ECONOMIC POTENTIAL OF INVESTMENTS IN RESEARCH - DEVELOPMENT - INNOVATION FOR ACCELERATING GDP GROWTH IN ROMANIA

Prof. Alexandru MANOLE PhD (alexandru.manole@gmail.com)
„Artifex” University of Bucharest

Assistant professor Diana Valentina DUMITRESCU Ph.D
(dianavalentinadumitrescu@yahoo.com)
„Artifex” University of Bucharest / Academy of Economic Studies, Bucharest

Daniel Ioan DUMITRESCU Ph.D (danidumitrescu@yahoo.com)

Abstract

This article includes an analysis of the field of Research - Development - Innovation in Romania. The study focuses on identifying the current state of RDI in our country as compared to the other 27 Member States of the European Union. In the context of the Europe 2020 Strategy, this research is all the more important as Romania has made some commitments to step up its financial support for R & D & I so that at the end of the Multi-Annual Financial Framework 2014-2020 1% To be allocated to Research - Development - Innovation.

Keywords: Research, Development, Innovation, GDP, Europe

Introduction

In Romania, research and development policy in the field of technology and innovation has materialized by approving a Romanian RDI Strategy for the period 2014-2020, highlighting the importance this field can have for increasing economic competitiveness in the context of European policies in the field. Romania has also taken into account the drafting of this document to the priorities of the European Union presented in the framework of the Europe 2020 strategy, the Europe - Innovation Union initiative and the most important research and development program of the European Union - Horizon 2020. Europe 2020 priorities mean an increase that has the following characteristics: smart, sustainable and inclusive, and one of the most relevant objectives of the European RDI strategy is that by 2020, 3% of EU GDP will be allocated to investment RDI.

Literature review

Sandu (2014) analyses the characteristics of the research and development results’ market in Romania. Avram, Avram and Avram (2014)

Methodology and data

The National Strategy for Development and Innovation Research - SNCDI, was built on a study on the national CDI market, a study funded by a contract with JASPERS. This study then evolved by highlighting the economic sectors with potential in the field. This strategy can be implemented through a series of subordinate instruments that include operational programs in force from 2014 to 2020. Thus, the RDI field will be achieved through ROP, POCU, NRDP, but especially through the Operational Program Competitiveness.

PO Competitiveness (funded by the ERDF) supports smart growth, promoting the knowledge and innovation economy by investing in: 1. Strengthening Research, Technological Development and Innovation; 2. Sharing the use, quality and access to information and communication technologies. Financial allocations The Competitiveness Operational Program, amounting to EUR 1.33 billion, will be made for Priority Axis 1 - Research, Technological Development and Innovation (RDI) supporting economic competitiveness and business development - EUR 797,872,340 (60% of the JOP) and For Priority Axis 2 - Information and Communication Technology (ICT) for a competitive digital economy - 531,914,894 euros (40% of the GOP).

As news items 2014 - 2020 as compared to 2007 - 2013, we can see that investments in RDI will be realized only in relation to the areas identified in the national RDI strategy as „smart specialization” and partnerships between enterprises And research institutions to increase knowledge transfer,
technology and staff with RDI skills to develop RDI-based products and processes and market demand. ICT investments will also be geared towards improving the digital environment for public service provision for citizens and business.

This strategy adopts the pragmatic nature of industrial research, moving away from purely speculative research, so as to follow the international trends of RDI orientation towards achieving practical and economic impact. SNCDI is also based on an innovation partnership based on the following four pillars: Budgetary resources (state-aided by allocating a percentage of GDP), Predictability (clear standards and rules for RDI activity), Public-Private Partnerships (so as to attract at least 1% of GDP in 2020), Researchers (reaching a number of researchers similar to the EU average).

Romania’s RDI strategy has identified those areas of the economy that have potential for growth and can make a significant contribution to increasing economic competitiveness. Thus, Romania’s intelligent specialization priorities were identified as economic areas with increased competence and where our country would have real or potential competitive advantages over other national economies, which would implicitly lead to economic growth and the increase of the Gross Domestic Product. Thus, SNCDI has identified the following economic areas as having an important economic and employment boosting role: tourism and ecotourism, textiles and leather, wood and furniture, and creative industries. Automotive, ICT and food and beverage processing have been identified as presenting competitive economic dynamics and Health and pharmaceuticals, energy and environmental management and bioeconomy have added value and important features of innovation and technological development.

The SNCDI also proposes a set of priorities of public relevance aiming at attracting resources and creative ideas in the areas of RDI that bring solutions to existing societal needs. In this case, it is the public sector that supports the identification and attraction of innovative, disruptive solutions from private or public actors.

Even if a growing focus is on RDI trading, fundamental research is also important in the next period, and it is important to stimulate RDI supply, assessed on the scientific quality of proposals calculated in line with international standards. A prestigious example of this is the large-scale Infrastructure-Nuclear Physics (ELI-NP) infrastructure project. In fact, the financial framework 2014-2020 will mark the launching of two major pan-European research infrastructures: the Magurele project at ELI-NP and the Tulcea project, called the International Center for Advanced Research Fluvii - Delte - Marii Danubii.
Growth required to reach the national targets proposed by the percentage of GDP for RDI

As also shown in Fig. A above, Romania set a clear target of allocating 1% of GDP to RDI by 2020, which would converge towards the European Union average. At least from a declarative point of view, we note that for the 2014-2020 MFF, Romania has set the highest growth dynamics.

It is noticed that Romania is leading the platoon of countries (Bulgaria, Greece, Latvia, Lithuania, Malta) that need a significant increase in R & D to achieve the Europe 2020 target.

In this group, Member States have set very ambitious targets compared to previous GDP levels and past trends. Thus, towards the European Union average, Romania has committed itself to a more serious and sustained performance in support of Research and Development.

Innovative sectors: Particular attention should be paid to innovative sectors in particular to identify the trends to be considered later. First of all, it is relevant to note that Romania has not yet achieved the EU 2020 target of 3% GDP spending on research development. It is also useful to refer to the European Commission document Innovation Union Scoreboard 2014 which divides EU countries into 4 categories of innovation performance: Leaders, followers, moderate innovators and modest innovators - the last group to include Romania, Bulgaria and Latvia, but Romania is the most powerful „modest innovator.” The report details the criteria used To achieve this ranking as well as the fact that innovation performance in Romania has increased until 2009, after which it has fluctuated. Performance in relation to the EU has worsened from 50% in 2009 to 43% in 2013. Romania is well under The EU average for almost all indicators. Very poor performance is also seen from the number of non-EU doctoral students and In terms of R & D expenditure in the business sector. A high growth in Romania is observed for community designs, community marks, new PhD graduates and international scientific
co-publications. Strong declines are observed in non-research expenditures - innovation, R & D spending in the business sector, PhD students outside the EU and venture capital investments.

The above results are complemented by the analysis of the National Institute of Statistics of Romania (INSSE), published in July 2014, which also offers an interesting regional perspective. In short, at the country level, between 2010 and 2012, the share of innovative enterprises was 20.7%, 10.1 percentage points less compared to 2008-2010 (see Figure B below).

**Share of innovative enterprises**

![Figure B](image)

Data taken from the INS and interpreted by the author

Certain economic activities record high values of innovative activities, thus the most innovative economic activity in the industry was the manufacture of tobacco products in 80.0% of enterprises, while in the service sector there were research and development activities for 55, 5% of enterprises. By enterprise size, large ones are more innovative, 40.1%, compared to medium-sized enterprises, 26.6% and small ones, 18.3%. This trend has also been mentioned in the two sectors, industry and services (see Table A below).
The first 10 innovative activities between 2010 - 2012

Table A

<table>
<thead>
<tr>
<th>No</th>
<th>Economic Activity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tobacco products production</td>
<td>80,0</td>
</tr>
<tr>
<td>2</td>
<td>Research - Development</td>
<td>55,5</td>
</tr>
<tr>
<td>3</td>
<td>Production of pharmaceutical products</td>
<td>52,3</td>
</tr>
<tr>
<td>4</td>
<td>Production of motor cars</td>
<td>38,0</td>
</tr>
<tr>
<td>5</td>
<td>IT &amp; C services activities</td>
<td>35,6</td>
</tr>
<tr>
<td>6</td>
<td>Repair, maintenance of machinery and equipment installations</td>
<td>35,6</td>
</tr>
<tr>
<td>7</td>
<td>Financial intermediation minus insurance and pensions</td>
<td>34,6</td>
</tr>
<tr>
<td>8</td>
<td>Insurance, reinsurance and pensions (minus social security)</td>
<td>34,0</td>
</tr>
<tr>
<td>9</td>
<td>Decontamination services and activities</td>
<td>33,0</td>
</tr>
<tr>
<td>10</td>
<td>Manufacture of machinery and equipment</td>
<td>32,2</td>
</tr>
</tbody>
</table>

Data taken from the INS and interpreted by the author

In the period 2010-2012, the largest shares of innovative enterprises were registered in the South-East region, 36.5% and the North-East Region 32.2%, and the lowest recorded by the West Region 14.4% and the North-West Region by 12.0% (see Figure C).

Conclusions

The Multiannual Financial Framework translates the European Union’s priorities in financial terms, setting the maximum annual amounts that the EU can spend in different policy areas over the next seven years. By defining where the EU should invest more or less between 2014 and 2020, the multiannual financial framework is an expression of political priorities and a budgetary planning tool. The intense negotiations by the EU institutions over the 2014-2020 MFF agreement led to the approval of a global ceiling of € 960 billion in commitment appropriations and € 908 billion in payment appropriations. This budget is 3.5% and 3.7% lower than in the MFF 2007-2013. This discipline reflects the two-and-a-half-year compromise agreed by
the EU institutions between the EU’s investment policy for growth and the budgetary pressure faced by Member States at national level.

Strong emphasis has been put on spending aimed at boosting growth and job creation, in line with the EU’s policy priorities: the expenditure ceiling under subheading 1a „Competitiveness for growth and jobs” is increasing More than 37% compared to the MFF 2007 -2013. This category of expenditure includes, among other things, funding opportunities for research and innovation, education and training, trans-European energy, transport and telecommunications networks, social policy, business development. An essential role in creating growth and jobs in Europe is played by the new Horizon 2020 research and innovation program, which has a budget of nearly € 80 billion in current prices, around 30% More than in the 2007-2013 period. The program aims to stimulate high-level research in Europe, strengthen industrial leadership in innovation, and promote investment in key technologies, greater access to capital and support for SMEs. Horizon 2020 contributes to tackling major societal challenges, helps reduce the gap between research and the market, and plays an important role in international cooperation. The new COSME program is another key instrument for competitiveness, it is worth € 2.3 billion available to SMEs to boost competitiveness and stimulate growth and jobs in Europe. COSME is an EU SME program aimed at facilitating access to markets inside and outside the EU and providing easy access to finance through loan guarantees and venture capital.

References