

MACROECONOMIC ASPECTS OF THE KNOWLEDGE ECONOMY IN THE LIGHT OF THE LISBON STRATEGY

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The goal set out for the European Union in the Lisbon strategy of 2000 is to build "the most competitive and dynamic knowledge-based economy in the world ...with more and better jobs and greater social cohesion".

CURRENT TOPIC In order to create the conditions under which this strategic objective can be fulfilled, it is necessary that EU countries, Slovakia included, focus on supporting strategies aimed at long-term economic growth and at increasing employment and labour productivity. To achieve such demanding goals, whether in the EU as a whole or in Slovakia itself, will be possible only if the field of education, science and research is significantly strengthened for the purpose of establishing a "knowledge economy". Such an economy requires substantially more investment in human capital. Strategic tasks in this regard include providing general support for the uptake of information technologies, completing a well-functioning internal EU market, easing labour market restrictions, removing obstacles to business, and ensuring sustainable economic growth.

The effective utilization and dynamism of these processes can be supported by defining and identifying the factors of economic growth, and this in turn can substantially raise the performance of the Slovak economy and contribute to realizing the objectives of the Lisbon strategy. In regard to the realization of these objectives, the attention of both economic policy makers and economic theory is turning to the factors that will make the fulfilment of these objectives possible.

In addition to traditional production factors, the following factors have become crucial to economic growth in the new economy: human capital, the level of technological development, and the pace of technological change.

Investment in human capital helps to raise people's specialist and professional abilities and to make them more creative and inventive, which in any given company supports growth in labour productivity. That is the internal effect of investment in human capital. At the same time, the external effect of such investment is to increase the labour productivity of other people, other workers and other companies, as well as the performance of the economy as a whole. It is becoming apparent that long-term economic growth

can be ensured by investment in human capital and by the accumulation of human knowledge and abilities.

Economists have in recent years been focusing their attention on the effect that human capital has on a country's economic growth. The generally accepted conclusion of these analyses is that substantial investment in human capital is an essential condition of growth.

The various theories and models of economic growth aim to analyse growth from the view of quantitative changes in basic macroeconomic indicators. Economic literature includes a range of theoretical and methodological paradigms that variously try to interpret the issue of economic growth. Traditionally, these theories have analysed the overall performance of the economy as a static system of mutual relations and the attempts to influence them through different economic-political measures. Knowledge of economic theory and practical experience both show that certain preformulated conditions and assumptions cannot be employed mechanically, without our understanding and respecting the internal structure of the economy, its potential sources of growth, and the real possibilities for taking advantage of them. What is becoming clear is that economic growth models and their application in real economic practice need to be approached on the basis of an understanding and respect for additional conditions and that this whole complex of conditions and assumptions for growth should serve as a guide to action – as a basis and starting point for the implementation of a concrete economic and social policy.

Under the influence of globalization and other important changes in the world economy, there is now a developing discussion on the content, character and consequences of long-term economic growth. The theoretical-methodological reflection of these processes indicates that a specific practical analysis does not automatically validate the various formal models of economic growth. It is becoming evident that the significance of these abstract constructions



is largely theoretical and cognitive and that they serve as a means to understand certain abstract theoretical connections and assumptions. It is only with difficulty that they can be applied as specific economic-political instruments. Therefore, it is not possible to rely solely on the theoretical construction of models or on the fact that their application will automatically deliver permanent economic growth.

Macroeconomic performance to a large extent determines how competitive an economy is, and at the same time it is a result of competitiveness. This performance relates mainly to economic growth trends measured and expressed as growth in real GDP and labour productivity – these are reflected in concrete terms as a higher economic and living standard, which is considered to be the aggregate expression of an economy's competitiveness. The prime objective of the EU is to catch up with and overtake its main economic rivals, the United States and Japan. The EU lags behind these countries in terms of both GDP per capita and labour productivity, and therefore in overall economic performance, too. Following the enlargement of the EU to include 10 new Member States, this gap has widened still further. Slovakia can also support the fulfilment of the Lisbon strategy objectives. The increasing competitiveness of the Slovak economy should ensure that its growth exceeds the EU average and thereby brings the economic level in Slovakia closer to that in advanced EU countries.

Slovakia is at a much lower level in comparison with the old Member States, and its GDP per capita in 2004 came to just over 50% of that in the EU25 at purchasing power parity (PPP).

What is positive, however, is that the growth in both labour productivity and GDP in Slovakia has since 2001 been higher than the average in the EU15. If Slovakia wants to maintain this trend, and thereby to support the development of a knowledge economy, it must invest much more heavily in education, science and technology. In a knowledge economy, the latest scientific and technological information is put into practice at an exceptional pace, a consequence of which is that the economy is to a greater extent dependent on education, science, creativity, information, and innovation. These capabilities represent the most important contributions to increasing labour productivity, GDP, and living standards.

Slovakia and the other V4 countries (the Czech Republic, Poland and Hungary) have not so far been sufficiently involved in the utilization of knowledge-based sources of competitive advantages. To become fully integrated into the innovation flow of the knowledge economy represents the main challenge for Slo-

vakia and the V4 countries. According to a target set by the Lisbon strategy, EU Member States' gross expenditure on research and development should represent 3% of GDP in 2010. Of that total, two-thirds should be financed by the private sector. In 2003, this share stood at only 1.92 in the EU25, compared to 2.76% in the United States and 3.12% in Japan.

Significant differences exist between EU countries in this respect. The highest expenditure on research and development is reported in Sweden (3.98%) and Finland (3.4%).

Table 1 Gross expenditure on research and development in % of GDP

	2000	2001	2002	2003	2004
EU15	1.94	1.99	1.99	1.98	
Slovakia	0.65	0.64	0.58	0.58	0.53
Czech Republic	1.23	1.22	1.22	1.26	1.28
Hungary	0.80	0.95	1.02	0.95	
Poland	0.66	0.64	0.59	0.59	

Table 2 Government spending on science and research

	2000	2001	2002	2003
ÚÚ-15	0.75	0.76	0.78	0.79
Slovakia	0.36	0.34	0.32	0.32

The role of the education system in the development of a knowledge economy is especially significant. Quality of education represents one of an economy's main competitive advantages, and that is why Member States have committed themselves to increasing investment in human resource through raising expenditure on the education system. Spending from both public and private sources needs to be increased. It should be noted, however, that investing more money in education does not automatically improve the quality of the education process. It is more the case that if the schools and education sector is underfinanced – if insufficient funds are directed its way – then it cannot be expected to support the dynamic development of society. Naturally, higher funding for education creates better conditions for a higher quality education system, but it cannot alone ensure this. An important prerequisite for the effective use of these investments is the preparedness and ability of schools and teachers to make creative and professional use of the funds and to multiply their value. That requires comprehensive modernization of the education system, and especially higher education. How to modernize higher education and the overall conception of the activities performed by higher education institutes is a substantially deeper problem, and beyond the scope of this article.



Table 3 Public expenditure on education as a share of GDP
(v %)

	1995	2000	2001	2002
EU15	5.2	4.9	5.1	5.2
Slovakia	4.9	4.1	4.0	4.3

From the above data it is apparent that Slovakia at present lies below the EU average in key macroeconomic indicators. The harmonious development of real and nominal convergence will be of crucial significance to the further course of the integration process. An example for Slovakia could be Ireland, whose experience shows that progress in real convergence demands the continuous creation and refining of a sound business environment, investment in education, science and research, a focus on industries with high value added, a well-functioning labour market, sustainable macroeconomic stability, and

effective use of EU funds. For Slovakia, the road to positive results in real and nominal convergence and to long-term sustainable competitiveness also involves building a knowledge economy.

In the new economy, the latest scientific and technical knowledge is pursued at a pace not seen before, the result of which is an economy heavily dependent on knowledge and innovation. What matters in this situation is the ability to generate, expand and utilize the latest scientific facts, innovations and information. It is these capabilities that represent the most important preconditions for growth in labour productivity and living standards.

Slovakia's actual preparedness and ability to meet this objective will significantly influence the performance of its economy, its competitiveness, and the position of Slovakia in the European Union and the globalizing world economy.