



# JRC SCIENCE FOR POLICY REPORT

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## RIO Country Report 2015: Austria

Chapter:

*Executive summary*

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**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

The report offers an analysis of the R&I system in Austria for 2015, including relevant policies and funding, taking into account the priorities of the European Research Area and the Innovation Union. The report was prepared according to a set of guidelines for collecting and analysing a range of materials, including policy documents, statistics, evaluation reports, websites, etc. The quantitative and qualitative data is, whenever possible, comparable across all EU Member State reports. The report contents are partly based on the RIO Country Report 2014 (Cuntz 2015).

### Context

The Austrian economy has weathered the financial crisis relatively well, but GDP growth has been stagnating until 2014. It picked up 2015 (0.9%)<sup>1</sup> and is forecast to reach 1.5% in 2016.<sup>2</sup> Although still rather low compared to other EU Member States, unemployment has risen between 2012 and 2014 from 4.9% to 5.6%.

In June 2014, the Austrian parliament adopted a package of measures with a net budget reduction effect totalling nearly €553m for the years 2014 to 2018. In March 2015, the Austrian federal government furthermore adopted a tax reform package intended to bring €5b in relief to workers subject to income tax. In connection with the tax reform, spending cuts totalling €1.1b were adopted with regard to grants/subsidies and administration expenditures. In addition to these budgeted cuts, the resolution or restructuring of nationalised and partly-nationalised banks remains a severe burden on the public budgets.

The policy fields of education and research have been least affected by the budget consolidation measures. Despite budget reductions for some funding agencies, RPOs and R&D appropriations in some federal ministries' budgets, total public R&D expenditures are planned to slightly increase in 2016 compared to 2015. Competitive funding to universities will increase from €300m to €750m, to universities of applied sciences from €265m to €282m, and the "research premium" tax incentive will rise from 10% to 12%. Austria thus largely followed principles of smart fiscal consolidation with respect to R&I expenditures, which is only the case for about half of all EU Member States.

Austria has a strong and well-developed R&I system. In 2013, the economy and science portfolios were merged into the new Ministry for Science, Research and Economy. This institutional change has been deemed largely beneficial by many stakeholders, in particular since R&I issues seem to be allocated increasing prominence in economic policy making.<sup>3</sup>

GERD increased steadily from 2.81% in 2012 to an estimated 3.01% in 2015.<sup>4</sup> Only three EU Member States (the innovation leaders Sweden, Finland and Denmark) show higher current GERD per GDP. BERD as a share of Austrian GDP stood at 2.11% in 2014, significantly higher than the EU-28 average (1.3%). Government intramural expenditure (GOVERD) and expenditure on higher education R&D (HERD) accounted for 0.13% and 0.73% of GDP in 2014 (EU-28: 0.25% and 0.47%, respectively). In terms of R&D financing, the Austrian private sector funded 46.6% of overall R&D expenditure in 2014 and an estimated 47.2% in 2015. The public share in funding of GERD was 37.7% in 2014 and an estimated 37.3% in 2015. The share of GERD financed from abroad was 15.2% in 2014 and an estimated 15.1% in 2015. It originated mainly from MNEs with Austrian subsidiaries, but also from EU funding sources.

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<sup>1</sup> BMFW 2015b

<sup>2</sup> European Commission 2015.

<sup>3</sup> Cuntz 2015.

<sup>4</sup> Statistik Austria 2015.

The foreign share of GERD financing has been slowly but steadily decreasing in relative terms in the last few years (2005: 18.0%). The Austrian EU2020 target for R&D intensity of 3.76% of GDP is considered ambitious despite the steady increase of GERD, especially given the limited economic growth forecasted for the coming years and the pressures on public budgets in terms of fiscal consolidation.<sup>5</sup>

Key developments in the R&I system in 2015 included:

- New guidelines for RTI funding (see section 3.4)
- Appointment of new members to the Austrian Council for Research and Technological Development and the Austrian Science Board
- Publication of Research Action Plan addressing issues such as promoting researchers' careers, facilitating private financing of research, and improving the innovation potential and entrepreneurial spirit of universities
- Kick-off of several RTI strategy processes (e.g. open innovation; RTI and bio-economy; strategy for humanities and social sciences)

Austria's research base performs relatively well in terms of excellence orientation, but still lags behind those of comparable countries like the Netherlands, Belgium or Switzerland. The country's share of publications in the top 10% most cited publications increased from 12% in 2000 (full count) to 15.62% in 2010 (EU: 12.25%). Austria's share of public funding allocated to transnationally coordinated research was slightly below 5% of GBAORD (2010), higher than the EU average of 4.27%. Austria's labour market for researchers is fairly open and characterised by a high institutional autonomy, in particular as regards HEIs and other public research organisations.

Knowledge and technology transfer as well as science-industry collaboration are well established in Austria, and a plethora of support measures exists to further improve cooperation, with a particular focus on involving SMEs to a stronger extent. The share of public-private co-publications in Austria is 3.1% (EU-28 average: 1.8%). Several schemes support facilities where academic and industry researcher's work together and a publicly funded industrial PhD programme placed its first call in 2014.

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

- (1) Moderate effectiveness of public support for business innovation
- (2) Supply shortage of private equity, especially venture capital

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<sup>5</sup> Rat für FTE 2015.

## R&I Challenges

### Challenge 1: Improve effectiveness of public support for private-sector innovation

#### Description

The Austrian private sector is strong in R&D, with BERD having grown continuously in absolute terms from €5,520m in 2010 to €6,963m in 2014. The country is ranked 7th in business R&D expenditures.<sup>6</sup> Employment in medium- and high-tech manufacturing is comparatively high at 5.8% (Netherlands: 2.7%, Belgium: 4.7%, Ireland: 5.2%). Given these indicator values, the innovation performance of the private sector has been somewhat disappointing.<sup>7</sup> Austria ranks only 23rd in non-R&D innovation expenditures.<sup>8</sup> In the Innovation Union Scoreboard, Austria has slid down continuously from 8th to 11th rank between 2011 and 2015.<sup>9</sup> Turnover from innovation as percentage of total turnover has fallen from 13.6% in 2006 to 9.8% in 2012, a drop to which services contributed slightly more than industry. Lastly, Austria is in the lower third of countries in terms of sales of new-to-market and new-to-firm innovations (rank 22).

The negative trend of Austria's innovation performance is despite an array of public support instruments for private R&I which has been built up over the past two decades. There has been a proliferation in measures, supporting in particular SME innovation and cooperation between public research institutions and SMEs. This appears to have led to a certain degree of fragmentation, spreading available funding over a plethora of instruments.<sup>10</sup> Although most older measures have been evaluated and received favourable assessments individually, overlaps or potential synergies between them have mostly been left unexplored, and coordination between initiatives has been limited.<sup>11</sup>

Analysts have also speculated that modest efficiency could be a consequence of the substantial shift from direct to indirect support during the past decade.<sup>12</sup> The share of tax incentives for R&D expenditures in the policy mix has increased by 42% from 2006-2011 (latest available year).<sup>13</sup> In 2011, tax incentives were consolidated into a single unified tax refund instrument, the research premium ("Forschungsprämie"). Up to 10% of a company's R&D expenditure (including up to €1m for extramural research) can be deducted from taxable income, and carry-over and refund is allowed. Foregone tax revenue was €572m in 2012, €377m in 2013 and €495m in 2014.<sup>14</sup> The strong increase was partially at the expense of funds for direct support, which may have reduced the funding system's capability to respond flexibly to specific and changing needs.<sup>15</sup> Furthermore, 74% of indirect funding went to large enterprises in 2014 (77% in 2012), which has instilled a debate whether the instrument is effective in its main aim to increase R&D activity of SMEs.<sup>16</sup>

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<sup>6</sup> European Commission 2014.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> European Commission 2015b, 2014b, 2013, 2011. It should be noted however that there were slight changes in methodology between IUS issues, which may have had an influence on rankings.

<sup>10</sup> European Commission 2015c.

<sup>11</sup> Cuntz 2015.

<sup>12</sup> Cuntz 2015.

<sup>13</sup> OECD 2015.

<sup>14</sup> [http://www.parlament.gv.at/PAKT/VHG/XXV/AB/AB\\_04890/imfname\\_442347.pdf](http://www.parlament.gv.at/PAKT/VHG/XXV/AB/AB_04890/imfname_442347.pdf); last accessed on 2 February 2016.

<sup>15</sup> Cuntz 2015.

<sup>16</sup> <http://derstandard.at/2000021530709/Drei-Viertel-der-Forschungspraemie-geht-an-Grossbetriebe>; last accessed 2 February 2016.

## Policy response

To support private R&I activities broadly and indiscriminately, the research premium will be increased from 10% to 12% in 2016. The application procedure, which includes certification of the applicant firm by the Austrian Research Promotion Agency (FFG), has been further simplified in 2013 and 2014 to induce more SMEs with low administrative capacity to apply. An evaluation of the instrument's effectiveness had been postponed during 2015,<sup>17</sup> but is now likely to take place in 2016.

Direct support instruments have been streamlined to a certain degree over the past years. Common funding rates have been introduced, administrative procedures simplified and reporting requirements harmonised across instruments. On the other hand, although some measures that have reached the end of their budgeting period have been discontinued, FFG and AWS still manage a large portfolio of instruments that provide support for private R&D and innovation activities.

New initiatives in the past few years have increasingly focused on improving knowledge transfer and science-industry cooperation in order to boost private sector innovation performance. Several programmes have been expanded where companies conduct applied and fundamental research jointly with public research institutes (COIN, Christian-Doppler-Laboratories, Laura-Bassi-Centres). Additional Competence Centres for Excellent Technologies (COMET) are planned to be set up, a scheme which has received favourable evaluation results.<sup>18</sup> Their role is to facilitate knowledge transfer and cutting-edge private R&D through collaboration between science and industry in jointly defined long-term research programmes. In order to improve commercialisation of research results, regulation on IPR of publicly funded research is currently under revision. The development of a comprehensive national strategy on intellectual property is expected for 2016.<sup>19</sup>

The regional smart specialisation strategies of Austria's Bundesländer contain the Lead Institution Initiative, which aims to empower research institutes to become central nodes of regional innovation networks including business, regional policy makers, and civil society. The intention is to grow dense local or regional networks that are able to create and exploit synergies from the individual strengths of participants. The RIS3 process has been somewhat protracted in Austria. Whereas both the federal and Bundesländer governments have been quite active in contributing to peer reviews of other regions, no Austrian region has undergone a peer review to date. Unclear allocation of competences for strategy implementation and spending between the federal and the Land level has been an obstacle in the approval process, and has not yet been entirely resolved. The contribution of Structural Funds for the period 2014-2020 to the relevant Operational Programme that includes R&I is relatively low (€536m), and has decreased compared to the previous programming period.

## Assessment

The mere fact that large companies received the biggest share of the research premium does not in itself mean that it fails to induce R&D investment in SMEs. However, the additionality of the scheme has never been assessed. A comprehensive evaluation of the instrument would be important to determine its effectiveness in boosting private R&D and whether the substantial shift from direct to indirect support was justified. However, the postponement of the evaluation to 2016 carries also the advantage of having produced further data points in a relatively short time series, which might allow for somewhat more robust results.

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<sup>17</sup> Cuntz 2015.

<sup>18</sup> Cuntz 2015.

<sup>19</sup> Ibid.

The multiple instruments to support knowledge transfer and science-industry cooperation have received mostly favourable evaluations regarding their effectiveness,<sup>20</sup> but their comprehensive impact on Austria's private innovation performance has so far been modest. A stronger focus on innovation instead of R&D, as well as further consolidation and streamlining of direct support instruments, might advance the system's efficiency.

The regional smart specialisation strategies and the Lead Institution Initiative hold significant promise for addressing structural weaknesses in the country's R&I system. The latter was highlighted as a best practice for RIS3 implementation by an EC expert panel.<sup>21</sup> However, a clear definition and implementation of multi-level coordination and competences seems essential for the strategies' eventual impact on regional private R&I capacity. Moreover, indicators and mechanisms for monitoring RIS3 implementation still have to be developed.

## **Challenge 2: Increase supply of private equity, especially venture capital**

### Description

In comparison with other Member States of similar innovation capacity, Austria's equity financing system is underdeveloped.<sup>22</sup> The VC market is small with a total investment volume of €65m in 2013. This represents an increase from 2012 (€43m), but is still not back at 2011 levels (€94m).<sup>23</sup> Total private equity investments in 2013 stood at 0.09% of GDP, which is far below the EU average (0.28%), and considerably lower than in other innovation followers like the Netherlands (0.48%), Ireland (0.28%), or Belgium (0.24%).<sup>24</sup> The IUS 2015 puts Austria at 28% of the EU median in VC investments, a decrease of 3.6% from 2014. Business Angel investments in 2013 were also low (€2.9m) compared to the Netherlands (€9.8m), Ireland (€13.2m) or Belgium (€10m).<sup>25</sup>

The low supply of private equity is not particularly pertinent for the scale-up phase (which is often perceived to be the most problematic one in Europe), but affects all development stages of young companies. The distribution of total PE investment in 2013 was 20% for seed/start-up, 42% for growth/scale-up, 27% for exit and 11% for replacement.<sup>26</sup> Difficult equity financing conditions are only partially counterbalanced by bank lending: The share of firms with a demand for credit that did not get a bank loan increased from 20% in 2013 to 27% in 2014.<sup>27</sup>

These public initiatives are able to leverage private VC only to a very limited extent, partially due to unfavourable regulatory framework conditions. Regulation for retail investment imposes considerable obligations on the equity issuer concerning information disclosure and investor protection.<sup>28</sup> Administrative processes for IPOs are also cumbersome,<sup>29</sup> which reduces the attractiveness of public listings as exit opportunity for VC investors.

### Policy response

In 2015 the Ministry for Science, Research and the Economy issued the "Land of Founders" ("Gründerland") strategy stating the ambitious goal to turn Austria into the most attractive location for start-ups in Europe. Stakeholders from the entrepreneur and venture capital communities heavily contributed to formulating the strategy.

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<sup>20</sup> Ibid.

<sup>21</sup> European Commission 2014c.

<sup>22</sup> European Commission 2015c.

<sup>23</sup> Cuntz 2015.

<sup>24</sup> EVCA 2015.

<sup>25</sup> EBAN 2014.

<sup>26</sup> AVCO 2014.

<sup>27</sup> OECD 2015b.

<sup>28</sup> Jud et al. 2013.

<sup>29</sup> Cuntz 2015.

A new law on crowdfunding passed in 2015 has significantly liberalised and clarified regulation of retail investment. Legal reforms are also planned to simplify IPOs. In 2014, the Austrian federal promotional bank AWS established AWS Equity Finder, a capital brokerage platform, to facilitate contact between business angels, venture capitalists and crowdfunding and crowd-investment platforms.

Aside from improving framework conditions, the Austrian government also provides direct support to boost venture capital supply. Two public venture capital funds have been launched by Austria Wirtschaftsservice Gesellschaft (AWS) in 2013 to facilitate market creation and leverage private VC investment. They focus on early-stage ("Gründerfonds", €65m) and later-stage investments (€45m). Since 2013 AWS also runs a semi-public fund that co-finances business angel investments with a 1:1 ratio (total public capital €22.5m). This initiative includes also the provision of know-how and networking opportunities to business angels. For the early stages in the start-up process of technology-oriented (potential) companies, AWS administers the instruments "Seedfinancing" and "PreSeed".

### Assessment

There seems to be strong political will to further improve framework conditions for equity financing, as shown for example by the Land-of-Founders strategy, which sets ambitious goals and identifies areas for action. Nevertheless, concrete measures still have to be derived from the strategy. It is still too early to assess the impact of the new crowdfunding law.

Early signs for the public (-private) venture capital funds are positive: The project volume of the AWS "Gründerfonds" increased from €1.6m in 2013 to €26.2m in 2014. The AWS business angel fund raised fresh venture capital of more than €20m. In 2014, 10 pre-seed and 17 seed-financing projects with thematic priorities in ICT, physics and life sciences were funded with €12.5m. However, these instruments are still too young to assess their impact in terms of the longer-term survival rate of companies that have received investment.

