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References to
Research and Innovation
in the European Semester Country Report 2017

Portugal

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.

Executive summary

School outcomes are improving but the skill level of the labour force, including digital, remains low. Tertiary attainment has stagnated below EU average and higher education offer is scattered. In spite of efforts made, obstacles to more structured university business cooperation and knowledge transfer remain, hampering innovation and the transition to a knowledge based economy.

References to research and innovation

1.1. Research and innovation

Despite some progress, the economy does not make the most of its scientific production and related human resources. R&D intensity fell from 1.58 % of GDP in 2009 to 1.28 % in 2015, diverging further from the EU average of 2.04 % and the national target. The main reason for the decline was a contraction of business enterprise R&D expenditures from 0.75 % of GDP in 2009 to 0.60 % in 2015. Public R&D intensity fell after 2009, but there are signs of recovery (2009: 0.69 %; 2015: 0.66 %). This reduction of R&D investments adversely affected productivity growth¹. Portugal has made much progress in improving its human resources base in science and technology and its scientific excellence. The country produces more science and engineering graduates and has more researchers in the labour force than the EU average (Eurostat). Highly cited scientific publications increased from 7.6 % in 2006 to 9.0 % in 2013 but the country still ranks only 16th in the EU. However, Portugal ranks low (around one fifth of the EU average) on public-private scientific co-publications and patent applications. This shows that there are difficulties in developing technological outputs from R&D activities. Portugal occupies a very low (24th) position as regards the Innovation Output Indicator, which measures the extent to which ideas from innovative sectors are able to reach the market. This constrains the transition towards a more innovation-driven economy.

There is no integrated strategy for cooperation between academia and business to deliver the skills and knowledge needed for innovation. The governance and finance systems of Portuguese universities do not provide the most efficient environment for university-business cooperation and innovation. Career paths in academia are based mainly on publications, and cooperation with the private sector or work within it is seen as a career gap with no impact on career progress². The tertiary education attainment rate for 30-34-year-olds has risen substantially over the past decade. Yet the country ranked only 23rd within the EU in 2015. The high emigration rate of graduates (see Section 4.3) further reduces the number actually reaching the labour market. Moreover, many businesses lack absorption capacity for the highly educated. For the relatively few firms

⁽¹⁾ During the period 2007-2016 total factor productivity has declined and then registered a small recovery (AMECO)

⁽²⁾ The State of University-Business Cooperation in Portugal (2013)

in knowledge-intensive sectors that do have the absorption capacity, universities do not seem to be supplying enough of the skills needed. The Digital Skills and Jobs coalition addresses the issue. The country is among the EUs' worst performers as regards new computer science graduates among the 25-34-year-olds (Eurostat). The increasing demand for ICT professionals is not being met by the current supply³. Firms perceive universities as being too bureaucratic to invest in. Companies contract only a small amount of R&D services from other institutional sectors and R&D spending financed by national business enterprises is only 35 % of the EU average. Additionally, firms do not perceive academic publications as relevant sources of information for innovation (FCT, 2013). Nor are they inclined to take on more qualified human resources such as PhD holders despite the tax incentives in place for companies employing PhD holders⁴. The new diploma 'Fostering Scientific Employment' (Decree-Law 57/2016) was adopted in 2016 with the aim of improving researchers' working conditions and career prospects. This is important in a context of highly unstable research careers.

In spite of the efforts made, there is still a lack of structured coordination between the various incentives for commercialising research outputs. Portuguese regional clusters encourage knowledge and technology transfer between universities and low-medium technology-intensive manufacturing industries. The Recognition of Competitiveness Clusters (Decree 2909/2015) reshaped cluster policy to instigate public-private collaborative partnerships and networks (OECD, 2016). But value added in high-tech manufacturing is only 0.57 % of total value added (EU average 1.69 % 2014 Eurostat). The National Innovation Agency funds R&D programmes that promote cooperation between universities, firms and R&D performing organisations. The National Reform Programme 2016 also includes a set of initiatives to foster knowledge transfer and strengthen the link between R&D and innovation in companies. The 2016 programme for modernising and upgrading polytechnic institutes focuses on matching R&D activities to regional needs. Tax credits to business R&D (SIFIDE) rose between 2006 and 2014 (OECD R&D Tax Incentives). Yet there is no regular and consistent monitoring to assess whether the initiatives are effective.

Framework conditions are not conducive to an innovation-friendly environment, as barriers to competitiveness still persist. Portugal is a "Moderate Innovator" in the European Innovation Scoreboard but ranks in the top 10 in terms of SMEs innovating in-house. The government aims to foster balanced development of the collaborative economy showing willingness to accommodate innovative business models in the regulatory framework. A framework for short-term rental activities for tourists has been introduced, and legislation to enable platforms to provide passenger transport services is being prepared. Portugal stands out from the EU average in entrepreneurial activity, especially in enterprise birth rates and entrepreneurial intention⁵. This is in line with the remarkable progress in "Starting a Business" from the World Bank Doing Business Report 2016. Nevertheless, business survival rates are below 50 % reflecting unfavourable framework conditions for business growth, innovation and scale-up. High-growth innovative enterprises (HGIEs) represented only 0.07 % of firms in 2014, half the EU average and the country dropped 8 positions in the 2016 Global Competitiveness Report. Firms' technological and managerial capabilities are still holding back competitiveness, especially in SMEs (European Commission, 2017c). The National Strategy for Entrepreneurship (*Startup Portugal*) launched in 2016 aims to improve the

³) The study "e-skills in Europe-Portugal" estimates a shortage of 9.600 ICT specialists in 2016, which may expand to 15.000 by 2020

⁴) In 2015 Portugal ranked only 17th in the EU terms of Researchers (FTE) employed by business as % of total employment

⁵) "Framework Conditions for HGIEs" (2017)

business ecosystem, provide alternative ways of financing, and promote the internationalisation of start-ups.

1.2. Additional references to R&I

[4.3.3. Education, p.37]

The low level of skills among the Portuguese labour force is an obstacle to innovation and economic transformation. The Government's new initiative to promote adult education Programa Qualifica – is based, namely, in the establishment of the ‘Qualifica’ centres focused on promoting adult qualification by recognizing, validating and certifying prior learning and competences acquired by adults in different life contexts complemented by vocational education and training adapted to each individual. The revamped ‘Qualifica’ centres, that replaced the previous network of specialized Centres on adult qualification, have been reinforced with upskilled staff. The government has also launched the ‘Qualifica passport’, a new online tool that not only registers the learning and competences acquired by adults, but also allows to understand what the adult lacks in order to achieve a certain qualification. The outcomes of the National Skills Strategy project could help boost efforts to tackle adults' skills gaps. The Vocational Education and Training system further expanded the number of people enrolled and the number of trainings provided in 2016. However, the remaining overlap between programmes undermines the system's efficiency and its effectiveness in terms of labour market integration (European Commission 2016b).

[4.4.3. Business Environment, p.42-43]

Inefficiencies have been identified in the areas of the judicial system, including insolvency framework implementation, public procurement, sector-specific regulations, including energy and transport, the business environment and the innovation framework. Efficiency indicators for civil, commercial and tax litigation remain poor and insolvency court proceedings are still long. Despite progress, there are still shortcomings as regards the transparency and reliability of public procurement data and procedures. Transparency in concession contracts and public-private partnerships is still hindered by contracting authorities' lack of the necessary expertise to manage complex contracts. Reform measures concerning port concessions and the governance model for urban transports have been stalled. The efficiency and sustainability of the electricity sector are challenging mainly due to a still high tariff debt.

Unfavourable framework conditions and inadequate alternative financial incentives continue to curtail Portugal's performance in the area of innovation. Information and communication technologies are lagging behind and the cooperation between business and academia is not strong enough. This is having a negative impact on the innovation capacity of the Portuguese economy.