

критического использования в контексте инновационных трендов современного образования.

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UDC 37.014.543(438)

### **THE FINANCING OF HIGHER EDUCATION: A STATUS REPORT ON EUROPEAN REFORMS**

**Kowalska K., Klepacki B.**

Warsaw University of Life Sciences - SGGW, *katarzyna\_kowalska@sggw.pl*

Warsaw, Poland

Since the second half of the twentieth century developed countries evolved in believe that the main source of their achievements was the scientific progress, reflected in technological and technical advances, which has a direct impact on social and economic progress. It turned out that the application of scientific achievements in practice (industry, transport, building industry etc.), allowed countries to benefit from a competitive advantage over other countries.

Leading role in science and economy in the nineteenth century was hold by England, which thus reached the primacy of the world - both in politics and military superiority. Following the example of England, other countries such as the Netherlands, France, and earlier the USA started to develop science.

No one disputes the importance of science, in each country lot of pressure is putted for its development, especially such as the USA, South Korea, and European Union. EU created an ambitious plan to achieve academic expenses at the level of 3% of GDP. So far this objective in most EU countries has not been reached.

For many years there was wide discussion about condition of Polish education and the needs for its amendment. As a result, between 2010 and 2011 new acts were adapted, concerning Polish Academy of Sciences, financing of education, establishment of the National Science Centre, establishment of the National Centre for Research and Development, as well as research institutes. The aim of those changes was to achieve higher quality of education, better preparation for a changing economy, increase in the participation of Polish's scientists in major international research projects, and creation of perspectives for Polish universities for sustainable development and permanent increase in research potential [ASSUMPTIONS ... 2009].

One of the key measures in achieving those goals is a mechanisms for efficient functioning of the university, so that more and more funds will be distributed through competitions, and funding from the government budget will depend on learning outcomes and research results.

An important element of the reform was the introduction of support found for the best universities, staff and students. A special role is played by the National Science Center and the National Center for Research and Development.

Changes in the level of financing of higher education and science.

Science and higher education are areas in which development is related to the economy and living conditions of the population, they are actions that require high expenditure. Poland is generally perceived as a country with a low level of investment in education. The level of expenditures and trends in this area in years 2007 - 2012 are presented in Table 1.

Table 1 - Expenditure on higher education and research in Poland, 2007-2012 (and in Belarus)

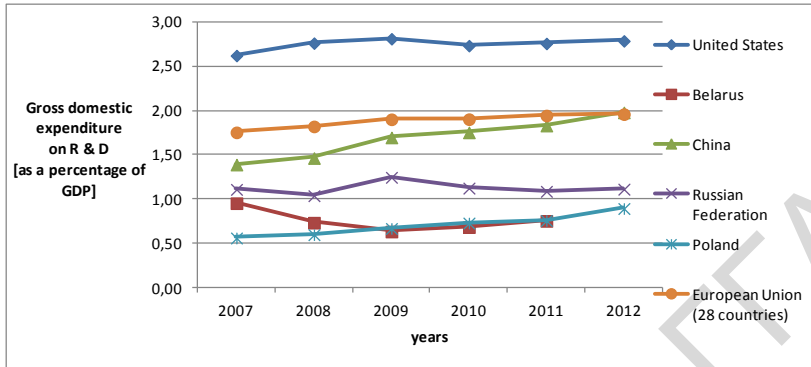
Years	Higher education		Research	
	Share of public expenditure in GDP	in mln PLN	Share of public expenditure in GDP	in mln PLN (in billion rubles)
2007	0,93	10 701,4	0,57 (0,96)	6 673 (747,2)
2008	0,88	11 091,0	0,60 (0,74)	7 706 (634,8)
2009	0,88	11 654,5	0,67 (0,64)	9 070 (551,4)
2010	0,71	11 722,4	0,74 (0,69)	10 416 (646,3)
2011	0,67	12 009,2	0,76 (0,76)	11 687 (738,3)
2012	0,65	12 402,1	0,90	14 353

Source: Own study based on *Education Institutions and their finances*; Polish Central Statistical Office 2012 and *Research and Development Activates in Poland 2012*; Polish Central Statistical Office 2013

In years 2007-2012 growth was recorded in Poland's internal expenditure on higher education and research and development (R&D). The value of these investments in 2012 reached 12,4 billion PLN in higher education and nearly 14.4 billion PLN for research.

Poland compared to other European Union member states cannot be distinguished as a leader in the field of interest of research development, expressed by the expenditure. Figure 1 presents comparative analysis of expenditure share in GDP for R&D in selected countries.

According to OECD data, the internal expenditures devoted to research in Poland in 2012 accounted for 0,9%. According to preliminary data for 2013 show that the intensity of R&D in Poland in relation to the EU is lower by 1.26 percentage points. In 2012, as in Poland, the rate did not exceed 1% in Romania, Greece, Slovak Republic and Romania. In EU Sweden and Finland, (respectively 3.4% and 3.5%) in the world Israel 4,2%, Japan 3,3 % and Korea 4,4% spend the highest percentage of GDP for R&D. In those countries, research and development, is largely financed by the private sector (Sweden 2.3% and Finland 2.72%). For comparison, in Poland the financing of R&D by the private sector is 0.2%.



Source: own study based on: OECD Statistics, Main Science and technology Indicators; [http://stats.oecd.org/Index.aspx?DataSetCode=MSTI\\_PUB](http://stats.oecd.org/Index.aspx?DataSetCode=MSTI_PUB) and "Belarus, sciences, technology and innovations, 2012" State Committee on science and technology of the republic of Belarus, Minsk 2012

Figure 1 - Gross Domestic Expenditure on R&D as a percentage of GDP, years 2002-2012

Higher education is not only financed from the state budget, it has a range of other sources, especially international. European Union is one of the biggest providers of funds for the development of sciences (Framework Program, last: 7<sup>th</sup> Framework Programme (2007-2013), replaced by *Horizon2020*).

At the end of December 2013, the EU authorities have decided on new allocation of financial resources for various purposes for 2014-2020. Among the adopted priorities and financial targets were those that may favor the development of science and higher education. All assumptions were included in a growth strategy entitled *Europa 2020*, the matters concerning development of research and innovation found their inclusion in document: *Horizon 2020*.

The Europe 2020 strategy is about delivering growth that is: smart, through more effective investments in education, research and innovation; sustainable, thanks to a decisive move towards a low-carbon economy; and inclusive, with a strong emphasis on job creation and poverty reduction. The strategy is focused on five ambitious goals in the areas of employment, innovation, education, poverty reduction and climate/energy. [European Commission...]

Above mentioned Horizon 2020 assumes three priorities:

1) Support for "Excellent Science" – including grants for individual researchers from the European Research Council and Marie Skłodowska-Curie fellowships (formerly known as Marie Curie fellowships);

2) Support for "Industrial Leadership" – including grants for small and medium-sized enterprises and indirect finance for companies through the European Investment Bank and other financial intermediaries;

3) Support for research to tackle "societal challenges". During negotiations between the European Parliament and Council it was decided to support research towards meeting seven broad challenges:

1. Health, demographic change and wellbeing,
2. Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bioeconomy,
3. Secure, clean and efficient energy,
4. Smart, green and integrated transport,
5. Climate action, environment, resource efficiency and raw materials,
6. Inclusive, innovative and reflective societies,
7. Secure & innovative societies [European Commission - MEMO/13/1085 03/12/2013].

Two specific objectives were adopted:

- a) Spreading Excellence and Widening Participation,
- b) Science with and for Society.

One of the most important issues of Horizon 2020 are Joint Technology Initiatives (JTI) associated with the development of public - private partnerships. This treatment was designed to enhance the scale and impact of investments in research, increasing coordination of research in Europe and to provide innovative industrial activities, essential for Europe to strengthen its position as a technologically innovative economy. Key issue of this process is to create stronger links between science and industry and creation of coordination mechanisms of research.

Particularly important are simpler rules for the implementation:

- a) 100 % financing for non-profit institutions - without own contribution,
- b) VAT is an eligible cost if the institution is unable to recover it,
- c) indirect costs will be at a constant level - 25% of eligible direct costs,
- d) less audit - audit certificate must be submitted to the European Commission (EC) only when final report is requested from the EC (for funding with higher or equal 325 000 Euro),
- e) new forms of funding are focused on innovation and finding solutions to the problems: commercial procurement, incentive awards, dedicated financial instruments,
- f) greater respect for the accounting practices of direct and indirect costs , no timesheets for people fully employed in the project.

### **Conclusion**

1. Briefly presented trends indicate that universities await significant adjustments. Changes are designed to increase their competitiveness and quality, both in research and didactics.
2. The role of government in the distribution of funds for specific research units decline, contribution provided by the government is decreasing, greater importance are related to parametric evaluation obtained individually or collectively, and obtained funds under grants and national and international projects.
3. The level of expenditure on higher education and R&D in relation to gross domestic product in Poland is one of the lowest in the European Union. In

industrialized countries, research and development is funded primarily by the private sector ( in Poland 0.2% GDP).

4. New financial perspective creates opportunities for development of research and higher education. The condition of obtaining funds will, however, greater lay on cooperation with businesses and the economy.

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