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DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION

Directorate A - Policy Development and Coordination
A.4 - Analysis and monitoring of national research policies

References to

Research and Innovation

in the European Semester Country Report 2016

Hungary

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Introduction

This document is a compilation of the Research and Innovation (R&I) references extracted from the European Semester Country Report 2016. It offers a quick overview of the analysis done by the European Commission on the reforms undertaken by the country in research and innovation and the progress made towards the Europe 2020 target on R&D.

References to research and innovation

1.1. Research, development and innovation

Significant bottlenecks remain in the Hungarian Research and Innovation (R&I) system including the instability of the public R&I funding and of the R&I institutional framework[1], as well as skills shortages[2]. Foreign owned business enterprises continue to drive progress towards the Hungarian R&D intensity target[3]. At the same time, low expenditure on the public research system put the sustainability of this trend at risk. Public R&D intensity in Hungary has been persistently low and has been even declining over the last ten years, decreasing to only 0.4% of GDP in 2014 (Graph 3.4.1). This decreasing trend undermines the capacity of the public science base in providing both skilled human resources and high quality research, which constitute the basis for increased cooperation with the business sector. The availability of highly-skilled professionals particularly in science and engineering has become a major issue in recent years.

Greater exploitation of the presence of multinational companies for the development of an effective national R&I ecosystem and an improvement of the overall innovation performance of the Hungarian economy remain key challenges. Partnerships between Higher Education Institutions, Public Research Organisations and business play an essential role in anchoring multinational companies in the national R&I ecosystem. This also requires addressing the low level of innovation among domestic enterprises and the lack of entrepreneurial culture. The National Research, Development and Innovation Strategy (2013-2020) defines measures explicitly targeting innovative SMEs. Yet mismatches between these measures and the situation of SMEs hamper their effectiveness. While the ongoing restructuring of the Hungarian research and innovation system aims to address system fragmentation, it has often led to delays in the implementation of the various strategies, such as the National Research, Development and Innovation Strategy as well as the Smart Specialisation Strategy Action Plan[4].

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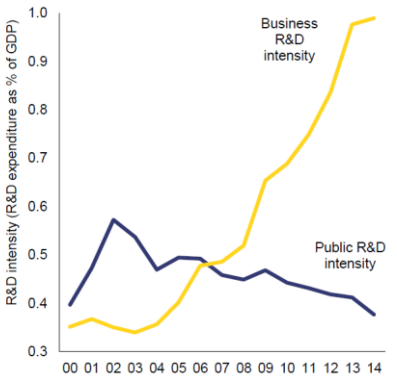
[1] Only 10.6% of Hungarian SMEs (EU-28 average 28.7%) carries out innovation activities. http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards/index_en.htm

[2] New graduates in science and engineering graduates (ISCED 5 and 6) per thousand population aged 25-34 was 9.6% in 2013 which is well below the EU average of 16.3% and places Hungary in the 26th position in the EU.

[3] Looking at Hungary's economic structure, the country is one of the top performers in terms of value added in high-tech and in medium high-tech manufacturing as % of total value added in the EU.

[4] To support the ongoing restructuring process of the national R&I system the Hungarian authorities requested in December 2014 a pre-peer review and subsequent in depth evaluation under the Horizon 2020 Policy Support Facility (PSF). The pre-Peer review was carried out by a high-level independent expert panel between May and October 2015 and identified the scope of the future in-depth Peer Review started in January 2016. The report is available at: https://rio.jrc.ec.europa.eu/en/library/horizon-2020-policy-support-facility-pre-peer-review-hungarian-research-and-innovation

Graph 3.4.1: **Hungary - evolution of business R&D intensity and public R&D intensity, 2000-2014**



(1) Business R&D intensity: Business enterprise expenditure on R&D (BERD) as % of GDP.
(2) Public R&D intensity: Government intramural expenditure on R&D (GOVERD) plus higher education expenditure on R&D (HERD) as % of GDP.
(3) Public R&D intensity: Break in series between 2004 and the previous years.
Source: Eurostat

1.1. Additional references to R&I

[Box 1.1: Investment Challenges, p. 9]

Other areas where challenges for investment can be identified include research, development and innovation and sector specific regulation (sections 3.4 and 3.5). The resources devoted to science and technology are comparatively low. In addition, there is a lack of spill-over effects from multinational companies. Financing of new innovative companies through venture/seed capital and newer initiatives such as crowdfunding remains marginal. High administrative and tax burden as well as entry barriers the retail sector, hamper investment. Below-cost regulated end-user prices for household consumers in the retail electricity and gas utility sector brought rates of return in the electricity and gas regulated business segments to zero during the past few years, leaving limited funds for investment.

[3.3. Education and skills, p. 50]

Current admission measures can narrow access to higher education and limit the pool of future innovators and researchers. This may have a negative impact on Hungary's attractiveness to investments in knowledge intensive sectors. The higher education strategy has been approved and an action plan adopted. The strategy aims to achieve a 35% tertiary attainment rate by 2023. At the same time, national studies suggest that the annually increasing admission requirements to higher education risk further narrowing the chances of upper secondary vocational graduates and disadvantaged pupils to access higher education. Upper secondary VET students apply to higher education to lesser extent and fewer of them pass advanced upper secondary exams that increase chances of admission. Disadvantaged pupils apply to programmes and institutions with lower admission requirements and thus higher admission chances. While science, technology, engineering and mathematics programmes are a priority the increasing admission requirements result in a decreasing number of entrants[5]. The community higher education centres are envisaged to be financed by local economic or social actors, which may prove to be challenging in disadvantaged regions where these centres are planned to be located.

[5] Szemerszki Marianna (2014) A középiskolából a felsőoktatásba. In. Felsőoktatási Műhely. http://www.felvi.hu/pub_bin/dload/FeMu/2014_1/femu_2014_1_47-63.pdf