

WHAT ARE ROMANIA'S CHANCES OF BECOMING A KNOWLEDGE-BASED ECONOMY?

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Abstract

The aim of this paper is to provide an overview of the Lisbon Strategy, the proposal which set the action framework intended to transform the EU into “the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion, and respect for the environment by 2010”. We will also discuss the activities of the European Research Area (ERA), focusing in particular on the way in which our country may become a competitive part of this process.

Key words: knowledge-based economy, Lisbon Strategy, Romania.

JEL Classifications: D8, O31, O52, R11.

Introduction

Romania's accession to the EU has brought about major changes in political, social and economic discourses and debates. Together with Bulgaria, we are the last entrants and poorest members of the Union. Future seems in the eyes of many as grim and given the economic crisis that Europe is still trying to come to grips with, the answer to the question we pose in the title of the present paper could easily be: “slim”. We shall, however, argue that the human capital of our country is the most valuable resource that a nation could ever tap in order to overcome the seemingly widening gap between the affluent economies of Europe and the more recently accepted Member States.

Overview of the concept of *knowledge society/economy*

The debate on the emergence of the ‘knowledge society / economy’ first gained public attention when industrial societies started to be restructured and transformed into ones with a greater dependency upon “information” based areas of activity. Among the earliest authors to emphasise the importance of knowledge to society we could mention Machlup (1962). Economists such as Drucker (1959, 1969, 1994) and Bell (1973) regarded this as part of a move towards a “post-industrial” economy and society. The initial emphasis on “information” shifted in the 1970s to a greater focus on “knowledge”, which was reinforced by a re-emphasis on ‘human capital’ as an individual good, which increased the earning capacity of the individuals and recognised more strongly their contribution to overall wealth generation. This drew attention to innovators, entrepreneurs, and knowledge managers as the key to economic growth and change. Consequently, increased attention to the rights and capacities of the individual within society more generally, as part of a wider liberalization and deregulation of economic and social activities, also gained momentum during the latter decades of the 20th century (Giddens 1991, 2001, Beck 1999). The correlations between the enhanced importance of knowledge as the reason for economic growth and wider social transformation became a theme in much of the writing that ensues.

What is then a knowledge-based economy (KBE)? The OECD define it as "... economies, which are directly based on the production, distribution and use of knowledge and information" (OECD 1996: 7). The importance of the digital technologies, the Internet, computers, information and globalised networks that these technologies enable have also been stressed. It is now the "age of speed". Time and space have been compressed (Harvey 1989, Virillio 2004). There is an increasing shift of activities to computers rather than these being carried out in specific locations. Testing of products can now be done through simulation on the computer. People can work from home (Felstead et al 2005, Leonard and Thorns 2006). People can create virtual worlds in "my space" and live out their lives in cyberspace. Although not all are involved in these activities it does extend the range of possibilities and gives more prominence to 'mental' labour rather than physical labour carried out in discrete places. Knowledge is now seen as the primary source of competitiveness and the desire of governments is increasingly to create innovative and 'smart citizens'. Extending what constitutes knowledge to the "cultural and creative" sector is now incorporated into the discourse on the knowledge society as this sector has gained increased recognition as a potential contributor to economic growth.

It is however difficult to give one, all-encompassing definition to the knowledge economy/society. Smith (2002: 6-7), for example, asks himself the same question. "At the outset, it must be said that there is no coherent definition, let alone theoretical concept, of this term: it is at best a widely-used metaphor, rather than a clear concept." The OECD has spoken of knowledge-based economies in very general terms, as meaning 'those which are directly based on the production, distribution and use of knowledge and information'. This definition is a good example of the problems of the term, for it seems to cover everything and nothing: all economies are in some way based on knowledge, but it is hard to think that any are directly based on knowledge, if that means the production and distribution of knowledge and information products." Furthermore, Foss (2002: 48) contends that, "[w]hatever we think of this journalistic concept [of the Knowledge Economy], it arguably does capture real tendencies and complementary changes." What might these 'new' tendencies be? "We define the knowledge economy as production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence. The key component of a knowledge economy is a greater reliance on intellectual capabilities than on physical inputs or natural resources" (Powell and Snellinlan, 2004). In this case the 'modern' emphasis seems to be on 'knowledge' 'accelerated technical and scientific advance' and 'greater reliance on intellectual capabilities than physical inputs or natural resources'.

The Lisbon strategy

It was during the meeting of the European Council in Lisbon (March 2000), that the Heads of State or Government launched a "Lisbon Strategy" aimed at making the European Union (EU) the most competitive economy in the world and achieving full employment by 2010. This strategy, developed at subsequent meetings of the European Council, is based on three pillars:

- An economic pillar preparing the ground for the transition to a competitive, dynamic, knowledge-based economy. In this context, great importance is laid on the need to constantly adapt to changes in the information society and to encourage research and development.
- A social pillar designed to modernise the European social model by investing in human resources and combating social exclusion. To this end, the Member States have to invest in education and training, and to carry out an active policy for employment, thus facilitating the move to a knowledge economy.
- An environmental pillar, which was subsequently added at the Gothenburg European Council meeting in June 2001, draws attention to the fact that economic growth must be decoupled from the use of natural resources.

As a follow-up, a list of targets has been drawn up with a view to attaining the goals set in 2000. Considering that the above-mentioned policies fall almost exclusively within the sphere of competence of the Member States, an open method of coordination (OMC) necessitating the development of national action plans has been introduced. Alongside the broad economic policy guidelines, the Lisbon Strategy also provides for the adaptation and strengthening of existing coordination mechanisms: the Luxembourg process for employment, the Cardiff process for the functioning of markets (goods, services and capital) and the Cologne process on macroeconomic dialogue.

Let us take a closer look at the text of the Conclusions of the Presidency, in which it was said that the European Union set as *new strategic goal* “to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion. Achieving this goal requires an *overall strategy* aimed at:

- preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market;
- modernising the European social model, investing in people and combating social exclusion;
- sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix.”

As far as the strategy is concerned, it was stated that it was created to “enable the Union to regain the conditions for full employment, and to strengthen regional cohesion in the European Union.”

The European Council saw the need “to set a goal for full employment in Europe in an emerging new society which is more adapted to the personal choices of women and men. If the measures set out below are implemented against a sound macro-economic background, an average economic growth rate of around 3% should be a realistic prospect for the coming years.” The means through which the strategy could be implemented were also taken into consideration. Here was the role of the OMC emphasised: “improving the existing processes, introducing a *new open method of coordination* at all levels, coupled with a stronger guiding and coordinating role for the European Council to ensure more coherent strategic direction and effective monitoring of progress.”

The European Research Area (ERA)

In the context of the Lisbon Strategy one could not avoid discussing the importance that research has in the creation of knowledge-based societies. Research and development (R&D) efforts at European level started to converge in January 2000, when the European Commission adopted a Communication which advocated the creation of a European Research Area (ERA), whose main purpose was to create conditions for the enhancement of scientific and technological activities, as well as the development of research policies across Europe. The underlying premise was to set up a framework that would facilitate the propagation and capitalization of European research efforts by strengthening the coherence of research activities and policies carried out in Europe.

The idea of a European Research Area emerged out of the growing awareness that research in Europe is flawed by weaknesses due to:

- insufficient funding, plus the EU seriously lagged behind both the US and Japan in terms of R&D intensity;
- lack of an environment to stimulate research and exploit results, because the EU research framework did not provide adequate fiscal incentives, intellectual property (IP) protection, venture capital, markets and competition policies;
- the discontinuous nature of activities and the dispersal of resources. Research and innovation were pursued largely independently at, EU, regional and national levels leading to poor governance, integration, coordination and sub-optimal allocation of resources.

In 2000, the EC in its Communication, COM(2000)6 final of 18/01/2000, 'Towards a European Research Area' defined a number of measures that need to be implemented (CEC, p.15):

- Networking all existing centres of excellence and the creation of virtual centres;
- Definition of a European Research approach;
- Co-ordinated implementation of national and European research programmes;
- Better use of instruments and resources to boost investment in Research & Innovation (R&I);
- Establishment of a common EU policy framework;
- More researchers and additional possibilities of mobility in EU research work;
- Greater EU cohesion in research and knowledge transfer;
- Unify the efforts of academia, industry and researchers with the EU;
- Attraction researchers from the rest of the world to the EU;
- Promotion of common social and ethical values in Science & Technology (S&T).

ERA enjoyed all-out support from the part of the Heads of State or Government at the Lisbon European Council on 23-24 March 2000, and on the same occasion a series of objectives as well as an implementation timetable was set to implement this decision. Since March 2000, many initiatives have been launched to make ERA a cornerstone of the EU knowledge society. The EU 6th Framework Programme (FP6), presented in 2001, was conceived as the best instrument to realise ERA and thus FP6 included new types of actions, designed to structure and integrate national research efforts. In 2002, the Decision No. 1513/2002/EC of the EC concerning the FP6 for the creation of the European Research Area and to innovation (2002 to 2006) kicked the first three-year cycle to establish ERA focused on the renewed Lisbon Strategy, and transformed ERA to a practical research policy concept.

In 2002, the EC Communication, COM(2002)565, '*European Research Area: Providing New Momentum*' defined the ERA Concept, three strategic, interconnected and complementary targets:

- the creation of an "internal market" in research, with free movement of knowledge, researchers and technology to increase cooperation, competition and an improved allocation of resources;
- a restructuring of the EU research fabric, by improved coordination of national research activities and policies, which account for most of the funded EU research;
- the development of a European research policy which not only addresses the funding of research activities, but also takes account of all relevant aspects of other EU and national policies¹.

The following are some of the most notable developments:

- the ERA-NET, an instrument to address the inefficiency and fragmentation in research;
- the European Strategy Forum for Research Infrastructures (ESFRI) Roadmap. To be successful more effort and support from institutions is required from a legal and financial perspective;
- the ITER, a joint international R&D project that successfully demonstrate the scientific and technical feasibility of fusion power. The EU (represented by EURATOM), Japan, China, India, Korea, Russia and the USA were partners in the project;
- the Marie Curie scheme and the European Charter for Researchers are two flourishing measures aimed at better exploiting human resources in research.

Actions to achieve ERA have also been implemented at national level, for example:

- R&D strategies and policies have evolved towards richer and more complex mixes of measures, tailored to the particular situation of the Member State in question;

¹ See also <http://cordis.europa.eu/era/concept.htm#era>.

- Convergence in national policy making is materialising driven by the Open Method of Coordination (OMC) and overseen by Scientific and Technical Research Committee (CREST). In 2005, the EC Communication, COM(2005)118 of 06/04/2005, entitled 'Building the ERA of Knowledge for Growth' was published together with the FP7 proposal. This communication underlined the need for cooperation between European policies to contribute to deliver the Lisbon objectives and the renewed Lisbon strategy. It is in this context that the 'knowledge triangle' concept of research, education and innovation to work was introduced. The central action on the research side of 'knowledge triangle' is the new FP7. The knowledge triangle concept gave the ERA an explicit recognition that it was embedded into the broader context, which obliges consideration not only specific to the research outputs.

In view of the preparations for the 2008 initiatives of the second ERA cycle, a Green Paper '*The European Research Area: New Perspectives*' was launched, in 2007, to stimulate wide institutional and public debate. The European Research Area has become a key reference for research policy in Europe and by building on the key principles agreed unanimously, in 2000, that ERA should comprise:

- An adequate flow of competent researchers that can easily operate in any institution, sector and EU country;
- World-class research infrastructures that are highly networked, integrated and accessible to research teams across the globe;
- Excellent research institutions that through public-private cooperation attract critical mass of human and financial resources;
- Effective knowledge sharing between public and private organisations;
- Well-coordinated research programmes and priorities that focus on joint actions amongst EU member states;
- a wide opening of the European Research Area to the world, with a special emphasis placed on the participation of neighbouring regions of the EU.

ERA is still evolving and transformed itself but its *raison d'être* defined at the beginning of the millennium are still valid. Building on the experience of FP6 and FP7 includes the continuation of actions already introduced as well as new actions to further advance the ERA objectives, notably supported by integration of research efforts, and the promotion of excellence through competition.

Romania: current situation

According to the Annual Innovation Policy Trends and Appraisal Report: ROMANIA, 2006, part of the European Trend Chart on Innovation, the situation of our country looks encouraging. It should be borne in mind, though, that, despite significant progress that our country has made, the position we are in is far from satisfactory.

“Romania is currently in the sixth year of continuous economic growth, with annual growth rates of about 5 % since 2001, and is working towards a gradual reduction of the development gap to EU member states. Economic growth is mainly the result of technology upgrading through imports and foreign direct investment flows, industrial downsizing and restructuring, combined with a disciplined fiscal policy and a tight monetary policy that led to improvements in the business environment and the functionality of the Romanian market.” Among the key macroeconomic indicators that are indicative of this positive economic performance, the authors mention:

- A *real GDP growth* of 4.1 % recorded in 2005 compared to 2004, which was, on the one hand, boosted by increasing internal demand, cuts in private and corporate income taxes since the introduction of the 16 % flat rate tax in 2004, and, on the other hand, tempered by the negative effect of the net export and the high dependency of the economy on imports of energy and raw

materials. The 2005 value of the GDP per capita remains, however, very low – about a third of the EU average.

- *Labour productivity per person employed* grew by 3.3 % in the first semester of 2005 against the same period of 2004, and by 8.9 % in the first quarter of 2006 against the same period of 2005, due to industry downsizing and increasing industrial production. The 2005 values of labour productivity remain however very low, accounting for about a third of the EU average.

- *Inflation rate* recorded a strong decline since 2000, reaching 9.1 % in 2005, but is still one of the highest among EU members and candidate countries. With an average monthly inflation rate of 0.7 % in the period from January to November 2005, the estimated inflation target of 7.5 % for 2005 was not met due to complex internal and external factors.

- *Unit labour costs* are low in Romania and are currently the country's main competitive advantage. However, this advantage is expected to fade out after Romania's accession to the EU, which calls for firm action to encourage in-house R&D and innovation, to help decrease the imports of technology and equipment and increase the value-added of Romanian products on the internal and external markets. In addition, the competitive advantage of low labour is likely to be overshadowed by the danger of a lock-in in labour-intensive or natural-resource-intensive and low skill patterns of specialisation. Therefore, the move to higher technology and competitive activities needs considerable adjustments of the labour market, investment in education and upgrading of workforce skills, as well as larger FDI flows for technology investments.

- *The FDI volume* in 2005 grew by 58 % compared to 2004 levels, as a result of improvements in the business environment and effects of the flat rate tax, and the ascending trend continued in 2006. FDI flows are predominantly oriented towards industry, due to some advantages Romania has compared to its neighbouring countries, such as lower real estate prices, cheap and qualified workforce, the existing production capacities and tradition in some industrial fields.

The Lisbon Strategy in Romania

In Romania, the Lisbon Strategy objectives are pursued in the light of national priorities. A first document called "**Romania's contribution to the intermediate evaluation of Lisbon Strategy**" was published in March 2005. It was also formally presented to the European Commission. The document was prepared by two independent organisations: the Romanian Centre for Economic Policies and the Applied Economy Group. It is based on an initiative (and support) of the Ministry of Foreign Affairs. The exercise was repeated in October 2005, with funding provided by the UK Embassy in Bucharest. In September 2005 the government appointed the Romanian representative to the High Level Group for National Reform Programmes – a state secretary in the Ministry of European Integration. In October 2005, **the Working Group for the Elaboration of the National Reform Programme** was set up and reunited representatives of all institutions concerned.

The working group relies on the main strategy documents elaborated by the Romanian government:

- The Pre-accession Economic Programme and the 2007-2013 National Development Plan
- The Industrial Policy of Romania
- The National Strategy for Regional development – Regional Operational Programme
- Several 2007-2013 Sectoral Operational Programmes: Transport Infrastructure, Human resources Development, Increasing Economic Competitiveness;
- The 2004-2008 Government Strategy for the development of SMEs;
- The 2006-2008 National Plan for poverty alleviation and promotion of social inclusion
- The 2004-2005 National Programme for the labour market
- Romania's position documents.

The Working Group has defined the main structural elements of the Romanian NRP according to the integrated guidelines and the 14 structural indicators, taking into account the NRPs prepared by the Member States and the Commission feedback on these documents. The NRP preparation stage ended in February 2006 and the ministries concerned forwarded all documents needed for the final form of the NRP to the Ministry of European Integration. The first version of the Romanian NRP was the subject of a public consultation from June to September 2006. The final version was to be approved by the parliament in October 2006, thus respecting Romania's political commitments deriving from the Lisbon Strategy. In its current form, the Romanian NRP defines the medium-term priorities of the country as economic stability and sustainability of public finance, increasing economic competitiveness and productivity and improving the labour market. The key factor in pursuing these priorities is the development of appropriate infrastructures, both human and material. Based on the above medium-term priorities, the Romanian NRP defines 14 key priorities, structured on three categories according to the Integrated Guidelines:

Macro-economic priorities: economic stability and sustainability of public finance

1. Macroeconomic stability (guidelines 1,4)
2. Reform of the social security and health insurance systems (guideline 2)
3. Control of public expenditure (guidelines 1, 3, 4)
4. Increasing the quality of public services and the administrative efficiency (guidelines 3, 5)
5. Ensuring a balanced energy system (guidelines 1, 4, 16)

Micro-economic priorities: improving economic competitiveness and productivity

6. Knowledge and Innovation (guidelines 7, 8, 9)
7. Promotion of entrepreneurship (guidelines 7, 15, 10)
8. Information and communication technologies (guideline 9)
9. Development of transport networks (guidelines 8, 11)
10. Increasing regulation quality (guidelines 12, 13, 14, 15)
11. Sustainable management of renewable and non-renewable resources. Energy efficiency (guidelines 8, 11)

Labour market priorities: quality of labour market for all age groups

12. Labour market flexibility and security (guidelines 17, 18, 21, 22)
13. Improving access to labour market (guidelines 19, 24)
14. Labour market competitiveness (guidelines 20, 23)

The theme of '**Knowledge and Innovation**' is included in the micro-economic priorities for improving economic competitiveness and productivity. The key priority in this area is to increase the public funding for RDI to 1% of GDP until 2010, and to 3% of GDP in total (two thirds of which would be financed by the private sector) around 2015. Other priorities for RDI include:

- *Strengthening human resources for RDI* by promoting changes in the higher education system to provide better support to scientific careers, increasing the number of PhDs and senior researchers, increasing the mobility of researchers and the investments in modern research equipment, enhancing business-university interaction. These objectives are specifically addressed by some policy measures like the 'Research of Excellence' Programme (RO_28), TransIno Programme for technology transfer and innovation through public-private partnerships (RO_23), "Partners for Excellence" Programme (RO_38) and UNISO - UNiversities for SOciety" Programme (RO_39).
- *Promotion of Knowledge* – in this respect, the NRP envisages the creation in 2006 of a *National Council for Research and Development* that will approve the strategic RDI priorities. The priority areas of the forthcoming 2007-2013 National RDI Plan are: information technologies, competitiveness through innovation (advanced technologies in industry, agriculture, health, energy,

transports), sustainable development (including eco-technologies), and quality of life. In order to improve the resource allocation, the national system for the evaluation and accreditation of RDI institutions and personnel was consolidated. In addition, Romania will continue to support international cooperation and internationalisation of research through different financial instruments, such as the CORINT Programme for International Co-operation and International Partnership (RO_8).

- *Promotion of Innovation* – the main objectives are: strengthening innovation infrastructure, increasing the efficiency of university-industry cooperation and facilitating technology transfer to economic agents. Consolidation of innovation infrastructure is currently supported by the INFRATECH Programme (RO_22), while public-private partnerships are supported by the ‘Research of excellence’ programme (RO-28) and 18 national technological platforms monitored by MER-NASR, which bring together R&D institutions, universities and private firms. In addition, the new RDI Plan for the period 2007-2013 will provide support to industrial clusters, with direct benefits to innovative SMEs and start-ups. Other priorities directly targeting innovative SMEs and start-ups are the creation of a risk capital fund, state aid schemes and better access to public procurement, but they are not yet met by any of the existing policy measures.

- *Protection of intellectual property rights* – in this respect, the NRP encourages the application of measures included in the Action Plan for the Implementation of the National Strategy in the field of IPR. These measures include the creation of regional structures to inform and provide consultancy services to SMEs on their IPRs, a better interaction of SMEs with excellence centres and innovation poles in order to ensure effective technology transfer to SMEs, modernising IPR legislation and procedures, the promotion of industrial policy advisers, the simplification of patent application procedures, increasing the technological component of FDIs, etc. These objectives are only partially addressed by the existing policy measures, such as the INFRAS Programme for the consolidation of standardisation and quality infrastructures (RO_7) and CALIST Programme for Quality and Standardisation (RO_6).

We will present below the situation of our country as compared to other European countries, in terms of innovation, by five dimensions: *Innovation drivers* (which measure the structural conditions required for innovation potential), *Knowledge creation* (which measures the investments in R&D activities), *Innovation & entrepreneurship* (which measures the efforts towards innovation at the firm level), *Applications* (which measures the performance expressed in terms of labour and business activities and their value added in innovative sectors), and *Intellectual property* (which measures the achieved results in terms of successful know-how). Based on the Summary Innovation Index (SII), The European Innovation Scoreboard 2007 established the following classification of European countries:

- Sweden, Switzerland, Finland, Israel, Denmark, Japan, Germany, the UK and the US are the *innovation leaders*, with SII scores well above that of the EU27 and most other countries. Sweden has the highest SII of all countries, but its leading position is mostly based on strong inputs.

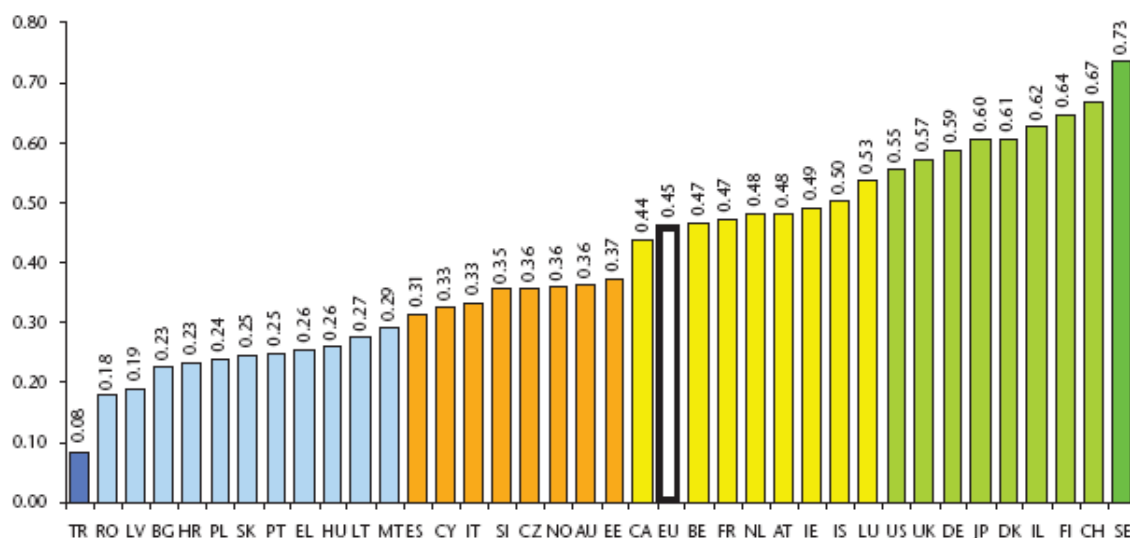
- Luxembourg, Iceland, Ireland, Austria, the Netherlands, France, Belgium and Canada are the *innovation followers*, with SII scores below those of the innovation leaders but equal to or above that of the EU27.

- Estonia, Australia, Norway, Czech Republic, Slovenia, Italy, Cyprus and Spain are the *moderate innovators* with SII scores below that of the EU27.

- Malta, Lithuania, Hungary, Greece, Portugal, Slovakia, Poland, Croatia, Bulgaria, Latvia and Romania are the *catching-up countries*. Although their SII scores are significantly below the EU average, these scores are increasing towards the EU average over time with the exception of Croatia and Greece. Turkey is currently performing below the other countries included in the EIS.

Figure 1

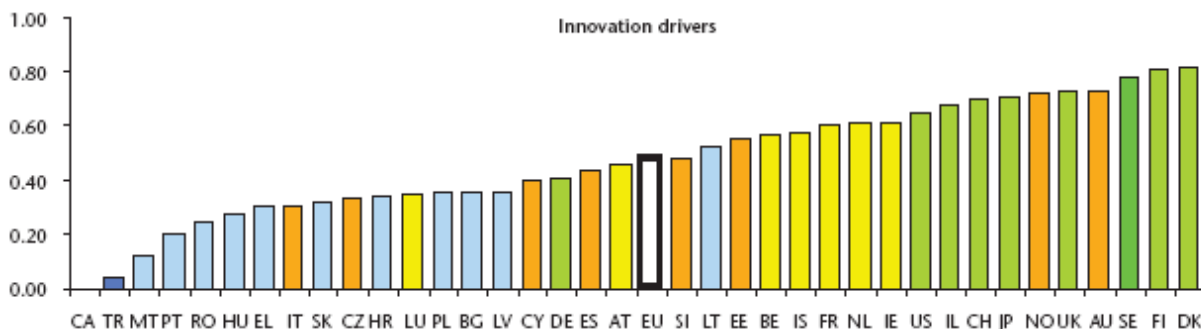
The 2007 Summary Innovation Index (SII)



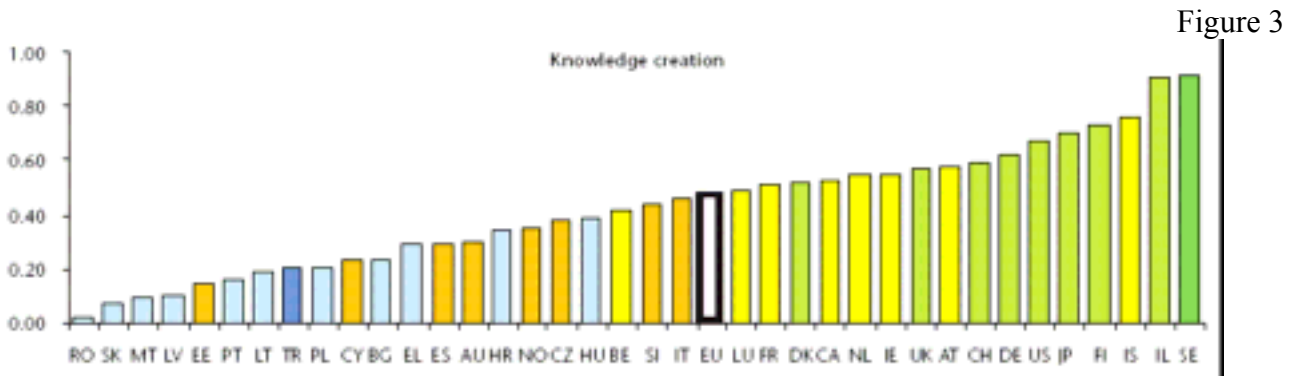
Source: The European Innovation Scoreboard 2007, p.07

As gloomy and saddening as it may well seem, Romania is the worst performer, with the lowest score, out of all the catching-up countries, i.e. 0.18, followed by Latvia and Bulgaria. As for the catching-up countries, mention should be made of the fact that, although below EU average in all of the dimensions there are some noteworthy exceptions, such as on Applications where Malta has the highest ranking and where Slovakia ranks above some innovation leaders. In both cases these countries rank highly on sales of new to market products, which may be a reflection of the relatively small markets that companies in these countries operate within. In both cases the high score on Applications is also partly due to the structure of their economies, as Malta has high exports of high technology products and Slovakia a high share of employment in medium-high and high tech manufacturing. Although Turkey's overall performance is below that of EU Member States, it has a stronger performance than some Member States on Knowledge creation.

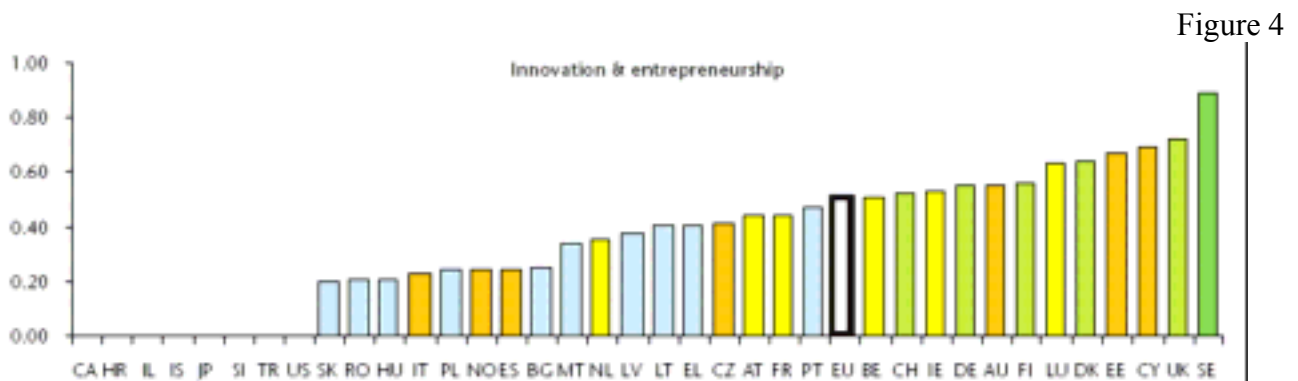
Figure 2



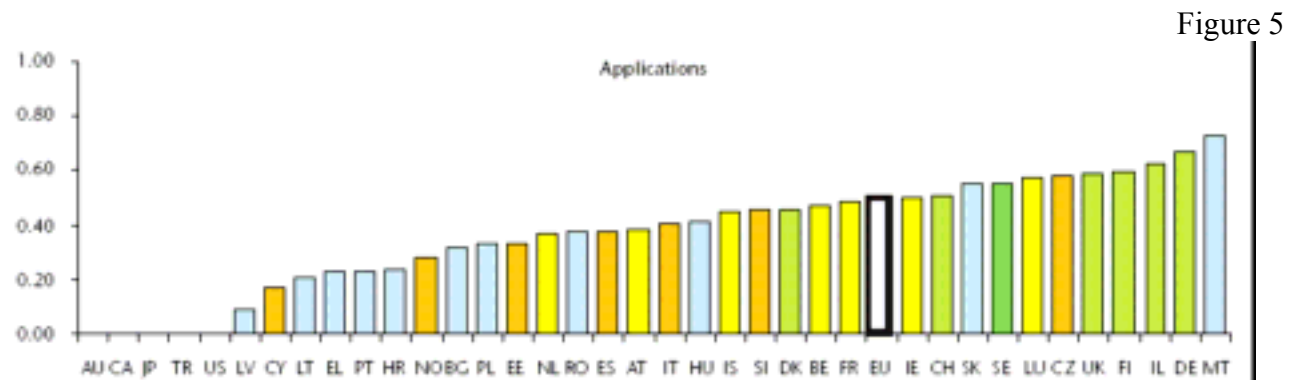
Source: The European Innovation Scoreboard 2007, p.09



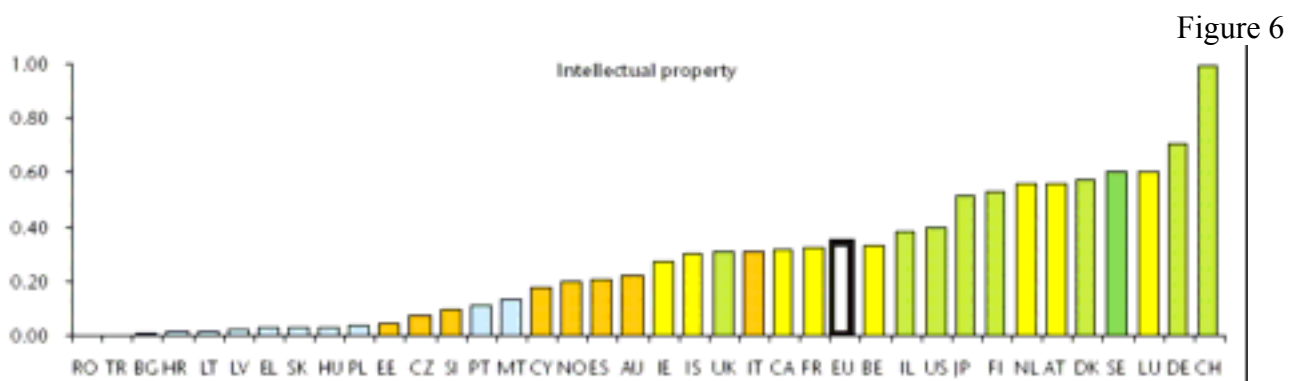
Source: The European Innovation Scoreboard 2007, p.09



Source: The European Innovation Scoreboard 2007, p.09



Source: The European Innovation Scoreboard 2007, p.09



Source: The European Innovation Scoreboard 2007, p.09

Conclusions

The presentation above is intended as an awareness raiser and calls for immediate action, from all the stakeholders concerned. Unless we all become aware of the stringency of the laggard situation that our country finds itself in, we face the risk of an ever-widening discrepancy. As we mentioned at the beginning of the present article, we do believe in Romania's potential to become a knowledge-based society, and there are sufficient resources that could contribute to boosting Romania's performance in terms of Research, Development and Innovation. The need for clear policies regarding the promotion and encouragement of RDI is imperative. By looking at the five dimensions, Romania scores not so badly on innovation drivers, particularly because the number of S&E graduates is still high and youth education is still widespread. The worst score is in the case of knowledge creation. However, it is quite encouraging that the business sector is starting to finance Research and Development carried out by universities.

All in all, better coordination of research activities and successful implementation of the National Research, Development, aimed at increasing the number of researchers and improving their professional performances; developing RDI infrastructures and their better connection and use at national and international level; generating high level S&T results, thus contributing to a higher international visibility and recognition for Romanian research; promoting S&T partnerships leading to innovative technologies, products and services for solving complex problems in key application areas; promoting industry-led research, technological development and innovation, based on the absorption of research results, for improving economic competitiveness and the quality of life and promoting the continuity and stability of R&D institutions, through the development of their own strategies, in accordance with the National RDI Strategy, are the key objectives to be achieved by our country in order to start becoming a truly knowledge-based economy.

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