of skills that enable them to actively use mathematics. In all other OECD countries except Australia and Canada, at least 20% of second-generation immigrant children fall below this level.

Additional Skill Challenges Include:

- Ph.D. training and reform
- Improving links between education and the labour market, including at vocational level
- Mobility in education (e.g. recruitment systems, Ph.D. postdoc training) is as important as labour mobility
- Lifelong-learning and ageing populations. How to improve equity in life-long learning? OECD studies show those that benefit the most from lifelong learning are the better educated. How can access to lifelong learning be broadened?

Globalisation Challenges for Education

- Non-OECD countries such as China, Brazil, India, Russia and Thailand are becoming major producers of the world's supply of science and engineering (S&E) graduates
- Globalisation of R&D creates conditions for outsourcing of high-skilled jobs, including R&D employment
- Globalisation of higher education providers
- Growing competition for foreign talent – more players than before

Policy Responses

A main trend in OECD and other countries has been to address these challenges by helping improve the governance of higher education institutions. Key words here are autonomy and accountability. Some countries have also experimented with tuition and with performance-based research funding but these experiments need to be broadened across Europe.

- Supply-side measures:
  - Raising quality of teaching (U.K., U.S.A., Ireland)
  - Addressing declining interest in science among youth (U.K., France, Germany, Netherlands, Korea)
  - Increasing interest in scientific studies among students
  - Strengthening science teacher training (Sweden, Norway, U.S.A., U.K.)
  - Measures to reduce gender gap in schools and universities as a way to boost supply
- Demand-side measures:
  - Making researcher employment more flexible (e.g. reforms in Germany and the U.K.)
  - Scaling up Major Research Infrastructure (Ireland)
  - Improving funding for research centres of excellence with the goal of attracting return migration and foreign talent (Ireland, U.K., Spain)
- Mobility measures for students:
  - The Bologna Process to foster intra-EU mobility
  - Improving the provision of information about work/study opportunities (Australia, Canada, U.K.)
  - Facilitate access to labour market for foreign students (U.K., U.S.A.)

But education reform must be linked to policy action in other areas such as labour reforms if it is to realise its full potential.

Lastly, I should like to make the case for improvement of existing and development of new indicators.

The measurement of the contribution to human capital to economic and social well-being is fraught with measurement problems. Inputs and outputs rely on proxies such as levels of education that do not lend themselves to disaggregation. Several issues arise here:

– ICT skills are one area in particular that need better measurement.
– In addition, detailed education and labour market information on immigrants – for historical and ideological/cultural reasons is limited. In particular, data on ethnic immigrants and education and labour outcomes is difficult to collect. This must change if we want to improve policies.
– Career paths of researchers (OECD Careers of Doctorate Holders (CDH) Project). As a subset of HRST, Ph.D.s deserve special attention given their contribution to research and innovation.

Europe has started addressing the challenges of building human capital, but it must stay on the path of reform if it is to reap the benefits in terms of improvements of economic growth and social well-being. Lastly, I should like to make the case for improvement of existing and development of new indicators.