
JRC SCIENCE FOR POLICY REPORT

From the complete publication:

# RIO Country Report 2015: Cyprus

Chapter:

*Executive summary*

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2016

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JRC101174



**Abstract**

The 2015 series of RIO Country Reports analyse and assess the policy and the national research and innovation system developments in relation to national policy priorities and the EU policy agenda with special focus on ERA and Innovation Union. The executive summaries of these reports put forward the main challenges of the research and innovation systems.

# Executive summary

## Context

The Cypriot economy has been experiencing a sovereign debt crisis, which started with the losses that the local banking system suffered in 2011 from the restructuring haircut of Greek state bonds. Real GDP contracted by 5.4% in 2013 and by 2.3% in 2014. It is estimated to have started growing again by 1.2% in 2015[1].

The fiscal consolidation process over the last few years has reduced budgets in all policy areas, including for public funding for research and innovation. R&D appropriations decreased significantly after 2009 and in particular after 2011, when the sovereign debt crisis fully hit the Cypriot economy. Although cuts in budget appropriations for R&D were more severe than the decline in actual expenditure, the fiscal adjustment process during the sovereign debt crisis has clearly been at the expense of public support to R&D.

At the end of 2014, total GERD was at €82.7m (0.47% of GDP), marking a decrease of 1.3% compared to 2013. Cyprus ranks last before Romania in terms of R&D intensity among all EU member states (GERD has been fluctuating around 0.5% of GDP in the period 2009-2012, less than 1/4 of the EU average). The significant fluctuations of GDP determine to a large extent the evolution of R&D intensity. The R&D intensity target has been set at 0.5% of GDP. Although this target is not planned to be revised after Cyprus has exited the Economic Adjustment Programme (March 2016), there are plans to strongly increase public R&I expenditures until 2020.

To put the issues discussed below into perspective, it has to be stressed that the Cypriot R&I system is not only very small, but also very young. The first public university was established in 1989, the first national research funding programme launched in 1998, and the first R&I strategy finalised in 2004 in the context of EU accession. A comparison of input and output indicators ranks the Cypriot R&I system 6th within the EU-28 in terms of efficiency[2]. Cyprus was rather successful in FP7 project funding, receiving 0.2% of total funding (for comparison, Malta, Luxembourg, Latvia and Lithuania all received 0.1%).

GERD increased from 0.43% of GDP in 2012 to 0.47% in 2014 (latest available data). However, the significant fluctuations of GDP have determined to a large extent the evolution of this indicator over the past few years. Cyprus ranks last in the EU-28 in terms of R&D intensity. BERD stood at 0.08% of GDP in 2014, far below the EU-28 average (1.3%). Business performed 17.3% of total GERD in Cyprus in 2014. Government intramural expenditure (GOVERD) and expenditure on higher education R&D (HERD) accounted for 0.06% and 0.25% of GDP in 2014 (EU-28: 0.25% and 0.47%, respectively). In terms of R&D financing, the Cypriot private sector funded 12.7% of overall R&D expenditure in 2013 (most recent available data). The public share in funding of GERD was 67.7%, and the share of GERD financed from abroad was 19.6%.

Key developments in the R&I system in 2015 were the adoption of the smart specialisation strategy by the Council of Ministers in March, and the release and public consultation of the first national policy document on open access.

Cyprus has a good science base with a research output well above comparable EU Member States. It ranks 11th among terms of number of publications per thousand of population with 1.99 publications, compared to 1.08 for Malta and an EU-28 average of 1.43. The small size of the country has fuelled international co-publications (61.6%, only surpassed by Luxembourg)[3]. The proposed framework programme for public research

[1] European Commission, European Economic Forecast Autumn 2015
[2] Edquist, Charles and Jon Zabala-Iturriagagoitia (2015)
[3] Based on SciVal/Scopus data; see Table 6 in report

funding 2015-2020 allocates €14.5m to cooperation with EU and third countries. The labour market for researchers is highly regulated, with no institutional autonomy.

However, the level of science-industry collaboration is very low in Cyprus. The share of public-private co-publications is 0.7% (EU-28 average: 1.8%). Private funding for public R&D was just €672,000 in 2013 (see Challenge 3).

The identified challenges for Cyprus's R&I system are:

(1) Lack of strategic guidance and evaluation in R&I governance

(2) Low private sector R&I activity

(3) Little knowledge transfer and commercialisation of research results

## R&I Challenges

### Challenge 1: Improve guidance and evaluation at strategic level of R&I governance

Description

The National Council for Research and Innovation (NCRI), composed of six cabinet ministers, is the top-level body in Cypriot R&I governance and responsible for formulating long-term strategy. Since 2007, it has met only once, without taking any policy decisions[4]. Similarly, the Cyprus Scientific Council (CSC), which is the country's main R&I advisory body composed of 19 internationally recognised scientists, has met only a few times since its establishment in 2010, mostly without the necessary quorum to adopt recommendations[5]. Its only formal decision was endorsement of the EU2020 R&I intensity target. As a consequence, R&I governance lacks guidance and vision, as well as a coherent strategy. Funding programmes used to allow for proposal submissions in any subject, which encouraged uptake of R&D activities in many different fields. This was initially intended to activate as strong and diverse research dynamics as possible, but has led to funding being spread thinly over many research areas without regard for the country's competitive advantages and the economy's small size[6].

These shortcomings in strategic governance are compounded by the absence of an evaluation culture at this level. Whereas evaluations of individual proposals and projects are carried out conforming to FP7 and Structural Funds procedures, and are deemed largely efficient [7], tools for strategy and policy design and adaptation are underdeveloped. Systematic programme evaluations or foresight exercises are not being undertaken. This weakens the system's capacity to react to changes in the economic situation or in funding recipients' needs.

Policy response

A National Committee for Research, Innovation and Technological Development (NCRITD, not to be confused with NCRI mentioned in the description above) was created in 2013 to prepare suggestions on a new R&I structure and governance. It presented its report to the government in spring 2014. For top-level governance, it recommended the creation of the post of a Commissioner of Entrepreneurship and Innovation who is to hold political responsibility for R&I strategy and policy, and to be advised by a National Council of Research, Innovation and Entrepreneurship, which designs and monitors R&D strategy.

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[4] Stairway to Excellence expert report Cyprus (http://s3platform.jrc.ec.europa.eu/documents/20182/117536/S2E_Report_CY.pdf)

[5] Ibid.

[6] Smart Specialisation Strategy Cyprus, September 2014

[7] Stairway to Excellence Cohesion Policy and the Synergies with the Research and Innovation Funds Cyprus, Facts & Figures, July 2015

Since 2015, the country's Smart Specialisation Strategy (Cyprus consists of a single region) doubles as the national R&I strategy. It was developed jointly by the Directorate General for European Programmes, Coordination and Development (the main body responsible for research policy implementation), the Research Promotion Foundation (main funding agency) and the Cyprus University of Technology, thus involving also research funders and performers. The strategy was formally submitted to the EC in December 2014 after having passed a peer review[8], and was approved in July 2015. It establishes as thematic priority areas tourism, energy (mainly solar), agriculture/food, construction/building materials, maritime transport, and health; and the cross-sectoral priorities environment, ICT, social innovation and general application technologies[9]. Specific measures and concrete sub-fields are listed under each priority, complemented with sketches of corresponding programmes, indicative budgets and implementation timetables. The strategy is fully compatible with the 2014-2020 Operational Programme for Competitive and Sustainable Growth[10]. It will largely be implemented through the 2015-2020 R&I framework programme ("Desmi"), which was published in July and was expected to be launched in December 2015. The preparation of Desmi involved extensive consultations with stakeholders (public and private universities, public research organisations, enterprises, chambers of commerce, NGOs).

The Cyprus Agency of Quality Assurance and Accreditation in Higher Education has been established in 2015. Its task is to ensure and evaluate the quality of higher education in the country, and to identify weaknesses and disadvantages of the higher education system[11].

Assessment

A political decision is still to be made on how to implement the NCRITD recommendations, making the prospects for swift implementation difficult to assess. On the development of programme evaluation systems and foresight capacities, no tangible progress has been made. However, the establishment of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education is a positive first step in the right direction.

In the absence of a stand-alone national R&I strategy, the Smart Specialisation Strategy represents at least in the shorter term a usable substitute that can guide policy formulation and development. While its choice of priority areas seems very broad, it identifies concrete sub-fields for specialisation and sets out a plan for implementation[12]. This result seems to have been greatly facilitated by the May 2014 peer review, which also led to improvements in plans for how to monitor and measure RIS3 implementation (S3 Platform 2014). Apart from "construction/building materials", which could be a result of path-dependence following the pre-crisis construction boom, the priority areas seem to well reflect Cyprus' competitive advantages and have received favourable reviews from peer evaluators and the EC. The implementation of the smart specialisation strategy might be facilitated by the R&I system's young age, which implies few institutional rigidities.

[8] S3 Platform (2014) RIS3 Peer-Review Report Cyprus
[9] Smart Specialisation Strategy Cyprus, September 2014
[10] Tsipouri, Lena and Sophia Athanassopoulou (2015) RIO Country Report Cyprus 2014
[11] Ministry of Education and Culture (2015) Agency of Quality Assurance and Accreditation in Higher Education. http://www.highereducation.ac.cy/en/cy_agency_quality_assurance_aaccre.html
[12] Tsipouri, Lena and Sophia Athanassopoulou (2015) RIO Country Report Cyprus 2014

**Challenge 2: Strengthen and support private sector R&I activities**

Description

In 2012, Cyprus received a Country-Specific Recommendation to "take appropriate policy measures on the demand side to stimulate business innovation". Whereas the Economic Adjustment Programme agreed in 2013 has shifted attention in the context of the European Semester to macroeconomic stability and the financial system, the problem of low private sector R&I activities persists. Business R&D spending is one of the lowest in the EU and has been continuously decreasing between 2008 and 2012 from €16.7m to €11.9m, although it has recovered during 2013 and 2014 to €14.3m. The Innovation Union Scoreboard puts Cypriot business R&D expenditure at only 5% of the EU median[13].

The reasons for low private R&I investment and demand lie to a large extent in geography and the structure of the economy. Cyprus' peripheral and remote location – far away even of the closest EU Member State, Greece – and the small domestic market (700,000 inhabitants) are a disincentive for high-tech companies' location choices. The service sector dominates the economy (84.5% of Gross Value Added). Whereas some financial service firms may perform well in terms of process innovations, these activities are not measured reliably and R&D intensity of Cypriot service firms is low. Employment in medium-high and high-tech manufacturing was at 0.9% of total employment in 2014, lower than Luxembourg (1.3%), Malta (4.2%) and Estonia (3.5%).

However, there are also institutional reasons for low business R&D activity, among them complex and lengthy procedures in public support programmes, and a policy tradition that favours academia over enterprises' competitiveness. Low awareness among SMEs of support programmes and funding opportunities has also been identified as an obstacle to higher R&D activity[14].

Policy response

A number of instruments have been put in place or are planned to support SMEs' investment in R&D. Among them is a grant programme by the Ministry of Energy, Commerce, Industry and Tourism for co-funding R&I activities with a budget of €17m for 2015-2017 (which exceeds current total annual business R&D expenditure). Further initiatives launched in 2015 include Business Innovation Centres, which will provide advisory services to public and private businesses for the development of competitive products, the creation of clusters in ICT, transport, viniculture and construction, and an innovation voucher system ("Innovation Packages") providing limited funding support (€5,000-€20,000) for joint ventures, start-ups or collaborations with public research organisation. All direct funding instruments are to be co-financed by Structural Funds. Core R&D Structural Funds amounted to €42m in the period 2007-2012 (for comparison, this equals about half of Cyprus' 2012 GERD). "Innovation Houses" will be established from 2015 to provide entrepreneurship training and guidance to the unemployed and students. The scheme is expected to help create 40 new SMEs. In June 2015, RPF issued a call for expressions of interest for participating in the planned programme "Enhancing the Innovation Management Capacity of Cypriot SMEs"[15].

[13] European Commission, Innovation Union Scoreboard 2015

[14] Tsipouri, Lena and Sophia Athanassopoulou (2015) RIO Country Report Cyprus 2014; Smart Specialisation Strategy for Cyprus, Final Report, Nicosia, March 2015

[15] RPF – Research Promotion Foundation (2015) Enhancing the Innovation Management Capacity of Cypriot SMEs. http://www.research.org.cy/EL/news/3830.html

Indirect support has been introduced in 2014 in the form of tax exemptions for R&D and innovation expenses. To be eligible, companies must have allocated at least 10% of their operating expenses on R&D over the past 3 years, or be vetted by an expert committee as being capable of producing innovative/improved results (Tsipouri and Athanassopoulou 2015). Estimates of foregone tax revenue from this measure are currently not available.

Assessment

To address the structural economic deficiencies, a suitable way forward seems to be the renewal and expansion of productive capacities in high-tech niche areas. Some of the above instruments, notably the clusters initiative, have the potential to contribute to such a development.

The impacts of the new direct funding measures need to be evaluated in a few years, for which evaluation capacity might have to be strengthened (see Challenge 1). Expectations should remain realistic regarding the extent of innovative activities of SMEs to be created with the help of Innovation Houses, as the establishment of many of those firms may be driven more by the difficulty to find other employment than by innovative business ideas.

It is also too early to assess the effect of R&D tax exemptions, but the eligibility rules leave room for some doubt whether the incentive can induce SMEs to newly take up R&D activity. Lastly, putting more emphasis on raising SMEs' awareness of available support measures could be valuable to improve uptake of R&D activities.

**Challenge 3: Intensify knowledge transfer and commercialisation of research results**

Description

While Cyprus occupies a mid-field position in turnover from innovation (rank 14) and SMEs innovating in-house (rank 15), these innovations are incremental and largely marketing/organisational innovations in the service sector (especially in financial intermediaries)[16]. Similarly, Cyprus performs reasonably well in academic research output (11.83% of top-10% most highly cited publications, higher than Estonia or Malta). However, exploitation of knowledge and research results is weak, as the PCT applications indicator in the IUS shows (18% of the EU median). Science-business cooperation is low, with only 4.6% of innovative companies cooperating with universities or public research organisations. The country's high score on community trademarks is largely due to the existence of an IPR Box scheme (see "Policy response" below).

Support for science-based entrepreneurship is very weak. An existing incubator scheme does not receive funding anymore, and the establishment of a Science and Technology Park has been postponed several times for lack of a real estate investor. The supply of venture capital or business angel funding, which could support university spin-offs, is almost negligible (business angel investments totalled €600,000 and were concentrated in 2 companies in 2013; data on VC is not available).

Further contributing to this situation is a lack of awareness and underestimation among SMEs of the benefits they can reap from cooperation with research organisations[17].

Policy response

6 Industry Liaison Offices have been created at Cypriot universities until 2014 to facilitate knowledge transfer, among other means by placing university graduates in companies. The Research Promotion Foundation, Cyprus' principal R&I funding agency, runs a Business Support Centre that also provides intermediary services for knowledge

[16] European Commission, Innovation Union Scoreboard 2015.

[17] Tsipouri, Lena and Sophia Athanassopoulou (2015) RIO Country Report Cyprus 2014; Smart Specialisation Strategy for Cyprus, Final Report, Nicosia, March 2015

and technology transfer. The NCRITD report on improving R&I governance (see Challenge 1) recommended the establishment of a National Knowledge Transfer Office (NKTO), with the task to facilitate collaboration between all potential public and private R&D performers to promote commercialisation of R&D results. A business plan for the NKTO has been completed in March 2015 and an accompanying legal study was being prepared in early 2016.

In 2014 the Research Promotion Foundation started to implement support measures for the development of institutional IPR Policies in nine major academic and research institutions in Cyprus. Isis Innovation, the Technology Transfer Office of the University of Oxford, has been contracted to provide consulting and coaching services to the participating organisations. By end-2015, each institution had formulated a "Draft Institutional Policy Document for IPR Management", which are currently awaiting formal adoption.

In 2012 Cyprus introduced the Intellectual Property Rights Box. It provides for tax exemption of dividends resulting from IP exploitation, and 80% tax deduction of profits from selling IP rights. By setting up a Cyprus International Trust, total tax exemption of IPR income can be achieved, provided that the owner of the shares held by the trust is a resident in Cyprus.

Assessment

To some degree, commercialisation of research results can only be improved if the private sector's low demand for R&D is addressed (see Challenge 2). Given that most parts of the country's R&I system are very young, as explained in the introduction, it might be unrealistic to expect a rapid improvement in the smoothness of science-business interactions. New support schemes have not been in place long enough to robustly assess their effectiveness.

A formal assessment of the IPR Box's effect on research and innovation activities has not been carried out yet, but so far it seems that the scheme merely encourages transfers of IPR acquired elsewhere to a Cypriot trust, rather than setting up R&D activities in Cyprus proper. One indication backing this assessment is that most top patent applicants are IPR management holdings[18].

[18] WIPO (2013) Statistical Country Profiles Cyprus