References to

Research and Innovation

in the European Semester Country Report 2017

Croatia
Introduction

This document is a compilation of the Research and Innovation (R&I) references extracted from the European Semester Country Report 2017. 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 and innovation

Croatia has the fifth lowest R&D intensity level in the EU and, as a moderate innovator, performs below average in nearly all innovation dimensions. R&D intensity amounts to only 0.85 % of GDP, significantly below both the 2 % EU average and the national R&D intensity target of 1.4 %. Public R&D intensity stagnated in the last 5 years at around 0.4 % of GDP. Business R&D intensity has increased between 2009 and 2015 from 0.34 % to 0.44 %, but remains far below the EU average of about 1.3 %. In innovation, Croatia performs above the EU average only in human resources, a result of having an above-average proportion of young people with upper secondary education. Notwithstanding the high number of graduates, the education system faces challenges (see section 4.3.2).

The low level of R&D spending is one of the reasons for the low quality and efficiency of the R&I system. The quality and efficiency of the R&I system as measured by the quality and impact of scientific publications is low (1). Several factors continue to hinder the development of a strong science base in Croatia with improved connections to the economy. They include sub-critical scale, fragmentation, lack of international integration and a below EU average rate of new graduates in science and engineering (2). Public-private cooperation in R&I remains at a relatively low level, as shown by the level and decline in public-private co-publications (3) and the share of public research financed by business (4).

Croatia has recently introduced some policy responses to foster innovation. Several national-level strategies to support R&I have recently been developed to complement the 2014 strategies for education, science and technology and for fostering innovation. In particular, the 'smart specialisation' strategy adopted in March 2016 is an important framework for implementing ESIF funding effectively and ensuring that R&I activities are fostered in five key thematic priorities (health and quality of life; energy and sustainable environment; transport and mobility; security; food and bio-economy). There was progress in improving governance by merging existing R&I institutions — the National Science Council and the National Council for Higher Education; the Business and innovation agency BICRO and the Agency for Small Business and Investments, HAMAG. In November 2015 six new centres of research excellence were established and additional resources for them are planned from ESIF funding.

(1) Only 4.5 % of Croatian publications were within the top 10 % most cited publications in 2013, compared to an EU average of 10.5 %
(2) New graduates in science and engineering per thousand population aged 25-34 in Croatia represent 14.4 (EU average 17.6).
(3) Croatia in 2014 had 11 public private co-publications per million population, compared to an EU average of 34.
(4) In Croatia public expenditure on R&D financed by business enterprise amounted to 0.034 % of GDP in 2015 compared to 0.052 % in the EU
Changes have been made with the aim of introducing competitive funding of R&D, but with low impact. These changes include funding research and higher education, and awarding project-based R&D, on the basis of performance; allocating new institutional responsibilities; and a more rigorous evaluation process. Although these reforms can help to strengthen the accountability of public research organisations, the percentage of public funding allocated on this basis remains low. Public spending on R&D as a share of GDP in 2015 reached only 59% of the EU average.

The 'smart specialisation' strategy addresses the need to strengthen the private sector's R&I capacity. The strategy aims to create an innovation-friendly environment for SMEs, strengthen the links between science and business and develop smart skills to meet business needs. This initiative follows the National Innovation Strategy (of December 2014) and a programme for technology transfer at universities launched in February 2015. Additional grant schemes for SMEs were launched in 2016 to complement the R&D investment schemes and to ensure sequencing of innovation policy instruments aimed supporting the commercialization phase of innovation projects. The new tax reform maintains the existing tax incentives for R&D. The National Information System in Science, launched in 2014 to improve programme evaluation, has yet to be completed.

Croatia can build on the use of EU funds to meet its challenge of increasing investment in R&D. Croatia is eligible for a substantial amount of funding for R&D from EU funds over 2014-2020, including a contribution of around EUR 665 million from the European Regional Development Fund. These resources have a key role in stimulating the transition towards a knowledge-intensive economy through targeted capacity building and by bringing together areas of scientific excellence and industry clusters under the smart specialisation strategy.