

This publication is a Science for Policy report by the Joint Research Centre (JRC), the European Commission's science and knowledge service. It aims to provide evidence-based scientific support to the European policymaking process. The scientific output expressed does not imply nor prejudice policy positions of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of this publication.

Contact information

E-mail: JRC-B7-NETWORK@ec.europa.eu

JRC Science Hub

<https://ec.europa.eu/jrc>

JRC105890

EUR 28491 EN

PDF	ISBN 978-92-79-66103-7	ISSN 1831-9424	doi: 10.2760/398605
-----	------------------------	----------------	---------------------

Luxembourg: Publications Office of the European Union, 2017
© European Union, 2017

Reproduction is authorised provided the source is acknowledged.

How to cite: Bučar, M, González Verdesoto, E; *RIO Country Report 2016: Slovenia*; EUR 28491 EN;

doi: 10.2760/398605

The reuse of the document is authorised, provided the source is acknowledged and the original meaning or message of the texts are not distorted. The European Commission shall not be held liable for any consequences stemming from the reuse.

All images © European Union 2017 except for the ERA Dashboard image on the first page by Niels Meyer licensed under CC BY 2.0

Research and Innovation Observatory Country Report 2016 Slovenia

The 2016 series of the RIO Country Report analyses and assesses the development and performance of the national research and innovation system of the EU-28 Member States and related policies. It aims at monitoring and evaluating the EU policy implementation as well as facilitating policy learning in the Member States.

Table of Contents

Foreword.....	3
Acknowledgements.....	3
1. Main R&I policy developments in 2016.....	5
1.1 Focus on National and Regional Smart Specialisation Strategies	5
2. Economic Context	6
2.1 Structure of the economy	6
Business environment	6
2.2 Supply of human resources.....	7
3. Main R&I actors	8
4. R&I trends	8
4.1 Public allocation of R&D and R&D expenditure	9
4.2 Private R&D expenditure.....	11
4.3 Public sector innovation and civil society engagement.....	12
5. Innovation challenges.....	13
5.1 Challenge 1: Ensure the sustainability of R&D&I funding.....	13
Description	13
Policy response	13
Policy Assessment.....	13
5.2 Challenge 2: Development of a well co-ordinated and transparent R&I governance.....	14
Description	14
Policy response	14
Policy Assessment.....	15
5.3 Challenge 3: Improve the links between R&D&I investment and performance	15
Description	15
Policy response	15
Policy Assessment.....	16
6. Focus on creating and stimulating markets.....	16
References	18
Abbreviations.....	21
Factsheet	22

Foreword

This report offers an analysis of the R&D&I system in Slovenia for 2016, including relevant policies and funding, with a particular focus on topics relevant for EU policies. The report identifies the main challenges of the Slovenian research and innovation system and assesses the policy responses implemented. It was prepared according to a set of guidelines for collecting and analysing a range of materials, including policy documents, statistics, evaluation reports and online publications. The quantitative data are, whenever possible, comparable across all EU Member State reports. Unless specifically referenced all data used in this report are based on Eurostat statistics available in January 2017. The report contents are partially based on the RIO country report 2015 (Udovič, Bučar, Hristov, 2016).

Acknowledgements

Comments from DGs Research and Innovation and Regional and Urban Policy and DG JRC colleagues, as well as feedback from the Slovenian Ministry of Education, Science and Sport are gratefully acknowledged.

Authors

Maja Bučar, Centre of International Relations, Faculty of Social Sciences, University of Ljubljana (Ljubljana, Slovenia)

Elena González Verdesoto, European Commission, Directorate-General Joint Research Centre, Unit B.7, Knowledge for Finance, Growth & Innovation (Brussels, Belgium)

HIGHLIGHTS

- Slovenia's real GDP continued increasing in 2015, with positive forecast for 2016 and 2017.
- The country had an upward trend in gross domestic expenditure in R&D until 2013, when it stalled and then dropped in 2015 to 2.21% of GDP.
- The Operational Programme earmarks €1b to instruments in the area of R&D&I, €0.8b to the promotion of entrepreneurship and €0.05b to human resources in the R&D&I area
- The government has published a first call to co-finance research programmes/projects under the Smart specialisation strategy in the spring of 2016 and more calls were published in the fall of 2016
- The preparation of the Law on Research and Innovation in line with the 2011 Research and Innovation Strategy of Slovenia is still an on-going process. However, it has been singled out as one of the main areas of policy activity for 2016/17.

MAIN R&I POLICY CHALLENGES

- **Ensure the sustainability of R&D&I funding.** Total R&D expenditure grew until 2013, but since then it stalled or decreased, mainly due to the reduction of the government's R&D budget and the end of the EU's programming period (2007-2013).
- **Development of a well-co-ordinated and transparent R&I governance.** A modern, transparent, well-coordinated and comprehensive national innovation system has been a challenge for Slovenia for a number of years. The 2011 Research and Innovation Strategy tried to overcome this, but most the measures planned have not yet been fully implemented.
- **Improve the links between R&D&I investment and performance.** Evidence suggests that in terms of productivity (innovation performance) Slovenia is below the EU average.

MAIN R&I POLICY DEVELOPMENTS IN 2016

- Whereas some major policy developments took place in precedent years, 2016 has mainly been about implementation, with the publication of the first calls of the Slovenian Smart Specialisation Strategy and the set-up of Strategic Research and Innovation Partnerships in the nine specialisation areas.

1. Main R&I policy developments in 2016

Beginning of the implementation of Smart Specialisation Strategy (RIS3) (04/2016)

The first call under RIS3 was launched in spring 2016 with two sub-calls: one for the implementation of the R&D programmes with technology readiness levels 3 to 6 (TRL 3-6) under the Ministry for Education, Science and Sports (MESS), and the second one for the projects targeting TRL 7-9 under the Ministry for Economic Development and Technology (MEDT).

1.1 Focus on National and Regional Smart Specialisation Strategies

Description and timing: The [Smart Specialisation Strategy](#) was adopted in Slovenia on 20th September 2015 and approved by the European Commission in November 2015. RIS3 or in Slovenian S4 ([Slovenian Smart Specialisation Strategy](#)) presents three broad priority areas for the next financial period: healthy living and working environment, natural and traditional sources for future and S(INDUSTRY) 4.0. These are further elaborated into specific priority areas, nine of them in total: smart cities and communities, smart buildings and home with wood chain, materials as final products, mobility, health/medicine, factories of the future, networks towards a circular economy, sustainable food production and sustainable tourism.

New developments: The first call was launched in spring 2016 with two sub-calls: one for the implementation of the R&D programmes with technology readiness levels 3 to 6 (TRL 3-6) under the Ministry for Education, Science and Sports (MESS), and the second one for the projects targeting TRL 7-9 under the Ministry for Economic Development and Technology (MEDT).

In 4th quarter 2016 the call for the establishment of Strategic development and innovation partnerships was launched and completed along with a call for competence centres for development of human resources to support the RIS3 priority areas.

An important part of the governance system will be the national innovation platform, bringing together development-related stakeholders to monitor the RIS3 implementation and suggest adjustments. A key role is planned for strategic development and innovation partnerships, which will facilitate system-wide and long-term cooperation of stakeholders within an individual area, namely cooperation between stakeholders, with other entities, and cooperation with the state (GODC, 2015). The aforementioned call for partnerships included an invitation to the partnerships to submit their action plan. If approved, they will be then invited to submit a more detailed work programme and be entitled to its co-financing.

With the approval of RIS3, the ability to draw on ESIF has been made available to other agencies as well. In this light, in June 2016, the Agency for Entrepreneurship, Internationalisation, Foreign Investments and Technology (SPIRIT) issued a call in the area of entrepreneurial support in order to apply for registration as a "subject of support environment" (SPIRIT, 2016a).

Several calls from SPIRIT are also expected in the area of entrepreneurship promotion, all supported by ESIF and based on a principle of co-financing (business support infrastructure organisations, innovation process vouchers, internationalisation, strengthening the innovation potential of enterprises; "seal of excellence" co-financing; pilot projects; etc.) (MEDT, 2016b). The call for co-funding of the activities of technology parks, business and university incubators and a call for process voucher were published in October, with funding to be available in 2017 and 2018.

Outstanding issues: In the period 2016 – 2018, €1.9b are planned to be invested through the Operational Programme with contributions from the EU, the Slovenian government but also private financing. Investments will be done in accordance with the

thematic priorities of the Smart specialisation strategy (€1b on R&D&I, €0.8b on entrepreneurship and €0.05b on human resources).

It is worth to be noted that the Managing Authority governance system for the use of the ESIF funding 2014-2020 is being set to align the activities supported within all the ESIF Thematic Objectives (TOs) with the agreed RIS3 priorities. Several instruments and measures, depending on their goals in the field of R&I, require co-funding from the beneficiaries and will therefore also trigger private investments.

2. Economic Context

Slovenia's GDP is expected to grow by 2.2% in 2016, with all components except investment contributing to growth, mainly due to the end of the programming period of EU funding. According to DG ECFIN's autumn forecast, growth in 2017 and 2018 is expected to be broad-base with a further shift from external to domestic demand. The positive economic trends surpass the careful optimism of previous 2016 forecasts (IMF: 1.9%; IMAD: 1.7% and EC: 1.7%).

In 2014, the productivity increased to 65% of the EU's average, but the gap still remains significant and is in fact bigger in more technologically advanced sectors (IMAD, 2016a).

Slovenia had an unemployment rate of 9.7% and 9% in 2014 and 2015. In 2016, according to ECFIN forecast, it will go down to 8.4%.

When it comes to government debt, it is expected to have peaked at 83.1% of GDP in 2015 and the forecasts foresee 80.2% for 2016 and 78.3% in 2017 (ECFIN 2016).

2.1 Structure of the economy

Slovenia is predominantly a service economy, with nearly 65% of value added deriving from services, and 23.5% from industry (of which 20.1% of GDP comes from manufacturing). While the value added of knowledge-intensive services as a share of the total value added was 35.5% in 2014, high and medium tech manufacturing's value added as a share of total value was 10.4%.

The export sector is an important driver of economic growth and, gradually, the composition of exports is improving. Still, the technological level of Slovenian exports lags behind the EU average. Further economic growth increasingly depends on the technological upgrading of the manufacturing and service sectors (IMAD 2016).

Micro businesses dominate the business landscape: in 2015, 94.8% of the firms had 0-9 employees. On the other end, only 0.2% of the total number of firms had more than 250 employees (SBA 2016).

In 2014, the share of foreign controlled enterprises increased to 5.1% and is expected to raise in view of the privatisation efforts. That same year, these foreign affiliates operating in non-financial activities employed 22% of employees in all enterprises (SORS 2016b). They generated 29% of the turnover, 24% of the value added and 24% of the investment of all enterprises in Slovenia. Their R&D expenditure amounted to 30% of the total businesses' R&D expenditure. Relatively high figures can be explained by the fact that foreign affiliates are mostly larger enterprises.

Business environment

The World Bank's "doing business" index ranked Slovenia 30th in 2017 for the ease of doing business (among 189 countries). According to their analysis, the major strengths of the business environment are in the field of "starting business" (responsiveness & low cost) and trading across borders (WB, 2017). On the other end, one of the major

weaknesses that has often been cited by other sources as well (see World Economic Forum's global competitiveness index) is linked to the access to finance. Other problematic factors that remain are construction permits, enforcing contracts and other administrative barriers (ibid.).

The level of private equity activity in Slovenia is very low, below 0.03% of GDP (Invest Europe 2016). As noted by the IMAD (2016), after a modest beginning, start-up entrepreneurship is gaining momentum. In 2015, they collected €114m, which is twice as much as the year before and as much as in the previous seven years together (Močnik, D. and Rus, M. 2016).

In 2015, the first privately-funded entrepreneurial accelerator was established and is successfully implementing several programmes (smart cities, smart living and health, commercial high tech).

At the beginning of 2016, a first platform for crowdfunding¹ was also established, suggesting the appearance of new dynamics, moving from traditional financial structures to other innovative ways of funding entrepreneurial ideas.

2.2 Supply of human resources

The share of tertiary-educated people in Slovenia reached the EU average in 2015 with 30.2%, a significant leap from 14.8% in 2002 (IMAD 2016) and the result of nearly half of the population aged 20-24 enrolling in tertiary studies. The share of science and technology graduates is also increasing and is at the level of 26% of all graduates². This seems to have had a positive effect on the skills mismatch, and the European Commission's country report on Slovenia (2016) acknowledges so: "The majority of vacancies continue to require lower formal education but skills mismatch appears to be less pronounced."

The R&D sector employed 14,225 people (in full time equivalent) in 2015 (preliminary figure). Of these, 7,900 are classified as researchers (Eurostat, 2016). The decline in numbers from previous years (8,884 in 2012) was higher in the government sector as a result of lower financing, partly due to cuts in the budget and partly due to the end of several instruments funded by the EU structural and investment funds (ESIF). This might have fed into the migration trend of high educated people, which has increased in recent years, both towards the EU as well as globally (Bevc & Ogorovec 2014). The business sector, which accounts for 54% of all researchers, was quite stable.

What can be drawn from the statistics is that the employment decline was disproportionately high for young researchers (age group 25-34) in HES and the government sector, suggesting that the budget cuts impacted them mostly. This is especially worrisome in the long-run. The IMAD Development Report (2016) assessed that "the reduction of jobs for young researchers lowers the efficiency of public funds invested in their education, and at the same time jeopardises the future development of research institutions, their international competitiveness and transfer of knowledge to the business sector, and deepens the gap in the age structure of researchers."

The consequences might also be broader as several analyses (Bučar, Stare, Udovič 2014; Bučar and Rojec, 2014) revealed that the young(er) researchers are much more open to cooperation with business sector and actively seek options for commercialisation of research, including creation of spin-offs.

The share of women in the R&D&I system has been stable for over a decade (around 35% of the total) and the 2011 Research and Innovation Strategy of Slovenia (RISS) 2011–2020 commits Slovenia to "adopt measures, to change legislation, and to focus

¹ <https://www.facebook.com/groups/sloveniacruzdfunding/>

² Even higher is the cumulative share of doctors of science and technology, where the figure was 48.6% of all with doctoral degree (IMAD, 2016).

attention to the role of gender in research, in pedagogic work, and in management of institutions". The proposed Action plan with this target has not been prepared yet (RISS Implementation Report, 2016, p. 86).

3. Main R&I actors

In Slovenia, the **Ministry of Education, Science and Sports (MESS)** is in charge of R&D policy, especially when it comes to research activities in the public sector, while the **Ministry of Economic Development and Technology (MEDT)** is responsible for the promotion and support of innovation activities. Due to its role in RIS3, the **Government Office for Development and European Cohesion Policy (GODC)** is increasing its role in R&D policy through the coordination of the Smart Specialisation Strategy, approved in 2015.

These institutions are all involved in R&D&I funding. MESS provides financial support to the **Slovenian Research Agency (SRA)**, the main executive agency for public research funding for both, the higher education institutions (HEI) and public research organisations (PRO). The Ministry of Education, Science and Sports also runs directly specific programmes, funded by the European structural and investment funds (ESIF) and ERA-Nets.

On the other hand, the Ministry of Economic Development and Technology finances partly the Slovenian Enterprise Fund, and runs the **Public Agency for Entrepreneurship, Internationalisation, Foreign Investments and Technology (SPIRIT)**, established in 2014. This Ministry also runs several programmes, such as EUREKA, EUROSTARS, etc.

The **Government Office for Development and European Cohesion Policy** is involved in the implementation of RIS3 and coordinates the establishment of so-called Strategic partnerships (see RIO country report 2015 for details) as well as other calls under RIS3. The implementation of the calls is however in the hands of different ministries and agencies. This institutional set-up requires close coordination and cooperation among the main policy actors to ensure a more efficient functioning of the national innovation system.

The R&D&I performers in Slovenia can be divided into three groups: **universities and higher education institutions (HEIs), public research organisations (PROs) and research units within business enterprises**. The PRO sector is relatively strong and outweighs the higher education sector (HES). 15 PROs, founded by the government, get block funding for basic R&D expenditures (no more than 10-30% of total income). This stems from a past structure in which PROs were the main actors and HEI were primarily focused on teaching. The Slovenian research and innovation strategy (RISS) has suggested that research should mostly be located at HEI (there are 3 public universities in Slovenia, plus 1 private and 1 international (Euro-Mediterranean University of Slovenia - EMUNI) university as well as more than 60 different faculties and/or academies).

The role of private non-profit R&D is minimal, both in terms of number of researchers in this sector as well as in terms of funding and performance of R&D.

Last but not least, different forms of business support institutions have been established and (co)financed over the years: from technology centres and parks, to business/university incubators, networks, clusters, technology platforms (more info at Bučar et al. 2010).

4. R&I trends

Slovenia's total R&D expenditure was rapidly increasing in the period 2008-2012 both in nominal values (up to €928.3m in 2012) and as percentage of GDP (2.58% that same year). However, it stalled in 2013 at the level of previous year and decreased in 2014 (€890m or 2.39% of GDP). Preliminary figures for 2015 show further decline to €853m or 2.21% of GDP.

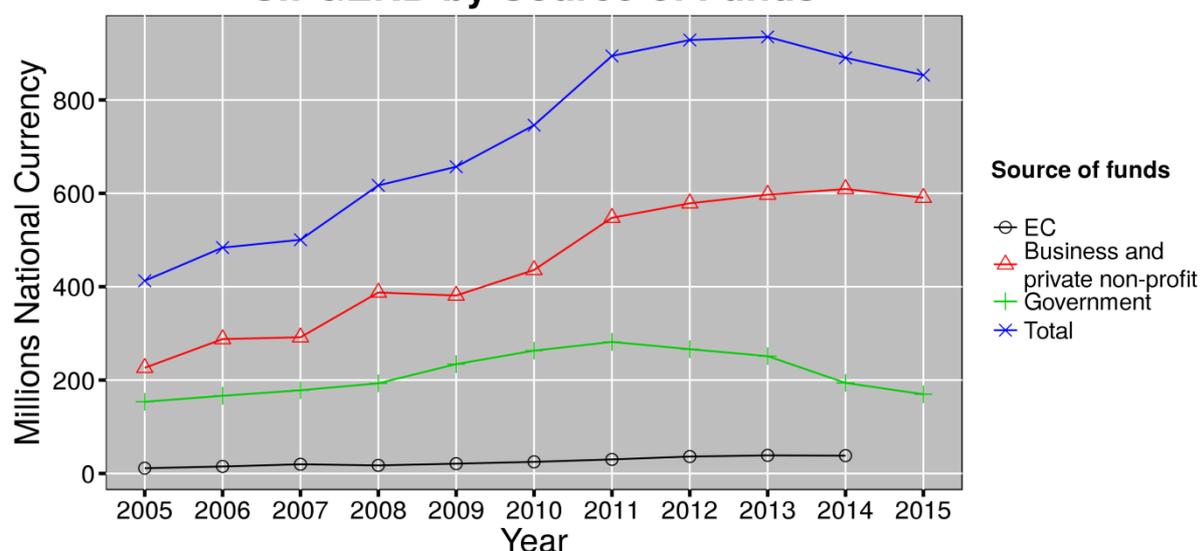
Government budget for R&D (GBAORD) decreased at even faster pace during the period from 2011 to 2014. In 2014, it amounted €161.3m or 0.43% of GDP, which is the lowest amount in the last ten years. Here, too, the preliminary figures for 2015 show a drop to only 0.85% of total general government expenditure (or €159.8m) from record high of 1.4% in 2009 (ESTAT, 2016).

Looking at the gross expenditures on R&D (GERD), it can be noted that the business sector increased its share of funding to 69.2% in 2015 or €590m (down from €608.8m in 2014), while the sources from abroad contributed 10.6% of total GERD or €90.0m (up from €82.4m).

4.1 Public allocation of R&D and R&D expenditure

As explained above, government budget for R&D (GBAORD) has decreased to reach the lowest amount since 2008 in 2015 (0.41% of GDP or €159.8m).

SI: GERD by Source of Funds



The trend of declining public sector funding for R&D seems somehow contradictory with the rapid GDP growth that the country experienced in 2014 and 2015 (3.1% and 2.3%). RISS also had an ambitious R&D intensity target of 3.6% of GDP (or 3% if we look at Slovenia's national reform programme from 2011 onwards), but the downward trends can be partially explained by the need to reduce budget deficit.

The main strategic document in the R&D&I area remains the Research and Innovation Strategy of Slovenia (RISS) 2011-2020, approved by the Parliament in 2011. It was prepared under the Ministry of Higher Education, Science and Sport and was based on a close inter-relationship of the scientific and innovation activities. RISS had also ambitious goals as far as the funding was concerned, since an increase was planned to reach 3.6% of GDP (although a target of 3% started to appear in government documents submitted to the Commission as of 2014, but there is no record of such decision yet), with 1.2% coming from the government.

The government's R&D budget for 2016 shows a small increase (GBARD) and the Ministry for Education, Science and Sport claims that the financing trend will be

gradually reversed, yet they are also aware that the public finance is still in a crunch, so reaching past levels will take some time.

However, with the new Smart specialisation strategy (RIS3) at the end of 2015, the possibility to draw on the EU structural and investment funds for R&D&I will enable a new inflow of financial support. The first call was launched in spring 2016 with two sub-calls: one for the implementation of the R&D programmes with technology readiness levels 3 to 6 (TRL 3-6) under the Ministry for Education, Science and Sports (MESS), and the second one for the projects targeting TRL 7-9 under the Ministry for Economic Development and Technology (MEDT).

The projects applying for MESS support are to be much more complex and require private-public partnership (business firms as well as PROs or/and HES). Their individual value can be up to €6m and they last until June 2020. The total amount of resources, dedicated to R&D programmes under this segment of the call is €55m.

In the MEDT part of the call, R&D projects submitted by business firms (individually or as a group) are financed. In this case, there is no requirement for cooperation with PROs and they can only be part of the project budget as external expertise expenditure. The thresholds for co-financing of the project go from €100,000 up to maximum €500,000. The total amount of resources allocated to this part of the joint call, was €12m initially, but was increased during the evaluation of the call to €15m for the period 2016-2020.

In the period 2016 – 2018, Slovenia plans to invest €1.9b through the Operational Programme in accordance with the thematic priorities of the Smart specialisation strategy (RIS3) (€1b on R&D&I, €0.8b on entrepreneurship and €0.05b on human resources). All the programmes in the field of R&D require co-funding from the beneficiary and will therefore also trigger private investment.

The decline in public financing was suffered both by basic and applied research, as can be observed in the annual report of SRA (SRA, 2016a). PROs and mainly HEI received less funding from SRA, especially for applied projects (45% decline)³. This translated into the incapacity to secure the co-financing from business sector, which had increased its support for this type of research. A decline of the business sector's funding of public research by more than 9% in the period 2001-2014 was noted by the Research and Innovation Strategy of Slovenia (RISS) Implementation Report (2016). The ending of various instruments that supported cooperation between public and private sector, such as centres of excellence, competence centres, joint R&D&I projects⁴, negatively affected this trend as well.

With lowering of public funds for research from 2011 on, the capabilities of the public sector (HES and PRO) to follow the dynamic developments in various scientific fields are being endangered, as it diminishes their ability to cooperate in the international scientific projects or with business partners, where they are expected to join resources (RISS Implementation Report, 2016).

Another category hindered by the diminishing funds is the young researchers, who suffered from the reduction of the young researchers scheme (SRA 2016a).

The Ministry for Economic Development and Technology's financial support has been detailed in an implementation programme. One of the important tasks is "the establishment of complex and integrated entrepreneurial and innovation support environment for potential entrepreneurs and firms at all stages of growth and development" (MEDT, June 2016). These services to entrepreneurs are to be provided

³ In 2012, SRA had a budget of €154.5m and distributed the funding so as to allocate 34% to research programmes, 21% to research projects (both basic and applied) and 19.2% to young researchers' programme. By 2015, total SRA funding was down to €133m, with 62.7% going to programmes, 16.9% to projects and 13.5% (or €17.7m) to young researchers programme.

⁴ Detailed explanation of these instruments can be found in the RIO Report 2014.

through a restructured and modernised VEM points⁵. Together with other institutions of support environment⁶ they will provide consultancy and training to innovative start-ups, process improvements, internationalisation, etc. The Ministry estimates that this type of support will require €62.4m until 2020.

In June 2016, the Agency for Entrepreneurship, Internationalisation, Foreign Investments and Technology (SPIRIT) issued a call in the area of entrepreneurial support in order to apply for registration as a “subject of support environment” (SPIRIT, 2016a). If a specific organisation (technology park, incubator, development centre, etc.) fulfils the criteria, they can be registered in the MEDT/SPIRIT evidence of support institutions. Once registered, the institutions will be able to apply for financial support. SPIRIT plans €2m for the support institutions, with €459,000 coming from the MEDT budget and the remaining from the EU structural and investment funds (ESIF) (SPIRIT, 2016b, p. 24).

4.2 Private R&D expenditure

During the period 2009-2014, total investments in R&D have increased by 25% in real terms. The contribution of the business sector was essential, since their investment grew in real terms by 47.4% (IMAD 2016). This growth stalled in 2015, since according to the preliminary figures BERD has dropped to €590m from €608.8m in 2014. By 2015 (preliminary figures), the business sector funded 69.2% of the total R&D expenditure (GERD), with most of these resources going back to the business sector (96.7%, representing 87.7% of the overall business R&D expenditure). As R&D performer, the business sector was able to draw also on government funds (4,2% of total funds) and funds from abroad (7.9%).

In terms of human and financial resources, R&D in the business sector has increased significantly over last ten years and it outweighed the HES & PRO, with a 53.0% share of researchers (FTE) and 77% share of total R&D performed in 2015.

66% of total R&D in the business sector was performed in 2014 in the manufacturing sector and 32.4% in services, which is a considerable structural change since 2008, when the share was 82.7% and 16.3% respectively. Within the services sector, 72.7% of R&D is done by scientific, technical and other business activities and another significant R&D performer is information & communications, especially software activity in services (21%).

Within manufacturing, traditionally the most important industry is the pharmaceutical one, with nearly €163m (35.7% of the R&D in the manufacturing sector), followed by the electrical appliances (16.8%), motor vehicles (10.6%) and computer, optical and electronic industry (8.9%).

The increase in business R&D was at least partly due to higher R&D tax subsidies (20% in 2006, 40% in 2010 and 100% in 2012). In 2014, these subsidies accounted for €228.6m (IMAD, 2016). Nearly a third of this amount was claimed by the pharmaceutical industry. While only 10% of those eligible for tax subsidies were large companies, they received two thirds. On the other end, micro enterprises represented more than half of those that claimed subsidies but they only accounted for less than one tenth of the amount, showing however their use of this tax scheme. With the increase in R&D investment, employment of researchers in the business sector also grew, reaching 54.1% of all researchers (FTE) by 2014. Yet, the decline of resources resulted also in decrease of the number of researchers in business sector by 446 researchers in 2015.

⁵ VEM points are one-stop shops where future or established enterprises can find advice on how to register a company, where to apply for financial sources, etc.

⁶ Defined in the text as technology parks, incubators, co-working spaces, VEM entry points and SPIRIT as the agency in charge of promotion of entrepreneurship.

In September 2016, a call for the formation of strategic partnerships, as foreseen in Smart Specialisation Strategy, has been announced by the Government Office for Development and European Cohesion Policy (GODC). According to the team at GODC, the establishment of so called "strategic partnerships" should contribute to the formation of long-term public-private partnerships. These partnerships should have the leading role (not the government) in the establishment of value chains and support to the research and innovation activity with the objective of transition to the market in priority areas of RIS3 (GODC, 2015).

The initial process of establishment of partnerships will be supported by the European structural and investment funds (ESIF) and the total funds available for the period 2016-2021 is €10.5 m, with 85% from ESIF. The GODC expects 9 strategic partnerships to be established, each one providing 50% co-financing. The strategic partnerships are meant to have a crucial role in setting the context of future calls for research programmes/projects to be financed by ESIF within the Operational programme 2014-2020. It is expected that the partnerships will propose both the mode of co-financing as well as the main topics.

Several calls from SPIRIT are also expected in the area of entrepreneurship promotion, all supported by ESIF and based on a principle of co-financing (business support infrastructure organisations, innovation process vouchers, internationalisation, strengthening the innovation potential of enterprises; "seal of excellence" co-financing; pilot projects; etc.) (MEDT, 2016 b).

4.3 Public sector innovation and civil society engagement

The public sector contributes to 24 % of the total GDP, which puts Slovenia among the top-10 EU28 countries. On the other hand, the employment in the public sector/total employment ratio ranks Slovenia below the EU average (Public Sector Innovation Scoreboard, 2013). Increased efficiency and better organisational structure were pursued by several reforms, but the results so far are not so positive and the innovation culture remains limited.

Nevertheless, there are some good practices introduced over the last decade, such as inter-services consultations or public debates, both usually applied prior to the formal proposal of new legislation or regulation. The same process can sometimes be applied prior to changing some processes in the public service/administration. The NGO sector actively participates in the decision-making process especially in the case of proposals of legal character or draft strategic documents in specific areas (like the Slovenian Development Strategy), mainly through e-debates.

In April 2015, the government adopted the Public Administration Development Strategy 2015-2020 (MPA, 2015a), prepared with financial support from the European Social Fund, and confirmed the Modern Public Administration Development and Quality Policy (MPA, 2015b). The strategy addresses a rational public administration organisation with the transition to a programme-oriented budget, modern human resources management, simplified public procurement, better regulation, efficient administrative procedures, achievement of integrity and transparency, introduction of the system of quality management, improved inspection process and effective informatics system.

Another project promoting innovation in the public sector is the "Partnership for Change", run by the Ministry of Public Administration (MPA) and the American Chamber of Commerce. It represents an innovative practice where a partnership between the business sphere and public administration is built. The objective, according to MPA, "is to overcome the gap between these "two worlds", to enhance understanding about different goals and views, to establish knowledge transfer between organisations and to build a strong partnership for addressing common challenges"⁷. In 2016, 5 ministries

⁷ http://www.mju.gov.si/en/areas_of_work/partnership_for_change

and 30 national and international companies are involved. They participate in short-term exchange of employees, create mixed teams to address pre-selected challenges and organise workshops for new competencies.

At the beginning of 2016, the first platform for crowd investing was also established, enabling small investors (€100 to €5,000) to invest in development of Slovenian companies (IMAD 2016). This suggests new dynamics in the business environment.

5. Innovation challenges

5.1 Challenge 1: Ensure the sustainability of R&D&I funding

Description

Slovenia's total R&D expenditure was rapidly increasing in the period 2008-2012 both in nominal values (up to €928.3m in 2012) and as percentage of GDP (2.58% that same year). The contribution of business sector was essential here, since their investment grew in real terms by 47.4%. However, GERD stalled in 2013 at the level of previous year and decreased in 2014 and 2015 2.38% and 2.21% of GDP).

Government R&D budget (GBARD) decreased at even faster pace during the period from 2011 to 2014. In 2014, it amounted €157m or 0.41 % of GDP, which is the lowest amount in the last eight years (SORS 2016). This trend seems however contradictory with the rapid GDP growth that the country experienced in 2014 and 2015 (3.1% and 2.1%) and RISS ambitious R&D intensity target of 3.6% of GDP (or 3% if we look at Slovenia's national reform programme from 2011 onwards), but can be partially explained by the need to reduce the budget deficit.

Policy response

For 2016 the government plans a slight increase of its R&D spending (GBARD). The Ministry of Education, Science and Sports is to receive €157m for the financing of science in the 2016 budget, compared to €132m in 2015, but it has seen its human resources funds reduced (the young researchers programme was allocated €17.7m in 2015 and €17.3 m in 2016) (Ministry of Finance, 2016).

Budget allocations for the Ministry of Economic Development and Technology have increased, especially for start-up support. SRA programme budget for 2016 amounts to €142m (an increase of €9m when compared to 2015). A more detailed look shows that project financing and research equipment have the biggest budget increase.

With the Smart Specialisation Strategy approved, the drawing on the European structural and investment funds support has re-started in 2016. The operational programme allocates €1b to R&D&I, €0.8b to entrepreneurship and €0.05b to human resources. As already explained in chapter 3.2., the first call was published in the spring, with several others expected in the fall of 2016.

The ability to draw on EU funds is reflected in the increase of the 2016 budget of SPIRIT to €22.3m (from €17m in 2015)⁸. SPIRIT is to receive €9.7m EU funds only for the programmes in area of entrepreneurship (development of support environment, promotion of entrepreneurship and programmes in area of R&D&I).

In terms of private R&D investment, the maintenance of the R&D subsidy for the business sector at 100% favours the increase in R&D activity.

Policy Assessment

The 2016 R&D funding increase and the good prospects for 2017 are mainly driven by the possibility to draw again on EU funds. Within the national budget the increase is

⁸ The figure is not fully comparable, since the promotion of tourism was moved back to independent Slovenian Tourist Agency, along with the resources devoted to this activity.

modest and mostly follows the co-financing of the European structural and investment (ESIF) funds.

However, the problem of continuity and sustainability of the R&D funding remains, as the changing nature of the main objectives and structures from one financial perspective to another complicate the long term planning, evaluation and learning processes, so needed in the R&D field.

5.2 Challenge 2: Development of a well co-ordinated and transparent R&I governance

Description

Putting in place a modern, transparent, well co-ordinated and comprehensive national innovation system has been a challenge for Slovenia for a number of years. This was precisely one of the essential tasks of the Research and Innovation Strategy (RISS) adopted in 2011, which aimed at ensuring better policy coordination and therefore a more effective R&D&I system. Yet, according to the implementation report, only 10 of the 69 measures planned have been implemented so far, 41 are in the implementation process, and 18 have not been started (RISS implementation report, 2016)

The policy coordination problems and the so-called "implementation deficit" date back to the reorganisation of the R&D&I sector and the system still needs to adapt to the split of the technology and innovation sections in 2 different Ministries. As it can be observed in various strategic documents⁹, innovation and technology gradually became a sub-item in documents dealing with entrepreneurship promotion. On top, the Technology Agency, which was to become SRA's homologue, was integrated in SPIRIT and most of its instruments phased out¹⁰.

A more active role of the Government Office for Development and European Cohesion Policy (GODC) in the design of the Smart Specialisation Strategy (RIS3) and the implementation plans as well as their role in the preparation of the overall Slovenian Development Strategy¹¹ has not yet showed evidence to enhance the coordination of the government structure.

Policy response

The implementation section of the Smart Specialisation Strategy (2015) provides for a new coordinating body called the Implementation Working Group. It comprises representatives of all three main R&D&I policy actors, namely State Secretaries of GODC, MEDT and MESS. A special unit within GODC supports the working group, and prepares all necessary documentation and analyses.

The Smart Specialisation Strategy (RIS3) is built on the process of entrepreneurial discovery with considerable involvement of business sector. Selected priority areas correspond with the industries, most active in R&D&I. With the adoption of RIS3, Slovenia is in the position to draw on European structural and investment funds (ESIF) and the first call was jointly published in spring 2016 by both Ministries (MESS and MEDT), but the 2 strands have very different content and requirements (see section 3.1. for more details), which might hinder their efficiency and coordination.

In addition, the government appointed by the end of 2015 a new expert group in order to finalise the new draft for the Law on R&D&I. The major obstacle to move forward is

⁹ Programme of the Implementation of Financial Support of MEDT 2015-2020 (MGRT 2016), Partnership Agreement between Slovenia and European Commission for the period 2014-2020, National Reform Programme 2016-2017, April 2016. Gov. of Slovenia.

¹⁰ More details in the RIO Country Report 2015.

¹¹ <http://slovenija2050.si/>

the approach to the content of the law: should it follow the RISS and combine research and innovation or should the institutional reality of the moment prevail? Since research and development is in the domain of one ministry and innovation of the other, the legal framework of the two areas can also be described in two acts which would need to be harmonised. However, as the Research and Innovation Strategy of Slovenia (RISS) was adopted at the level of the Parliament, any change would require not only a ministry decision, but both the government's and the Parliament's agreement.

Policy Assessment

At the time of the Research and Innovation Strategy design, it seemed that Slovenian authorities considered science and technological development as the path to increase productivity, improve the competitiveness of Slovenian economy and contribute positively to the development of society (Bučar and Stare, 2014). By 2016, it seems that the fact that increased investment in the period 2009-2012 did not bring immediate and measurable results caused a decrease of political support. The research and innovation policy seems no longer at the centre of the government's attention, as reflected in recent official documents. The National Reform Programme 2016-2017 (Gov. of Slovenia, April 2016) does not refer to R&D&I and the Programme of the MEDT for support to entrepreneurship (draft - June 2016) has no reference to RISS either.

5.3 Challenge 3: Improve the links between R&D&I investment and performance

Description

The European innovation Scoreboard 2016 ranks Slovenia among the "strong innovators", close to the EU average performance. Particular relative strengths are in international scientific co-publications, new doctorate graduates, and public-private co-publications. Strong relative weaknesses are observed for venture capital investments, license and patent revenues from abroad and non-EU doctorate students. Also, three of the indicators in the category "economic effects", are under EU average: export of knowledge-intensive services, sales share of new product innovations and licence and patents revenues from abroad (EIS 2016).

An analysis done by Edquist and Zabala-Iturriagagoitia (2015) ranks however Slovenia 18th in terms of innovation outputs and goes even further stating that in terms of productivity (innovation performance) the country holds 25th position among the 28 countries (ibid).

This discrepancy suggests a low efficiency of the national innovation system, especially since the increased business investment in R&D. Eurostat's Community Innovation Survey (CIS) data for 2012-2014¹² also shows that compared to 2010-2012 the innovation activity of the enterprises was 0.6 of a percentage point lower at 46%. Forty-eight per cent of the innovation-active enterprises introduced both technological and non-technological innovation. Small enterprises remain least engaged in innovation activity, yet they represent majority of Slovenian business.

Policy response

Slovenia's Smart Specialisation Strategy selected thematic priorities based on their comparative advantages, both in the entrepreneurial field and in research, be it public or private. Since the instruments favour projects ranging from applied research to commercialisation (technology readiness levels from 3 to 9 – see point 3.2. for details) it is expected that research cooperation between business and the public sector will be stimulated and that those programmes initiated by the business sector (also through strategic partnerships) will lead to closer-to-market research and thus improve

¹²CIS 2012-2014 data; first release April 2016, SORS.

performance. By co-financing a much more business-focused research it is also expected that the economic effects of R&D&I investments will improve.

In this context, the Ministry of Economic Development and Technology and the Ministry of Education, Science and Sports have launched a call in spring, to be co-financed by the European structural and investment funds (ESIF).

The Ministry of Economic Development and Technology targeted TRL 7-9. R&D projects can be submitted by business firms individually or as a group and there is no requirement for cooperation with PROs. In fact, they can only be engaged as external experts. The thresholds for co-financing of the project are from €100,000 up to a maximum of €500,000. The total amount of resources is €12m¹³ for the period 2016-2020.

The Ministry of Education, Science and Sports will fund with €55m R&D programmes in TRL 3-6, which are more research focused, but also lead to important innovation. They require private-public partnership (business firms as well as PROs or/and HES). Their individual value can go up to €6m (plus co-financing of participating partners) and they are intended to last until June 2020.

Policy Assessment

There is a certain time lag between investing in new knowledge and obtaining economic performance. While several R&D indicators have considerably improved in the past (i.e. number of scientific publications per capita or their citation ranking), the economic impact is more difficult to achieve.

One of the key challenges in this area is achieving a stable, long-term and predictable set of public instruments, not dependent on political changes or sources of funding. When this does not happen, R&D performers constantly need to adjust their work to different instruments, hindering the link between R&D investment and performance. Terms of reference required in applying for funding and reporting methods vary and affect the outputs (Bučar and Stare, 2014). This is for instance why publications have increased so dramatically, since most SRA calls are requiring high number of publications. Coordinated efforts in the criteria design and success indicators for the new instruments/programmes will be crucial to increase the commercialisation of new knowledge and improve technology transfer.

6. Focus on creating and stimulating markets

This section aims at describing and assessing national level efforts to introduce demand-side innovation policies to stimulate the uptake of innovation or act on their diffusion, including public procurement and regulations supporting innovation. It also analyses policy measures aimed at internationalisation of companies with the aim of increasing the innovativeness of the economy.

While new concepts such as demand-driven innovation, open innovation or green and innovative procurement are terms familiar to the policy makers, their integration in R&D&I policy is slow. Daily management coupled limited public resources in Slovenia do not encourage to add new instruments.

The Ministry of Economic Development and Technology launched an innovative public procurement initiative several times, with no results so far. Developing and improving

¹³ The amount was increased to €15m during the evaluation process due to high number of well-evaluated projects.

demand-side measures have been the subject of recommendation by both national evaluations (Jaklič et al., 2012) and international reviews (OECD 2012).

Slovenia spent 11.25% of its GDP (€3.97b) in public procurement in 2013 (Min. of Finance, 2014). Several experts claim that this expenditure could have a positive impact on R&D&I if the rules were modernised to take into account other criteria than the lowest price.

Finally, in 2016, public procurement regulation has changed with the adoption of a new law¹⁴ that introduces the concept of innovation partnerships.

This concept allows the buyer to specify that the procurement is of innovative character and indicate which elements define the minimum requirements to be met by all tenders. The contracting authority invites the bidders (even only one bidder) to submit an offer for the specific product or service based on the requirements. Still, even in this case, contracts shall be awarded based the best price-to-quality ratio. The new Public Procurement Law entered into force in April 2016, and there are so far no examples to be mentioned.

In July 2016, the Ministry of Public Affairs made public a draft of a revised directive on green public procurement for public consultation¹⁵. It specifies for which products and services the principles of green procurement need to be followed and proposes specific environmental standards in 21 different categories of goods and services.

Gradually therefore the attitude towards using public procurement to achieve broader goals (innovation, environment protection, etc.) is improving and at least the legal framework is becoming friendlier. Much depends on how the first attempts to use new regulations will be met in daily practice.

One of the main policies of the SPIRIT is the promotion of internationalisation. There are special instruments providing support to companies to participate at fairs abroad as well as funds provided for market research. It also co-finances Slovenian business clubs abroad, which together with the economic sections of the diplomatic representation work to provide support to enterprises when entering a specific market. The SPIRIT programme (SPIRIT, 2016b) cites that they plan to support in the period 2015-2020 at least 20 business clubs internationally, organise at least 50 events abroad to promote Slovenian business firms and provide minimum 500 advisory sessions to potential candidates for internationalisation.

¹⁴ Official Gazette of RS; no. 91/15.

¹⁵ <https://e-uprava.gov.si/drzava-in-druzba/e-demokracija/predlogi-predpisov/predlog-predpisa.html?id=6781>

References

- BUČAR, Maja, JAKLIČ, Andreja, UDOVIČ, Boštjan (2010) *National system of innovation in Slovenia*, (Analyze CMO, 4). Ljubljana: Faculty of Social Sciences, Založba FDV, 2010. ISBN 978-961-235-407-7. <http://www.mednarodni-odnosi.si/cmo/publications.htm>.
- BUČAR, Maja, ROJEC, Matija (2014) Science-industry cooperation in Slovenia: determinants of success. *Economic and business review*, ISSN 1580-0466., vol. 16, no. 3, str. 315-336, 371, tabele. http://www.ebrjournal.net/ojs/index.php/ebr/article/view/329/pdf_14.
- BUČAR, Maja, STARE, Metka, UDOVIČ, Boštjan (2014). *Centri odličnosti in kompetenčni centri : evalvacija instrumentov*. (Centres of excellence and centres of competence) [Ljubljana]: Fakulteta za družbene vede, Center za mednarodne odnose. http://www.mizs.gov.si/fileadmin/mizs.gov.si/pageuploads/Znanost/doc/Strukturni_Skladi/Centri_odlicnosti/Centri_odlicnosti_in_kompetencni_centri.pdf
- BUČAR, Maja and STARE, Metka (2014) Evolution of innovation policy in Slovenia since 2004 – promises and pitfalls. *Studia Historica Slovenica* 14 (1): 177–196.
- ECFIN (2016) EC Autumn 2016 Economic Forecast – Slovenia http://ec.europa.eu/economy_finance/eu/forecasts/2016_autumn/si_en.pdf
- Edquist, C., Zabala-Iturriagagoitia, J.M. (2015). The innovation Scoreboard is flawed: the case of Sweden – not being the innovation leader of the EU. Lund University. <https://charlesedquist.files.wordpress.com/2012/10/201508-cwp-27.pdf>
- EIS 2016 – European Union Innovation Scoreboard – European Commission; http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en
- GODC, 2015 Strateška razvojno inovacijska partnerstva (Strategic development innovation partnerships) http://www.svrk.gov.si/fileadmin/svrk.gov.si/pageuploads/KP_2014-2020/Strategija_pametne_spezializacije/2015_11_10_SRIP_splet.pdf
- IMAD (2016) Development Report 2016. Institute for Macroeconomic Analyses and Development. http://www.umar.gov.si/fileadmin/user_upload/publikacije/pr/2016/APoR_2016.pdf
- Invest Europe (2016) Central and Eastern European Private Equity Statistics 2015 ; <http://www.investeurope.eu/media/504370/invest-europe-cee-statistics-2015.pdf>
- Jaklič, Andreja et al. (2012): Targeted Research Programme: The effectiveness of introduced measures for supporting innovations. Final Report (in Slovenian)
- Milena BEVC, Marko OGOREVC (2014) Emigracija slovenskih mladih raziskovalcev in njihova zaposlitvena mobilnost znotraj Slovenije (Emmigration of Slovenian Young Researchers and their employment mobility within Slovenia), *Teorija in praksa* 54; 2-3. https://www.researchgate.net/publication/297353373_Emigracija_slovenskih_mladih_raziskovalcev_in_njihova_zaposlitvena_mobilnost_znotraj_Slovenije
- Ministry of Finance (2014) Statistično poročilo o oddanih javnih naročilih 2013 (Statistical Report on awarded public procurement, 2013). http://www.mf.gov.si/fileadmin/mf.gov.si/pageuploads/mediji/2014/2014okt09_statisticno_porocilo_javna_narocila_letno_2013.pdf
- Ministry of Finance (2016) Sprejeti proračun za 2016 (Adopted budget for 2016); available at: http://www.mf.gov.si/si/delovna_podrocja/proracun/sprejeti_proracun/

- Močnik, D. and Rus, M. (2016). Slovenska podjetja in značilnosti start-up ekosistema (Slovenian companies and the characteristics of the start-up ecosystem). Slovenian Entrepreneurship Observatory 2015. Maribor: Faculty of Economics and Businesses, University of Maribor.
http://www.spiritslovenia.si/resources/files/doc/publikacije/Slovenski_podjetniski_observatorij_2015.pdf
- MPA (2015a) Public Administration 2020- Public Administration Development Strategy 2015-2020. Ministry of Public Administration of Rep. of Slovenia;
http://www.mju.gov.si/fileadmin/mju.gov.si/pageuploads/JAVNA_UPRAVA/Kakovost/Strategija_razvoja_JU_2015-2020/Strategija_razvoja_ANG_final_web.pdf
- MPA (2015b) Dvoletni akcijski načrt izvedbe Strategije razvoja javne uprave 2015 -2020 (Two-year action plan on implementation of Public administration development strategy 2015–2020); Ministry of Public Administration of Rep. of Slovenia.
 Available in Slovenian at:
http://www.mju.gov.si/si/novinarsko_sredisce/novica/article/1328/6385/742ad2f8beadcb93f09a63d6f9a9af6b/
- MRGT, 2016 b - Podjetništvo in konkurenčnost
http://www.mgrt.gov.si/fileadmin/mgrt.gov.si/pageuploads/SOJ/Razpisi/predstavit_ev_DPKT.pdf
- OECD 2012 - Reviews of Innovation Policy: Slovenia 2012
<http://www.oecd.org/publications/oecd-reviews-of-innovation-policy-slovenia-2012-9789264167407-en.htm>
- RISS Implementation Report 2016. Poročilo o uresničevanju Resolucije o raziskovalni in inovacijski strategiji Slovenije 2011-2020. Ministry of Education, Science and Sports and Ministry of Economic Development and Technology.
- SBA 2016 – Small business act fact sheet on Slovenia, European Commission
<http://ec.europa.eu/DocsRoom/documents/20302/attachments/32/translations/renditions/native>
- SORS (2015) Research and Development Activity, Slovenia, 2014; First release, Nov.2015.
- SORS (2016b) – Statistical office of the Republic of Slovenia - Inward Statistics on Foreign Affiliates, Slovenia, 2014; First release, 1st Sept, 2016
<http://www.stat.si/StatWebPDF/PrikaziPDF.aspx?id=6150&lang=en>
- SORS (2016a) Gross domestic product, Slovenia, 2nd quarter 2016. First Release. Aug 31, 2016. <http://www.stat.si/StatWeb/en/show-news?id=6160&idp=1&headerbar=10>
- SPIRIT (2016a) Javni poziv k vpisu in podaljšanju vpisa v evidenco subjektov inovativnega okolja za leto 2016 (Public call to enlisting and prolongation of enlisting in the evidence of subjects of innovative environment for 2016); available at <http://www.spiritslovenia.si/razpisi/2016-06-30-Javni-poziv-k-vpisu-in-podaljsanju-vpisa-v-evidenco-subjektov-inovativnega-okolja-za-leto-2016>
- SPIRIT (2016b) Program dela in finančni načrt za 2016 in 2017 (Work programme and financial plan for 2016 and 2017)
http://www.spiritslovenia.si/resources/files/2016/Razpisi/JR_Slo_poslovni_klubi_2016/Program_in_financi_nart_SPIRIT_Slovenija_2016_in_2017.pdf
- Slovenian Research Agency – SRA (2016a) Annual report 2015;
<https://www.arrs.gov.si/en/gradivo/dokum/inc/ARRS-Annual-Report-2015.pdf>
- Slovenian Research Agency- SRA (2016b) Javni razpis za za izbiro raziskovalnih projektov Ciljnega raziskovalnega programa CRP 2016 v letu 2016 (Public call for the selection of research projects within Targeted Research Programme CRP 2016)

<https://www.arrs.gov.si/sl/progproj/crp/razpisi/16/razp-crp-16.asp>

World Bank (2016) Doing Business 2017 Economy Profile Slovenia

[http://www.doingbusiness.org/reports/global-reports/~media/WBG/DoingBusiness/documents/profiles/country/SVN.pdf](http://www.doingbusiness.org/reports/global-reports/~/media/WBG/DoingBusiness/documents/profiles/country/SVN.pdf)

Abbreviations

CIS	Community Innovation Survey
EC	European Commission
ECFIN	European Commission's Directorate General for Economic and Financial Affairs
ESIF	European structural and investment funds
EU	European Union
EU28	European Union's 28 Member States
FTE	Full time equivalent
GBARD	Government budget appropriations for research and development
GDP	Gross domestic product
GERD	Gross domestic expenditure on R&D
GODC	Government Office for Development and European Cohesion Policy
HEI	Higher education institutions
HES	Higher education sector
IMAD	Institute for Macroeconomic Analyses and Development (Slovenia)
IMF	International Monetary Fund
MEDT	Ministry of Economic Development and Technology
MESS	Ministry of Education, Science and Sports
MPA	Ministry of Public Administration
OECD	Organisation for Economic Co-operation and Development
PNP	Private non profit
PRO	Public research organisation
R&D	Research and development
R&D&I	Research, development and innovation
RIS3	Smart specialisation strategy of Slovenia
RISS	Research and Innovation Strategy of Slovenia
SORS	Statistical Office of the Republic of Slovenia
SPIRIT	Slovenia's Public Agency for Entrepreneurship, Internationalisation, Foreign Investments and Technology
SRA	Slovenian Research Agency
TRL	Technology readiness levels

Factsheet

	2009	2010	2011	2012	2013	2014	2015
GDP per capita (euro per capita)	17700	17700	18000	17500	17400	18100	18700
Value added of services as share of the total value added (% of total)	66.72	67.41	66.79	66.21	65.6	64.55	64.87
Value added of manufacturing as share of the total value added (%)	19.56	20.16	20.96	21.63	22.45	23.05	23.23
Employment in manufacturing as share of total employment (%)	21.21	20.34	20.61	20.48	20.28	20.23	20.28
Employment in services as share of total employment (%)	59.08	60.56	61.18	61.74	62.26	62.45	62.84
Share of Foreign controlled enterprises in the total nb of enterprises (%)	1.94	1.95	3.73	4.14	4.53		
Labour productivity per hour worked (Index, 2010=100)	96.8	100	103.4	102.7	101.6	103.1	104
New doctorate graduates (ISCED 6) per 1000 population aged 25-34	1.09	1.07	1.2	1.23	2.69	2.02	
Summary Innovation Index (rank)	18	19	17	17	18	16	16
Innovative enterprises as a share of total number of enterprises (CIS data 2012) (%)				46.5		45.9	
Innovation output indicator (Rank, Intra-EU Comparison)			16	15	17	18	
Turnover from innovation as % of total turnover (Eurostat)		10.6		10.5			
Country position in Doing Business (Ease of doing business index WB)(1=most business-friendly regulations)						35	29
Ease of getting credit (WB GII) (Rank)						102	101
EC Digital Economy & Society Index (DESI) (Rank)						19	18
E-Government Development Index Rank		29				41	
Online availability of public services – Percentage of individuals having interactions with public authorities via Internet (last 12 months)	35	44	46	48	52	53	45
GERD (as % of GDP)	1.82	2.06	2.42	2.58	2.6	2.38	2.21
GBAORD (as % of GDP)	0.68	0.6	0.59	0.53	0.49	0.43	0.41
R&D funded by GOV (% of GDP)	0.65	0.73	0.76	0.74	0.7	0.52	0.44
BERD (% of GDP)	1.17	1.4	1.79	1.95	1.99	1.84	1.69
Research excellence composite indicator (Rank)				15			
Number of scientific publications among the top 10% most cited publications worldwide as % of total scientific publications of the country		7.73	7.36	8.39			
Public-private co-publications per million population	68.89	74.74	93.16	63.25	68.49	65.98	
World Share of PCT applications	0.09	0.09	0.07	0.07	0.07	0.08	

***Europe Direct is a service to help you find answers
to your questions about the European Union.***

Freephone number (*):

00 800 6 7 8 9 10 11

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

More information on the European Union is available on the internet (<http://europa.eu>).

HOW TO OBTAIN EU PUBLICATIONS

Free publications:

- one copy:
via EU Bookshop (<http://bookshop.europa.eu>);
- more than one copy or posters/maps:
from the European Union's representations (http://ec.europa.eu/represent_en.htm);
from the delegations in non-EU countries (http://eeas.europa.eu/delegations/index_en.htm);
by contacting the Europe Direct service (http://europa.eu/europedirect/index_en.htm) or
calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (*).

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Priced publications:

- via EU Bookshop (<http://bookshop.europa.eu>).

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.



EU Science Hub
ec.europa.eu/jrc



@EU_ScienceHub



EU Science Hub - Joint Research Centre



Joint Research Centre



EU Science Hub

