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SLOVENIAN SMART SPECIALISATION STRATEGY 2014-2020

Background Information

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1. SLOVENIA GENERAL INFORMATION

Slovenia is situated in Central Europe and covers an area of 20,273 km². It has borders with Italy, Austria, Croatia and Hungary, and stretches across the Alps, the Dinaric Alps and the Pannonian Plain to the Mediterranean.

In spite of its geographically small size, it is a convergence point for a range of different **landscapes**, each of which has its own characteristics and unique features. **Forests** cover half the territory of the country (10,124 km²); Slovenia is the third most forested country in Europe, after Finland and Sweden.

Table 1: Main Economic Indicators

Main indicators	2008	2009	2010	2011	2012	2013 forecast	2014 forecast
GDP (real growth rates, in %)	3.4	-7.8	1.2	0.6	-2.3	-2.4	-0.2
GDP in EUR million	37,244	35,556	35,607	36,172	35,466	35,027	35,455
GDP per capita (PPS)*	22,700	20,600	20,800	21,300	21,000	-	-
GDP per capita, in EUR	18,420	17,415	17,379	17,620	17,244	16,982	17,157
Trade balance as % of GDP	-6.1	-0.7	-0.6	0.0	2.3	-	-
Gross external debt in EUR million	39,234	40,294	40,723	40,241	40,838	-	-
Gross external debt, as % of GDP	105.3	113.3	114.4	111.2	115.1	-	-
Standardised rate of unemployment (ILO)	4.4	5.9	7.3	8.2	8.9	10.8	11.0
Gross wage per employee in industry (real growth rate)	2.0	1.0	3.9	2.0	0.1	-	-
Labour productivity (% of GDP per employee)	0.8	-6.1	3.5	2.2	-1.1	0.0	1.3
Inflation, end of the year	2.1	1.8	1.9	2.0	2.7	2.1	1.4
Gross fixed capital formation as a % of GDP	28.6	23.1	20.1	18.5	17.4	17.5	17.7
Average exchange rate USD/EUR	1.47	1.39	1.32	1.39	1.29	1.30	1.30

Source: IMAD, 2013

GDP is expected to increase 0.5% in 2014 owing to a further strengthening of growth in exports and a slower decline in household consumption according to the Spring Forecast of Economic Trends

(IMAD, 2014)¹. The anticipated acceleration of economic recovery in Slovenia's main trading partners will have a positive effect on growth in exports, which will again be mainly driven by exports of high-technology products. In the domestic environment, the beginning of the banking system stabilisation improved the government's access to funding and helped reduce uncertainty among economic agents.

Foreign direct investment (FDI) is a key element leading to enhanced global economic integration. Slovenia has not been attractive enough for FDI so far. Therefore, efforts to increase the visibility of Slovenia and its attractiveness for foreign investment to be worth made as well as to reduce the constraints caused by unfavourable business environment should be continuously made. Despite a relatively low share of FDI in GDP compared with other EU states, the FDI nevertheless does play an important role in Slovenian economy. Firms having FDI accounted for 4.5 % of total firms in the end of 2012, but managed to represent 19.8 % of the capital, 23.2 % of the assets and 21.7 % of the employees in the total entrepreneurial activity. In particular, these firms were successful in terms of international trade where they accounted for 40 % of the exports and 43.1 % of the imports of the Slovenian entrepreneurship sector.

The competitiveness of the Slovenian economy improved in 2013, which is indicated by growth in Slovenia's share on the global market of goods and a further decline in unit labour costs. In 2008–2012, Slovenia's share on the global goods market declined by 21.7%. In 2013 this trend started to reverse, given that the global market share was up 3.3% year-on-year in the first nine months. The increase was a result of market share growth in the eleven trading partners to which Slovenia exports 70% of total goods. It was recorded by the majority of the most important products for Slovenia's exports.¹ The cost competitiveness of the economy also improved in the same period due to a year-on-year decline in unit labour costs, the improvement being among the largest in the euro area and the EU. The relative position of Slovenia's economy therefore improved again for the third year in a row. The continuation of the positive trend in 2013, once again a result of lower wages and productivity growth due to a relatively larger decline in employment than activity, was mainly underpinned by industries in the tradable sector. However, in view of a larger relative deterioration in the first years of the crisis, particularly in 2009, the relative position of the Slovenian economy remains less favourable than before the crisis.

High cost pressures and unfavourable geographical and product structure of the export undermine **export competitiveness** of Slovenia. Following a relatively high growth in 2011 export rates in 2012 increased by mere 0.6 %, and import shrank by 4.7 % due to a significant export slowdown and considerable decrease of domestic consumption. Correspondingly, current account of the balance of payments recorded a surplus amounting to 3.3 % of GDP. Positive contribution to economic activity will again come solely from international trade. Import in emerging markets has been on the increase recently, however the share thereof remains relatively small.

Slovenia is struggling with **inappropriate production structure** with a relatively low share of technologically most advanced products when compared to the countries whose exports seem to be bouncing back more rapidly. 2012 domestic demand fell drastically. Household consumption declined by 4.8 %, government consumption by 1.3 % and investments into fixed assets by 8.3 %. Given continued negative trends in the labour market, restrictive pay and employment policy in public sector and further rationalisation of public spending, the demand of both households and the

¹ 2014 Spring Forecast of Economic Trends, IMAD, March 2014; http://www.umar.gov.si/publikacije/single/publikacije/zapisi/pomladanska_napoved_gospodarskih_gibanj_2014/1/

state are further to decrease in the future. On the other hand, the investments are projected to decline considerably less (by 1.6 %).

Conditions in the labour market further aggravated in 2013. Due to a general slowdown in economic activity and a massive transition to inactivity in 2013, the employment rate according to the statistics of national accounts fell by 0.8 % in 2012 and is even expected to shrink by 2.3 % in 2013. **Employment rate** in Slovenia has been on a steady decrease since 2008 and the gap from the Europe 2020 target has increased: the 20-64 age group employment rate stood at 68.3 % in 2012 (by 4.7 % less than in 2008). The employment rate of low-skilled workers stood at 46.4 % (men 40 %, women 29.2 %) in 2012, whereas the EU-28 average amounted to 52.2 %.² On the other hand, the unemployment rate has persistently grown.

2. RESEARCH, DEVELOPMENT, INNOVATION AND ENTREPRENEURSHIP - BACKGROUND

Slovenia will concentrate approximately **80 % of the ERDF funds** (cohesion region Vzhodna Slovenija 77 % and cohesion region Zahodna Slovenija 83 %) on RDI, competitiveness, ICT and low-carbon society and **70 % of the ESF funds** (on the average on the level of both cohesion regions) on employment and lifelong learning. In light of the disparities between the levels of development of the cohesion region Zahodna Slovenija and the cohesion region Vzhodna Slovenija the concentration level on RDI and competitiveness is lower and allocates over **20 % of the funds** to climate change adaptation, better environmental status and biodiversity, establishment of infrastructure for sustainable mobility and social inclusion as well as institutional capacity. To a greater extent support will be given to the areas in accordance with the Smart Specialisation Strategy and, to a smaller extent, also to the areas which have not yet been identified but will, in the future, be recognised as the key areas on the basis of the development potentials.

Programming of Smart Specialisation Strategy will see a new round of public events organised in April and May to double check investment areas. Updated baselines with an upgraded vision and monitoring system are set for the beginning of June 2014 as well as adoption of the document.

2.1. SITUATION OF THE SLOVENIAN RESEARCH AND INNOVATION SYSTEM

Analyses of the Slovenian research and innovation system have underlined numerous strengths and weaknesses. The identified strengths comprise, *inter alia*, scientific quality of the research potential and infrastructure, integration in the international setting and reputation of the research system and a high share of corporate investments in research. Most pressing national challenges and weaknesses are reflected in the fragmentation and lack of cooperation between the relevant development and innovation generators to facilitate the transfer of knowledge and its application, inefficient knowledge triangle and in particular the unconcentrated, spread investment in R&D activities in the areas where the country and its regions boast comparative advantages. On top of that, the economic crisis has nothing but emphasised the lack of national resources to sustain the national research and innovation-driven activity.

The expenditure spent on R&D in Slovenia is rapidly nearing the NRP target of 3 %, and in 2012 surpassed the EU average standing at 2.80 %. R&D intensity in Slovenia stood at an enviable 6th rank

² Eurostat

among other EU members in 2011³. In terms of gross domestic expenditure on R&D in 2012, the companies invested most in RDI activities, their share accounting for 61.2 %, followed by the general government sources (31.5 %). Compared with 2011, the structure of gross domestic expenditure on R&D saw the majority of resources in the business sector (73.9 %), followed by the general government (14.3 %) and higher education sector (11.8 %). The share of expenditure on RDI in gross domestic expenditure on R&D in the private non-profit sector was negligible. Foreign investment has recently become an important funding source for RDI in Slovenia, the latter amounted to EUR 62.8 million or 7 % of total sources in gross domestic expenditure on R&D in 2011⁴.

Slovenia's lag in terms of investment in RDI in the ICT branch undermines economic growth and jobs, which has become all the more evident during the economic crisis. Firm support for industry to promote RDI is therefore a must to achieve the objectives of the Digital Agenda for Europe (DAE), to harness the opportunities offered by ICT and to reach sustainable economic and social benefits. It is also important to adopt measures and develop solutions based on open data of the public sector, which will help improve the competitiveness of ICT industry and upgrade e-services of the public sector. These measures are key to picking up the economic growth, stepping up competitiveness, creating digital jobs and facilitating breakthrough of Slovenian firms in foreign markets in line with the objectives of the Grand Coalition for Digital Jobs.

Comparison of innovation performance across the EU grouped Slovenia among the “innovation followers” and revealed that the country’s innovation performance slightly declined in the last year. Despite strengthening certain innovation performance factors during the crisis (enhanced RDI investment, human capital enhancement⁵), the progress made in certain areas was too slow (intellectual property, transfer of knowledge to firms, efficient use of ICT in firms or public sector) or even fell behind (innovation activity), which has reflected in below-average added value per person employed.

Evaluation of measures for promotion of R&D activities in the economy and knowledge institutions (2007-2011, for the period until 2013⁶) revealed that the targets set in the area of innovative integration of science, culture, research and technology were achieved and that, above all, strong linkages were formed between the academic sphere and the economy. The evaluation recommended that institutional aspects of innovation policy improve, as they failed to reach the desired level which should be addressed in the future. It further pointed to considerable untapped innovation potential.

Past investments of Slovenia in RDI created a relatively R&D-supportive environment in certain areas; however, further attention should be placed on a more efficient use of the existing research infrastructure and full exploitation of the knowledge gained, as well as on commercialisation of developed products and/or services. 2014 will see an overview of the existing research equipment that received public funding, and the list will be annually updated. The existing research infrastructure (national and EU funding) and the existing partnerships between institutions will become the stepping stone on which to build infrastructure and institutional links in the national and EU setting, while being open for further pooling of potentials and their integration under coordinated structures.

³ http://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2012/countries/slovenia_2013.pdf

⁴ http://www.stat.si/novica_prikazi.aspx?id=5120

⁵ The combination of technological investments and human capital investments will enjoy cross-financing when the needs will be identified at the project level. The entire topic of support to human capital is covered by thematic objective 1.

⁶ Evaluation of measures to support R&D activities in the economy and knowledge institutions, MK Projekt, October 2012, <http://www.eu-skladi.si/skladi/crpanje-evropskih-sredstev/studije-in-vrednotenja/studije-in-vrednotenja-za-programsko-obdobje-2007-2013/vrednotenja-2007-2013/operativni-program-krepitev-regionalnih-razvojnih-potencialov>

2.2. INNOVATION POLICY

Deriving from the OECD Reviews of Innovation Policy: Slovenia (OECD, 2012), Slovenia should first and foremost address the following issues: improvement in framework conditions for innovations, strengthening of human resources base for science, technology and innovation, improvement in innovation system governance and general governance, alignment of policies and specific policy instruments, management of universities and public research organisations, performance of evaluations, strengthening of innovations for the business sector, reinforcement of links within the innovation system, work on critical mass, excellence and relevance of public research and improvement in benefits of internationalisation of R&D activities and innovations.

2.3. HUMAN RESOURCES IN RDI

Slovenian economy struggles with a serious shortage of engineers with a specialised technical knowledge and skills, whereas the supply of highly educated human resources having completed their studies is increasingly growing. The divide between the education system and the needs of the economy raises concern, and creation of a supportive environment is called for to help adapt the education to labour market needs and facilitate subsequent transfer of knowledge into market-oriented activities.

Male and female researchers among regularly employed persons in RDI (a total of 21,343) accounted for 59 % (9,093). The share of regularly employed female researchers in R&D activities stood at 36 % (7,700) and accounted for 36 % of all researchers (12,578). The volume of work carried out by regularly employed researchers and outsourcers in R&D activities in 2012 expressed in FTE equals 15,333 full-time working persons, of which 9,093 were researchers. Data on the total number of researchers suggest that their number considerably jumped in the business sector with Slovenia exceeding the EU average (2010: 44.9 %) in terms of the business sector share in total number of researchers by 6.5 percentage points⁷.

Inflow of highly qualified staff is essential for firms as the knowledge and international connections significantly help improve competitiveness. The number of researchers and other employed persons in the R&D sector has been on a steady increase for the last five years. The favourable trend of a growing share of researchers in the business sector and a growing share of individuals holding a doctorate in natural sciences and technical sciences⁸ was stimulated by certain measures of the state (young researchers, young researchers in the economy, interdisciplinary groups, enlargement of R&D units in firms).

2.4. SMALL AND MEDIUM-SIZED ENTERPRISES

Just like elsewhere in Europe, SMEs in Slovenia represent the majority of enterprises (SMEs: 99.8 %, micro enterprises 92.8 %). Contribution of SMEs to employment which stands at 70.6 % (against 67.5 % in the EU) and the contribution of SMEs to added value which stands at 63 % (against 58.4 % in the EU) are above the EU-average. The number of high-tech enterprises surpasses the EU-average but their added value in the economy equals that of the EU average. Slovenian SMEs are successful in

⁷ SORS, R&D activity, Slovenia, November 2012

⁸ The number of doctors of natural and technical sciences registered more favourable trends than the EU average levels in the 2005-2010 period. This trend abruptly stopped in 2011 when the number and share of doctors of natural and technical sciences in total number of doctors declined (IMAD, 2013 Development Report, p. 42).

providing green products and services in the market; however, they found access to public support measures for investments in resource efficiency hindered⁹.

2.5. ACCESS TO FINANCE

The key SME growth and development-hindering factor in Slovenia is the access to finance as SMEs find it more and more difficult to obtain loans, the latter, to make matters worse, being more expensive than those provided to large business entities by the banks¹⁰. On top of that, a large number of enterprises are over-indebted, and business assets severely deteriorating. The volume of loans to the non-bank sector in 2012 experienced a considerable decrease^{11,12}. Easing access to finance, in particular to alternative and innovative forms of finance has thus been put at the forefront of the efforts to promote SME growth and development, and special attention will be placed on the development of financial instruments.

Financial instruments in Slovenia are implemented by a number of institutions: non-bank institutions (various funds), SID Bank, venture capital funds and other financial intermediaries. As a consequence, potential beneficiaries find themselves confused as the offer is spread too thin, non-transparent and often ends up being duplicated. A transparent ESI Funds implementation system will bring together the relevant financial intermediaries and ensure an integrated approach to funding projects/measures.

The Holding fund was established in the context of the Slovene Enterprise Fund in the current financial perspective for the purpose of funding SMEs. The monies were ring-fenced for the following financial instrument: a **guarantee fund for bank loans with interest rate subsidies, and design and implementation of the following pilot instruments: development of venture capital funds, microcredits, seed and start-up credit lines, which helped gain invaluable experience in this field.**

2.6. STRENGTHENING ENTREPRENEURSHIP

In 2012, entrepreneurial activity did regain strength after a three-year decline; however, Slovenia still counts among the lower half of the EU Member States in terms of creation of new enterprises. Early-stage entrepreneurial activity and the share of entrepreneurs with business continuance both slightly grew in 2012. This shift could be attributed to enhanced self-employment subsidies given out during the crisis as the number of recipients grew considerably in the 2009-2011 period. Also, it should be noted that 1.4 % of adult population stopped pursuing entrepreneurial activity, which is 14.4 % of the total entrepreneurial activity. The major reason for discontinuance was the retirement (11 % against EU average of 7 %). Notwithstanding the formal legal equal footing with men in terms of taking up entrepreneurship activity, Slovenia found itself at the tail-end in Europe in terms of women participating in early-stage entrepreneurial activity (2.6 % adult females); internationally speaking this puts Slovenia in the 63rd place¹³.

Analysis¹⁴ of entrepreneurial activity by age groups shows that the distribution of early-stage entrepreneurial activity in Slovenia is very similar to the EU average. Among the established

⁹ http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2012/slovenia_sl.pdf

¹⁰ http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/files/countries-sheets/2012/slovenia_sl.pdf

¹¹ http://ec.europa.eu/enterprise/policies/industrial-competitiveness/monitoring-member-states/files/ms-compet-report-2013_en.pdf

¹² Bulletin of the Bank of Slovenia, May 2013, <http://www.bsi.si/iskalniki/bilteni.asp?Mapald=229>

¹³ Nezaznane priloznosti: GEM Slovenia 2012, 19 April 2013

¹⁴ <http://www.gemslovenia.org/news/> (Global Entrepreneurship Monitor)

entrepreneurs, namely those who have owned a company for more than three and a half years, two age groups stand out, namely the age group 35 to 44 years (+ 8 % compared with the EU average), and the age group 25 to 34 years (SI 7 %, EU 12.6 %). The analysis also established a low level of early-stage entrepreneurial activity of young people which is related to the fact that young people often tend to overlook business opportunities and are less successful in transforming them into more sustainable forms of entrepreneurial activity.

The educational structure and competences of entrepreneurs are one of the factors importantly shaping the quality and growth and development capacity of the entrepreneurial activity. Certain 2012 education-related data on entrepreneurs are reason for concern in that they show a downward trend in the share of entrepreneurs having a higher education qualification (from 44.3 % to 39.2 % in 2011), whereby the decline was even more pronounced for new entrepreneurs.

2.7. INTERNATIONAL COOPERATION

Since 2007 the Slovenian market shares have fallen both worldwide as well as within the EU¹⁵. Considering the EU average, Slovenian SMEs do seem to be more internationalised; however, data suggest that most of the revenue generated in foreign markets comes from large enterprises, whereas micro enterprises, which account for as many as 90 % of the Slovenian economy, generate merely 10 % in international markets. Analysis shows that Slovenia has been too focused on geographic markets which do not show signs of emerging markets. Most goods were exported in EU markets in 2012 (69.1 % of total exports), whereas the export in other countries remains more or less at the same level¹⁶. The share of exports in GDP in 2012 accounted for 73 %, the share of revenue in foreign markets representing 31.8 % of total revenue (2011 data). In terms of export of services Slovenia targets EU markets (72 % of the total exports of services in 2011). The market share of the Slovenian export of services remained modest in these markets and grew smaller during the crisis (by 3.5 %), with the exception of travel service providers that managed to increase their share in the EU market in the 2008-2011 period, even though the demand in the EU shrank in the given period¹⁷. The analysis of competitiveness and internationally-driven ambitions of early-stage entrepreneurs shows that as many as 32 % of emerging and new entrepreneurs plan to shift their activity to international markets (more than 25 % of customers abroad)¹⁸.

3. PRIORITISATION, PROCESS, FACTS AND ASSUMPTIONS

Smart Specialisation Strategy is not a new Slovenia's Development Strategy, nor is it a new research, innovation or industrial policy. Rather, it sets out guidelines in the scope of these documents on priority areas that represent a **common horizontal platform for a more targeted implementation of measures under different policies, achievement of synergies and optimum outcomes of all investments in R&D&I in the market**. Smart Specialisation Strategy aims to bridge the gap between the research sphere and the market, and the one between the knowledge institutions and the economy through integration in prioritised specialisation areas as much as possible.

The basis for the preparation of the Smart Specialisation Strategy are **Research and Innovation Strategy of Slovenia 2011-2020** which builds on continuous evaluation and identification of

¹⁵ http://www.umar.gov.si/fileadmin/user_upload/publikacije/pr/2013/POR_2013s.pdf

¹⁶ Statistical Office of the Republic of Slovenia

¹⁷ http://www.umar.gov.si/fileadmin/user_upload/publikacije/pr/2013/POR_2013s.pdf

¹⁸ Neznane priloznosti: GEM Slovenia 2012, 19 April 2013

specialisation areas and **Slovenian Industrial Policy 2014-2020** which pinpoints key technological areas and key industrial sectors on the basis of challenges. Smart Specialisation Strategy takes the approach to another level as it, by means of an in-depth analysis and public consultations, while taking into account other key documents (strategies and programmes) that indirectly address research, development and innovation (R&D&I) identifies narrow specialisation areas where Slovenia boasts the knowledge, capacities and opportunities.

Smart Specialisation Strategy is not a specialisation strategy merely in high-tech activities, but stands as a **strategy creating and raising added value in all activities** (and not sectors per se) in the areas where certain comparative advantages (capacities, competences) have been recognised or in new areas where market opportunities (trends) have been identified. Above all, the strategy represents a window of opportunity to restructure the economy and create jobs, mainly green jobs. The vision and measures of the strategy respond to global and societal challenges Slovenia is currently faced with and will be faced with in the decades to come. Above all, the strategy seeks to bridge the gap between the acquisition of basic knowledge and its further launch in the market in the form of goods and services, so-called valley of death.

3.1. ANALYSIS OF SECTORS AND TECHNOLOGICAL COMPETENCES AND CAPACITIES

Identification of priority areas for investments in R&D&I should be based on the facts that justify their relevance, existence of knowledge (competences) and capacities of the economy while taking into due account societal challenges (trends and markets, including access to raw materials) and key technologies.

Identification of smart specialisation areas built on already elaborated analyses and expert bases which represent:

- Slovenia's economic structure and relevance of individual areas and industries;
- past and estimated priority investments of enterprises in R&D;
- R&D areas and technologies which stand as the competence backbone of the science and the economy and reflect in competitive products, services and value chains;
- Key Enabling Technologies (KET).

Table 2: Share of industry and industry-related services in the structure of activities, 2012

Types of activities	Share in the number of employees	Share in net turnover from foreign market sales	Share in added value	Added value per employee in % vis-à-vis Slovene average
C Manufacturing	37.65	57.46	36.03	96

J Information and communication	4.05	1.80	6.76	167
M Professional, scientific and technical activities	6.57	3.02	7.05	107

Source: Centre for Conjunction Trends, Chamber of Commerce and Industry of Slovenia, 2013

An in-depth analysis of the sectors was carried out in 2012 (University of Ljubljana, Faculty of Economics; dr. Patricia Kotnik, 2012 and Slovenian Technology Agency) with a view to identifying most relevant areas in the economic structure in terms of employment, turnover and export as well as added value and the areas that demonstrate high levels of entrepreneurial and new economic activity. Branches being most relevant for the Slovene economy (share in employment and added value), those boasting most rapid growth in the last decade (2002-2011) and significantly export-oriented have been therefore identified as competitiveness in international markets acts as an important indicator of competitive advantage.

The branches were subject to monitoring at the level of the three-digit numerical code according to the Statistical classification of economic activities (e.g. Preparation and spinning of textile fibres) in order to represent more narrow product areas and not only the entire sections. Table 3 shows most relevant export-oriented branches by shares in the overall employment (above the 0.2 % figure and the share in total exports above the 1 % figure) as well as by shares in added value in 2011.

Table 3: Most relevant industries by employment, added value and exports, 2011

	Share in employment	Share in exports	Share in added value
29.3 – Manufacture of electrical and electronic equipment for motor vehicles	2.05	4.97	2.11
22.2 – Manufacture of plastic products	1.94	2.36	1.66
27.5 – Manufacture of domestic appliances	1.70	4.12	1.59
21.2 – Manufacture of pharmaceutical preparations	1.52	5.87	4.00
35.1 – Electricity supply	1.49	7.97	4.03
27.1 – Manufacture of electric motors, generators and transformers	1.45	2.17	1.30
25.1 – Manufacture of fabricated metal products	1.39	1.27	1.05
25.7 – Manufacture of locks, hinges and tools	1.30	1.19	1.03

16.2 – Manufacture of wood products and cork products, manufacture of articles of straw and plaiting materials	1.26	1.18	0.86
25.9 – Manufacture of other fabricated metal products	1.17	1.39	1.01
28.1 – Manufacture of machinery and equipment	0.91	1.41	0.71
24.5 – Casting of metals	0.83	1.12	0.74
22.1 – Manufacture of rubber and plastic products	0.68	1.68	0.81
24.1 – Manufacture of basic iron, steel and ferroalloys	0.65	2.30	0.85
29.1 – Manufacture of motor vehicles	0.55	4.45	0.86
20.1 – Manufacture of chemicals, fertilisers, compounds, plastics in primary forms and synthetic rubber in primary forms	0.50	1.08	0.76
17.1 – Manufacture of pulp, paper and paperboard	0.40	1.52	0.43
20.3 – Manufacture of paints, varnishes and similar coatings, printing ink and mastics	0.30	1.01	0.33

Source: Kotnik, P. Analysis of sectors and R&D activities..., 2013, p. 6.

Table 4 is an overview of most relevant branches in the entire 2002-2011 monitoring period by sections, shares in exports and added value per employee, size of the branch and its relevance from the aspect of employment and growth expressed by the number of new businesses in the industry.

Table 4: Most relevant and emerging industries by product groups, 2002-2011

	Most relevant branches	Emerging branches
Automotive industry and manufacture of transport equipment	(29) Manufacture of motor vehicles, trailers and semi-trailers; manufacture of other parts and accessories for motor vehicles; manufacture of coachwork for motor vehicles	(30) Building of ships and floating structures, aircraft and spacecraft, manufacture of railway locomotives and rolling stock (29) Manufacture of other parts and accessories for motor vehicles, manufacture of electrical and electronic equipment for motor vehicles
Material processing	(22) Manufacture of rubber and plastic products (25) Manufacture of fabricated metal products, processing of metals	(23) Manufacture of refractory products (24) Manufacture of basic iron and steel (25) Manufacture of fabricated metal products, metal finishing (16) Manufacture of wood products and cork products

Manufacture of electrical devices and equipment	(27) Manufacture of domestic appliances; manufacture of electric motors, generators and transformers (28) Manufacture of machinery and equipment	(32) Manufacture of medical and dental instruments and supplies (26) Manufacture of optical instruments (28) Manufacture of machinery and equipment (27) Manufacture of electrical equipment, manufacture of electric motors, generators and transformers, manufacture of electronic and electric wires and cables
Manufacture of materials	(21) Manufacture of basic pharmaceutical products (24) Manufacture of basic metals, basic iron and steel (20) Manufacture of chemicals, chemical products, paints and varnishes (17) Manufacture of pulp, paper and paperboard	(17) Manufacture of pulp, paper and paperboard (20) Manufacture of paints, varnishes and coatings
Other service activities	(71) Architectural and technical engineering, technical testing and analysis (62) Computer programming and consultancy (72) Scientific research and development	(72) Research and experimental development in natural science and technology

Source: Kotnik, P. Analysis of sectors and R&D activities..., 2013.

R&D intensity by branches reflects in the number of registered research groups in the enterprises of a certain branch, the share of employed researchers among total persons employed in the enterprises of a certain branch and in the share of internal expenditure of the enterprises on R&D in total sales.

Data on the employees and investment in R&D have been collected in the analysis of R&D activities in the business sector prepared by the SORS (Table 5). Relative indicators at the industry level in the 2008-2010 period have been shown as follows:

- the share of employees in R&D activities among total employed persons;
- the share of internal expenditure on R&D activities in total sales of the enterprise.

Table 5: Branches by R&D intensity, 2008-2010 period

Branch	2008		2009		2010	
	Employees	Expenditure	Employees	Expenditure	Employees	Expenditure
26.3 – Manufacture of communication equipment	11.8	12.8	17.7	23.0	17.3	21.5
72 – Scientific research and development	11.3	11.6	9.4	12.7	14.0	20.2
30 – Building of air and spacecraft, ships and floating structures	1.0	1.7	3.7	5.9	6.2	7.1

26.5 – Manufacture of instruments for measuring	5.3	5.5	5.6	7.3	7.2	7.0
26 – Manufacture of computer, electronic and optical products	4.5	6.3	3.4	2.0	3.8	1.7
21 - Pharmaceuticals	6.6	9.1	6.0	9.5	6.6	10.7
20 – Manufacture of chemicals and chemical products	2.3	0.9	2.7	1.2	2.8	1.4
62 – Computer programming	3.8	1.4	3.3	2.1	2.4	1.9
27 – Manufacture of electrical equipment	1.4	1.2	2.3	1.9	2.1	1.9
29 – Manufacture of motor vehicles	1.0	1.2	1.2	1.3	1.3	1.2

Source: Kotnik, P. Analysis of sectors and R&D activities..., 2013.

3.2. IDENTIFICATION OF KEY FOCUS PRIORITIES

The process of identifying the key priorities to be focused on in the field of R&D&I promotion requires a broad consensus of all stakeholders, therefore it took place in an open dialogue with the representatives of the economy, science and other interested stakeholders – civil society or non-governmental organisations.

Building on the analysis made and the key questions raised ...

- Where are our comparative advantages in terms of knowledge and competences in industry and science, which reflect in competitive products and services (leading industry) and have generated new business (innovative companies)?
- Where are the challenges of the market and the needs of the business sector for competitive performance?
- Where are the new or growing markets and where are the opportunities for the development of new industries?
- What kind of environment is needed to respond effectively to market trends?
- Where are the obstacles and weaknesses in the business environment?
- What is the role of the state and what are the priority measures of different policies?

... the thematic priorities were defined during the identification process. The thematic priorities are identified as the areas:

- with **comparable competences within the entire chain** from the basic knowledge to competitive products and services
- which have **well-founded capacities**, the existence of the leading innovative companies and groups with the skills for development investments, to connect and integrate the holders of knowledge in new value chains and the successful advancement to existing and new markets

- with the **broadest impact on successful development** of existing and new activities
- which reflect the **integration** into European development initiatives

... and are as follows:

1. **Manufacturing, process and information-communication technologies**
2. **Electric and electronic components and devices**
3. **Materials and technologies**

3.3. S3 Instruments

Slovenija plans to use a variety of instruments.

R&D&I policy mix:

- **International cooperation in science and technology:** The role that international cooperation play in ensuring an effective system of knowledge creation.
- **Knowledge infrastructure:** a modern and reliable knowledge infrastructure that supports innovation.
- **Knowledge networks and markets:** How policy can facilitate efficient knowledge flows and foster the development of networks and markets which enable the creation, circulation and diffusion of knowledge.
- **Tax incentives for R&D**
- **Direct support for business R&D** through grants or loans and loan guarantees.
- **Business networks** are important to create informed demand for network services, with networks preferably addressing precise market-driven objectives.
- **Knowledge and skills of people for R%D%I:** Education and training systems, along with formal and informal lifelong learning opportunities can equip people with the foundations to learn and develop the broad range of skills needed for innovation in all of its forms, and with the flexibility to upgrade skills and adapt to changing market conditions.
- **Innovation-oriented public procurement:** General public procurement that employs design features aimed at increasing innovation.
- **Support for risk capital** for early stage and seed financing for young innovative companies.
- **Public private partnerships:** a strategic cooperative and contractual agreement between three or more private and public stakeholders, involving substantial long-term public and private investment commitments in high-risk projects that revolve around broad, emerging scientific and technological fields.

SME policy mix:

- **Financing instruments:** Grants, loans and guarantee schemes and Equity financing.
- **Entrepreneurial culture:** By raising awareness and building the necessary skills, at all education levels, a new generation of entrepreneurially-minded people can be encouraged to create new jobs.
- **Entrepreneurial ecosystems** plays a role in facilitating entrepreneurship and innovation. This includes business (large and small firms as well as entrepreneurs), policy-makers (at the

international, national, regional and local levels), and educational institutions (at all levels but particularly at higher education institutions).

- **Human and social capital development:** At all investment stages, entrepreneurs may have difficulties in understanding the financing options available as well as the expectations of potential investors. We will use several instruments: Entrepreneur training, Investor training, Network development, Business angel networks, Incubators, Accelerators, Online investment tools and crowdfunding.

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