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Regional profile

Czech Republic

1 Introduction

The CrowdStream project

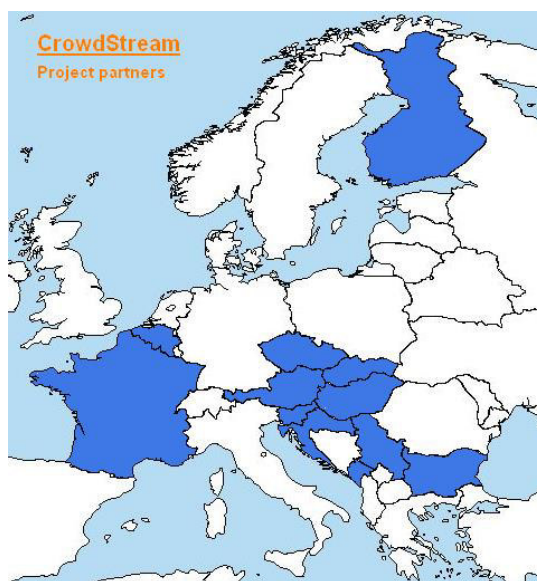
CrowdStream's main objective is to improve the effectiveness of public/private business-support for innovative spin-offs & social enterprises to access qualitative alternative financing (crowdfunding). The main project result will be improved cooperation between business-support-organisations and enterprises to guarantee a qualitative access to crowdfunding in the Danube region.

Crowd Stream outputs:

- ✓ Strategies for alternative finance (crowdfunding) in the Danube Region
 - Regional Action Plans
 - Policy recommendations for the region
- ✓ Quality tools for crowdfunding
- ✓ Capacity building for innovative small and medium enterprises (SMEs) and business support organizations
- ✓ Pilot actions

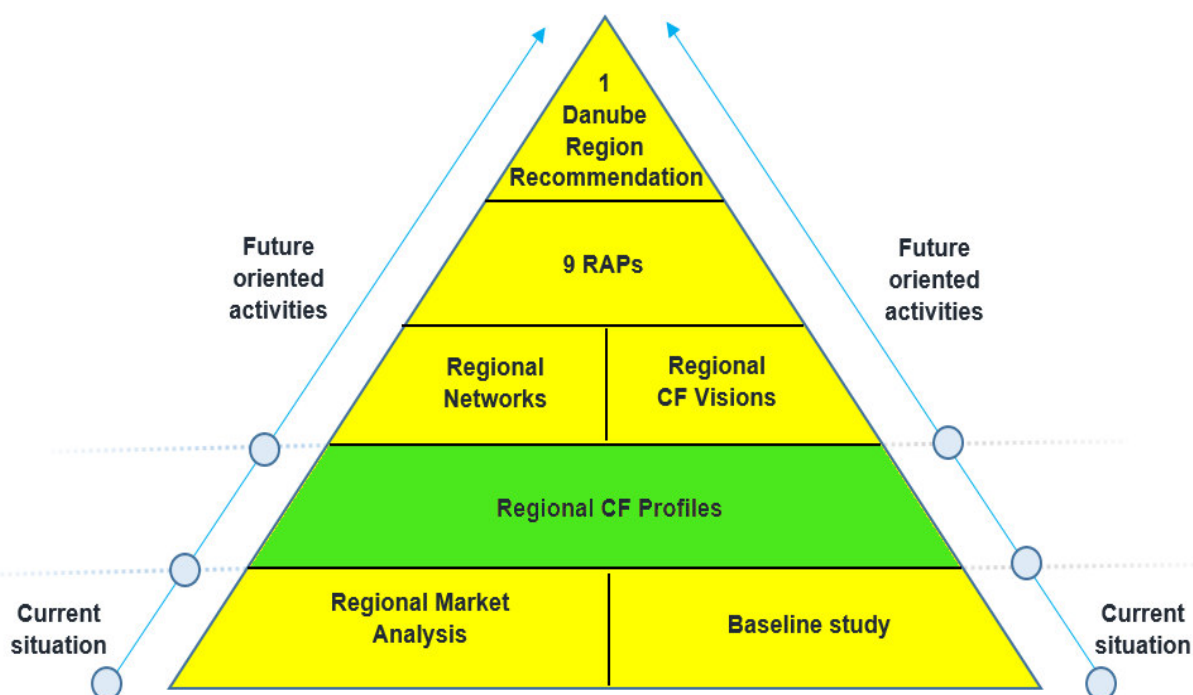
Who we are:

In this partnerships **16 organisations coming from 10 regions** aim at improving framework conditions for the development of alternative financing sources for SMEs in the Danube Region.



How we work:

The regional profiles will guide the project partners towards including relevant stakeholders in regional networks for developing the Regional Action Plan and the long-term targets on CF in their region (Regional CF visions). Those visions will enable the stakeholder groups to work jointly on the development and implementation of the RAPs and recommendations.



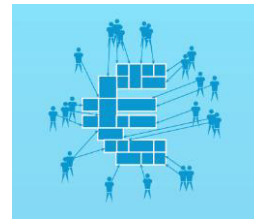
2 The regional profiles

- ✓ Describe the current situation of alternative finance in the partner regions
- ✓ Identify, inform and involve relevant stakeholders
- ✓ Support the development of common visions, Regional Action Plans (RAPs) and policy recommendations for the region

3 Crowdfunding basics

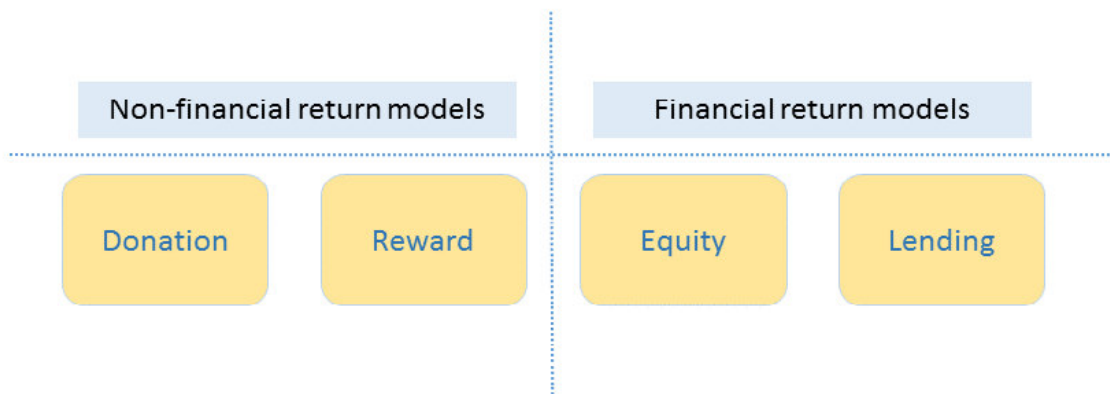
Types of Crowdfunding

Crowdfunding represents an effort from many individuals by offering a small contribution to support a project or a company in raising capital (*European Crowdfunding Network*).



Source: European Commission, Crowdfunding Explained to small and medium sized enterprises

In the case of **non-financial return crowdfunding models** individuals support a project because of emotional aspects of the campaign (donation-based) or they receive a symbolic award (reward model), which is not proportionate to the actual donation (*European Commission, Crowdfunding Innovative ventures in Europe*). The main advantages in the reward model can be attraction of first customers and a fast feedback on the commercial potential.



Financial return crowdfunding models provide an opportunity for the public to invest in start-ups or to offer loans with the expectation of a financial return while accepting some risks. The crowd could invest in early-stage companies (equity-based) or offer loans to SMEs under certain legal conditions (lending-based).

4 South Bohemia - general information

4.1 Regional characteristics and economic situation

The South Bohemia Region has a relatively large share of public science and research capacities and a diversified manufacturing industry. The region is not an agglomeration or industrial centre of European importance but it attracted significant foreign investments after 1989 due to its proximity to the advanced German and Austrian regions. In the economic structure, **traditional sectors** (food- processing industry, beverage production, stationery production, textile industry and cabinetmaking) are intertwined with **progressive sectors** (automotive components, electrical and electronic equipment, energy industry, IT). In addition to industry, an important role in the region is played by the **development of tourism**, which has a very good potential due to the preserved environment and many cultural attractions.

The attractiveness of the South Bohemia Region for business development is significantly enhanced by its location. In addition to the proximity to Upper Austria and Bavaria, the region is part of the transit routes connecting important Central European economic centres. With the influx of foreign investment in the manufacturing industry (mainly in the expansion of the production capacity) and the diversity of the manufacturing industry, the South Bohemia Region has, in the long term, **one of the lowest unemployment rates in the Czech Republic**.

On the other hand, it is clear that the structure of the regional economy with a lack of significant representation of high-tech manufacturing has resulted in a **relatively slow growth of the region**, and therefore the share of the South Bohemia Region in the total GDP of the Czech Republic **has been declining in recent years**.

In the South Bohemia Region, there are **2 public universities, 3 private universities**, the Faculty of Management of the University of Economics in Jindřichův Hradec and **1 public research institution**. The largest university in the region is the **University of South Bohemia in České Budějovice with 8 faculties and a total of 13,000 students**. Furthermore, there are several internationally recognised science and research teams and several newly built science and research institutes. These teams and centres focus **mainly on basic research**, which is evidenced by the fact that the expenditures on basic research are higher than the expenditures on applied research in the South Bohemia Region alone. The key problem is the absence of technically skilled workers.

The most important strategy document in Support Area RDI in the South Bohemia Region is the **Regional Innovation Strategy** in force for the period between 2010 and 2015. The Regional Innovation Strategy forms an annex to the Development Programme of the South Bohemia Region 2007 - 2013 (PA1 - Economic Development and Knowledge Economy),

and is in line with the newly prepared RDP 2014 - 2020 (PA1 - Competitiveness of the Regional Economy and the Labour Market).

In the strategic plan of České Budějovice, Support Area RDI is incorporated in PA3 - Programme for Economic Development. Support Area RDI has not been a priority for České Budějovice, which means that not many activities have been turned into action plans or implemented. Currently, the City of České Budějovice is preparing Integrated Territorial Development Plan (ITDP) 2014-2020, which is based on the principle of integrated approach - it includes territories forming a logical unit on the basis of selected thematic priorities. The preparation of the ITDP involved local science and research institutions, and reflects the set specific objectives of the Regional Innovation Strategy of the South Bohemia Region, among other things.

In the South Bohemia Region, a relatively large number of support schemes is being implemented. Most activities are being prepared in a rather uncoordinated manner so far. Three companies are in charge of the implementation of the individual schemes, besides the South Bohemia Region itself. Two of the companies perform these activities for the South Bohemia Region as community services **in the field of innovation** (the South Bohemian Agency for Support to Innovative Enterprising, the management of Phase I of the STP, consulting for entrepreneurs, the administration of the biotechnology portal; the South Bohemian Chamber of Commerce - events for entrepreneurs). JVTP a.s. is in charge of the construction of Phase II of the STP in České Budějovice. The exact specifications of the community services are approved by the Regional Council every year.

The South Bohemia Region further implements Business Missions and the Programme of Advantageous Regional Loans in the South Bohemia Region, designated for South Bohemian entrepreneurs. If a start-up wants to obtain a loan, the South Bohemia Region takes into account the evaluation by means of the "BLUES" methodology, carried out by JAIP. JVTP a.s. in cooperation with JAIP launched **regional subsidy schemes of innovation vouchers back in 2014** with financial allocation from Regional Authority.

Domains of Smart Specialisation for South Bohemian regions have been set within Regional RIS 3 as follows:

- **Biotechnology for sustainable community development**
- **Mechanical engineering and mechatronics**
- **Electrical engineering**

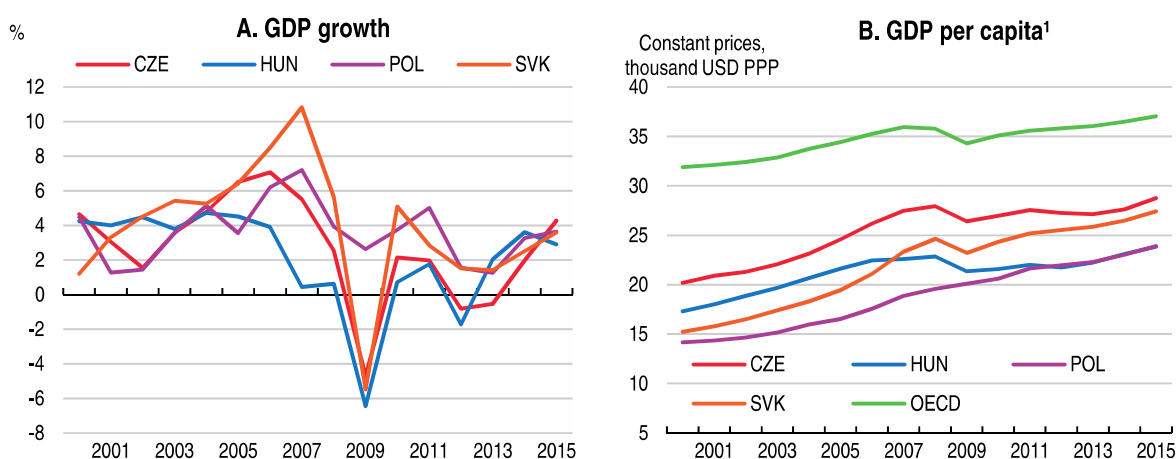
4.2 General investment situation in the Czech Republic

The Czech Republic is doing very well in terms of many aspects of well-being. It scores

higher than the average OECD country in indicators of overall personal security, work-life balance, social connections, and education and skills. The income dimension is where the Czech Republic lags the most behind the average OECD country (Figure 2). Improvements are also needed in civic engagement and governance, housing and health.

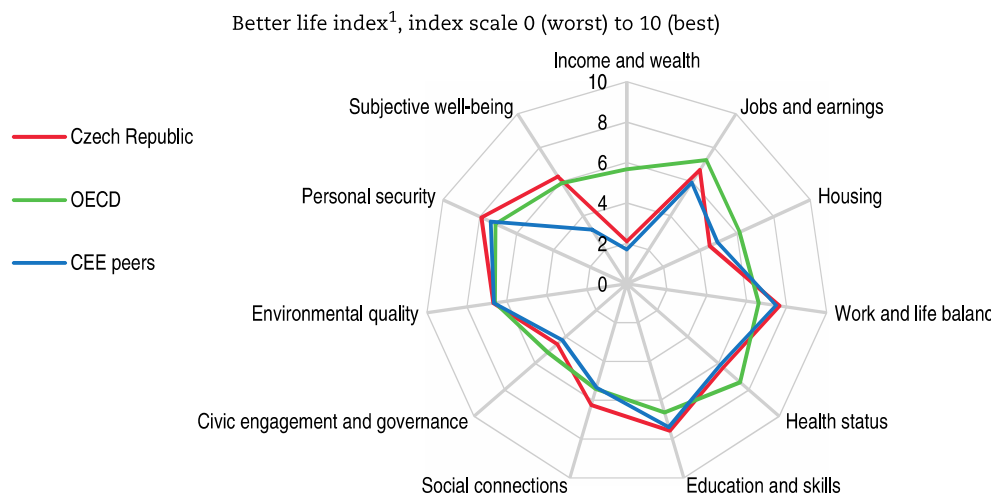
The Czech Republic is among the best performers in terms of inequality and poverty risks across OECD countries. Overall, inequality and poverty have stayed remarkably low in the past 15 years, even through the crisis. Inequality levels are fairly comparable among Czech regions, whereas poverty rates are high in the Northwest and Moravia-Silesia regions (but still below the OECD average) (Figure 3). These regional differences indicate where more initiatives to combat poverty are needed. ¹

Figure 1



¹ OECD Economic Surveys, Czech Republic, June 2016

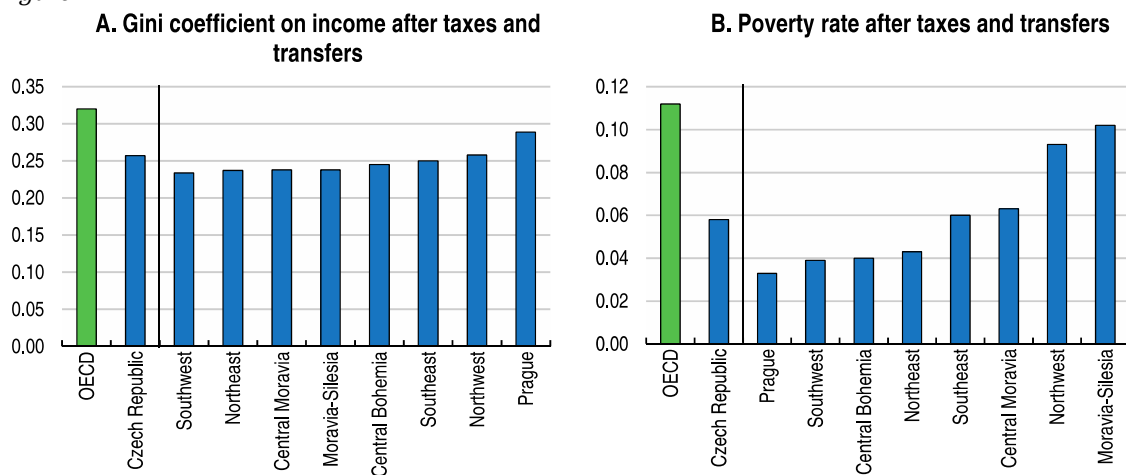
Figure 2



- For each dimension indicators are normalised according to the following formula: $(\text{indicator value} - \text{minimum}) / (\text{maximum} - \text{minimum}) \times 10$ and averaged. The OECD aggregate is population-weighted. CEE peers are Estonia, Hungary, Poland, the Slovak Republic and Slovenia. Note that the OECD does not officially rank countries in terms of their BLI performance.

Source: OECD (2016), OECD Better Life Index, www.oecdbetterlifeindex.org.

Figure 3



Note: The Gini coefficient is zero if everyone has the same income and is one if a single person has all the income. The poverty rate shows the share of the population with an income of less than 50% of the respective national median income. Income is after taxes and transfers, adjusted for differences in household size.

Source: OECD Regional Well-Being database <http://dotstat.oecd.org/Index.aspx?DataSetCode=RWB> and OECD Income Distribution database.

Investment in the Czech Republic has been 27 % of GDP on average over the past 10 years. In the EU as a whole, it has been 21%. Over the same decade, investment has contributed 0.5 percentage points on average to an annual real growth rate of 2.5%. At the same time, these figures mask a bigger drop in investment in recent

years compared to the EU average. When looking at specific areas of investment, the shares of construction other than housing and the energy sector have fallen, probably suggesting a fall in key investment in infrastructure in recent years. Investment in equipment and the manufacturing sector has risen since the 1990s, while both public and private R&D investment has also increased. Investment is expected to be quite strong in the coming years, amid improving economic conditions and as the government works towards a best possible, efficient use of its EU funding.

Public investment dropped significantly in 2009-2013, mainly because it was one of the main drivers of fiscal stability measures during that time. Public investment dropped by more than 10% on average since 2010 and overall the retrenchment amounted to almost one third of the 2009 level. This is probably because of problems in using EU Funds effectively, new public procurement rules, local governments investing less, and across-the-board savings disproportionately affecting investment. This development is likely to have negative repercussions on economic growth. The key challenge ahead is to revive public investment whilst increasing its efficiency and effectiveness.

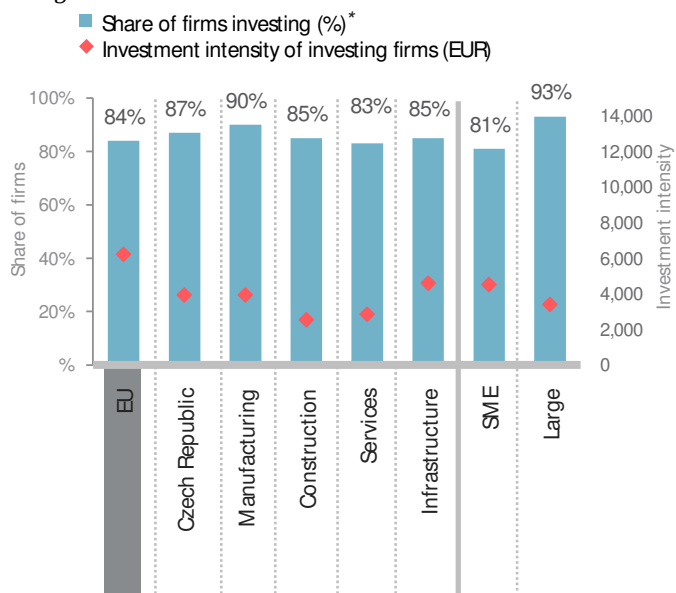
The most promising sectors in need of more investment include **education, R&D, transport infrastructure and energy**. These sectors are crucial to help move the Czech economy to growth that is based on innovation, higher value added, human capital and a low-carbon economy. The rate of investment in education has stalled in the past two decades and is still below the EU average. A big challenge is to accelerate the emergence of domestic innovation leaders and to encourage cooperation between the science and business sectors. Relatively under-developed transport infrastructure remains detrimental to the environment and to economic growth. Insufficient investment in the maintenance and reconstruction of the transport network in recent years has also led to deficiencies in safety and capacity. Finally, there is scope to invest in energy efficiency as the Czech economy is one of the most energy-intensive economies in the EU. ²

As for the investment dynamics and in line with robust investment figures on the macro level, overall, 87% of firms in the Czech Republic invested in the last financial year. While the share of investing firms is comparable to the EU, Czech firms invested some 2,300 euros per employee less than their EU peers (Figure 4).³

² European Commission, Investing in Europe's future, 2015

³ EIB Group Survey on Investment and Investment Finance 2016

Figure 4



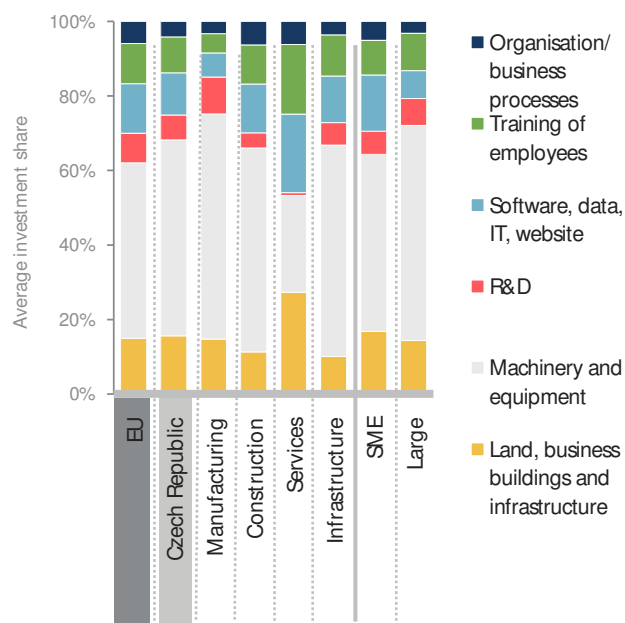
On balance, investment activity increased year on year. While around half of firms in the Czech Republic kept their investment constant, 31% increased their investment activity thus overcompensating 15% of firms which invested less, in line with the EU averages.

Investment acceleration was particularly pronounced in the construction sector compared to other sectors. Macroeconomic data suggest that mainly construction of dwellings recovered noticeably.

The largest share - slightly more than half (53%) - of investment in the Czech Republic went to machinery and equipment, above the EU average of 47%. This corresponds to a strong increase in equipment investment on the macro level in 2015 (8.5%).

Manufacturing firms spend particularly large shares on machinery and equipment (60%) as well as on R&D (10%). Positively, the share of investment going to R&D (7%) is in line with the EU (8%).

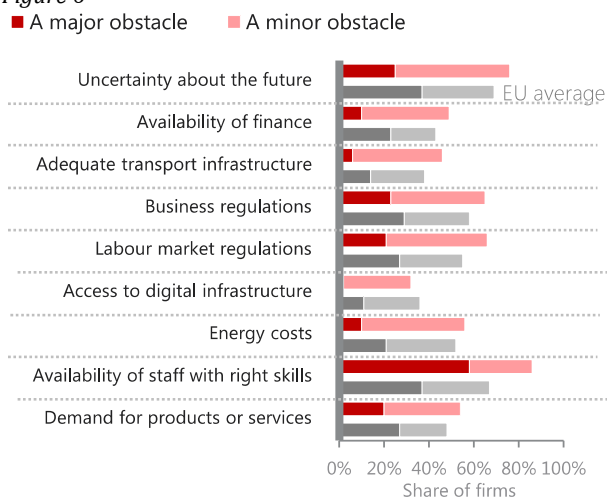
Figure 5



In line with the EU aggregate, the political and regulatory climate is perceived as the main barrier to investment in 2016. All other factors have played a strong positive role. In the context of tight labour market conditions on the macro level, lack of skilled staff is a long-term obstacle to investment for nearly nine in ten and for six in ten it is a major impediment (higher than the EU average). Uncertainty about the future is another long-term barrier to investment for nearly 80% (70% in the EU) of interviewed firms in the Czech Republic. Yet, unlike in the EU, most firms see it only as a minor obstacle (Figure 6).⁴

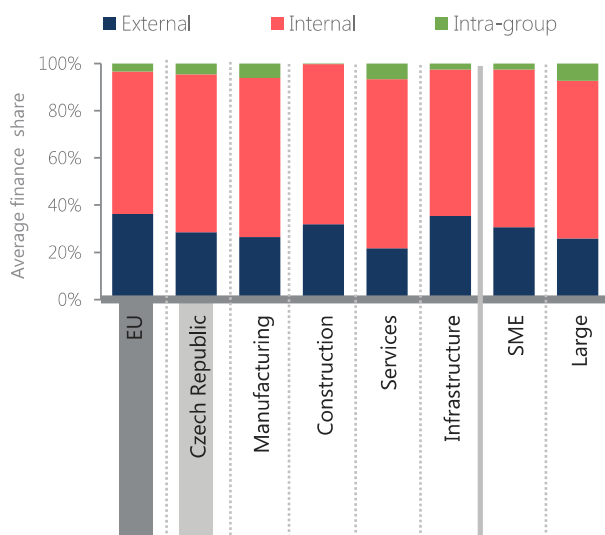
⁴ EIB Group Survey on Investment and Investment Finance 2016

Figure 6



More than two thirds (66%) of firms' investment finance comes from internal funds, above the EU average of 60%. Nearly three in ten of investment finance comes from external sources, mostly bank loans (55%), in line with the EU. Firms using external finance are on balance (often very) satisfied with all financing conditions, though slightly less so with collateral requirements.

Figure 7



In general, firms in the Czech Republic tend to want more of the type of external finance they are already using, especially bank loans. An exception are overdrafts. They currently amount to nearly 30% of external finance but only four per cent of firms state that they

would like them to play a more prominent role.⁵

Over the past few years, the Czech Republic has significantly increased its focus on both green field investments and the expansion of existing investments. It currently has the most positive attitude to incoming investors in its history. Investors can obtain the following financial benefits:

- investment incentives – tax holiday + cash grants;
- subsidies from EU funds – cash grants;
- R&D tax allowances;
- education tax allowances.

All benefits are provided according to the law and transparency rules, which are in compliance with EU regulations. In this respect, some measures have been redesigned further to a change of EU rules in 2014. EU regulations have generally become stricter and to a certain extent limit the granting of incentives by individual member states. The Czech government responded to the new rules with an amendment to the Czech Act on Investment Incentives, effective since May 2015. The aim of the last amendment is to increase the attractiveness of investment incentives for investors and to reduce the impact of the new EU rules on them. The information below is based on the new legislation.⁶

Incentives are provided in the following forms:

- corporate income tax relief for up to 10 years (tax holiday);
- employment subsidies in the form of cash grants for job creation and training (only available in regions with high unemployment rates);
- cash grants for strategic projects;
- availability of land at discounted prices;
- exemption from real estate tax in selected industrial zones.

4.3 Financing of innovation

R&D spending in the Czech Republic has been increasing since 2003 and amounted to 2% of GDP in 2014. This represents a significant effort towards setting up a performing innovation system. Spending on R&D is still below the OECD average (2.4% of GDP). It is evenly distributed among basic research, applied research and experimental

⁵ EIB Group Survey on Investment and Investment Finance 2016

⁶ KPMG, Investment in the Czech Republic, 2016

development. Business enterprise research and development (BERD) represents the biggest share of R&D spending but government spending is 40% of the total. BERD is mainly by firms that are foreign- owned or affiliated to foreign enterprises (56% of BERD in 2014).

Nevertheless, R&D intensity remains relatively modest for a country with such a large manufacturing sector. One reason is that Czech firms affiliated to foreign companies, in particular in manufacturing, tend to be concentrated in the low value-added segment of the global value chain with low R&D.

Despite the sustained effort to increase R&D spending, the innovation performance of the Czech Republic remains mixed. In the European Union's classification of country innovation performance, the Czech Republic is classed as a moderate innovator (European Commission, 2015b). The manufacturing sector has only a moderate innovation performance. Lacklustre performance also reflects that SMEs, which are the vast majority of firms, do not innovate much (OECD, 2015d).

The organisation and administration of R&D and innovation (RDI) policies is still too complex. Spending is divided among 11 ministries and bodies and 7 types of financial support (Government of the Czech Republic, 2015). There are also initiatives at the regional and industry levels. This creates a fragmented system of support. There are also overlaps between the different strategies (Innovation, SMEs and Exports) and the programmes put in place for their implementation. Some restructuring has already been made with the merging of some spending bodies in the Technology Agency. The fragmented organisation of R&D between universities and the institutions pertaining to the Academy of Science is amplified by the competition for research funding based on grants and on the institutional funding allocation based on a points system. Moreover, while university funding is managed by the Ministry of Education, the Academy of Science has its own budget chapter and the Council of Research and Development and Innovation is an advisory body to the government responsible for R&D strategy, evaluation and R&D budget allocation. On the other hand, innovation policies are mainly managed by the Ministry of Industry and Trade.

The fragmentation of innovation policies seems to be partly driven by the specialisation of the different bodies along with a limited set of financial instruments available to each. The intended creation of the Ministry of Science and Research could be an opportunity to put all research institutions under the responsibility of the same institution and give that institution the mandate to co-ordinate the design, implementation and evaluation of R&D and innovation policies. First steps were taken in 2014 by establishing the position of Deputy Prime Minister in charge of Science, Research and Innovation within the Office of the Government.

The Czech Government has put in place programmes to encourage higher business R&D

spending by intensifying collaboration between businesses and research institutions. These programmes are financed by EU funds as well as from national resources (the new high-tech R&D support programme TRIO and programmes administered by the Technology Agency of the Czech Republic). However, direct government funding of business RDI is modest, representing 0.1% of GDP in 2013.

Government support for business R&D through tax incentives increased by 12.2 percentage points between 2006 and 2013, to 32.1% of government R&D spending (OECD, 2015d). Tax incentives are more neutral, except for firm size, and less government-guided than grants are, as firms have to mobilise their own resources toward their own projects before claiming the tax refund. However, grants tend to be more effective in spurring RDI spending and they correspond more to SMEs' needs for RDI.

Venture capital is very low in the Czech Republic (0.006% of GDP in 2014) and essentially non-existent for seed and start-up enterprises. This produces a financing gap for early-stage innovative companies. To remedy this, the government is planning to set up an innovation fund with the participation of the European Investment Fund. Also, a guarantee programme for innovation is being developed, jointly financed by the EU and managed by the Czech-Moravian Guarantee and Development Bank (CMZRB). The main instruments envisaged are loans, financial guarantees and grants for SMEs, while consultancy services for start-ups will be supported by grants only. While targeting the early financing of seeds and start-ups is appropriate given the lack of risk capital available for these projects, the choice of instruments should be considered carefully. Some grants are necessary to encourage the development of innovative initiatives. Also, fiscal incentives could be considered for venture capital investments in innovation. Moreover, in addition to venture capital, the development of seeds and start-ups necessitates a favourable ecosystem constituted of high quality infrastructure, available skilled human resources, frontier research and a business-friendly environment.⁷

⁷ OECD Economic Surveys, Czech Republic, June 2016

5 Regional Analysis on crowdfunding

5.1 CF actors (platforms, initiatives, intermediaries etc.)

see Stakeholder Mapping Template

5.2 Available types of CF

In the Czech Republic, the Crowdfunding market is still in its developing phase, with project size and investment volume being relatively modest. Cultural and social projects significantly outnumber start-up funding or other business transactions. The following types of Crowdfunding are currently functioning:

The Equity Model

This model represents the case when individuals make investments in return for a share in the profits or revenue generated by the company/project). A Crowdfunding platform using the Equity Model has yet to emerge, although there are already some platforms operating on the market (see above)

The Lending Model

This one is the model when individuals lend money to a company or project in return for repayment of the loan and interest on their investment).

The Lending Model is still emerging in the Czech Republic. Couple of platforms specialising in peer-to-peer lending currently exist, even though lending volume is low and private loans to individuals currently outnumber business loans.

The Donations or Rewards Model

Individuals provide money to a company or project for benevolent reasons or for a non-monetary reward.

The Rewards Model is the most developed Crowdfunding model, with several platforms functioning. While the majority of Crowdfunding ventures still support cultural or social projects, funding for start-ups is no longer uncommon. Please note that it is not appropriate to refer to a Donations Model, as the current platforms do not accept pure donations – instead, they structure the transactions as a sale of the offered rewards.

This is done in order to avoid falling under the scope of Act No. 117/2001 Coll. on public collections, as amended the “APC”, which imposes significant administrative limitations on the public collection of donations (see 5.4 for more).

5.3 CF volume of investment

Data available only for national level – **around 100 mil. EUR since 2011.**

5.4 Existing Regulation Framework

Existing Czech Crowdfunding platforms usually chose the Rewards Model due to the fact that the regulations of capital markets or of collective investment together with regulations on public collections do not apply on the Rewards Model. The Equity Model, due to the regulatory requirements, is the most expensive variant. See for further details further.

Related legal regulations in the Czech Republic

Licence under the Act no. 240/2013 Coll., on management companies and investment funds, as amended (the “AMCIF”)

Equity Model

Investing in return for a share in the profits or revenue generated by a company/project is defined by the AMCIF as a form of collective investment.

Such activity corresponds most closely to the definition of an investment fund under the AMCIF. An investment fund is either a joint-stock company with its registered office in the Czech Republic or a mutual fund (which is merely a collection of funds and has no legal personality) that is entitled or the purpose of which is (i) to collect funds from the public by issuing shares/participation certificates and (ii) to perform the collective investment of the collected funds on the basis of a given investment strategy based on the principle of the division of risk for the benefit of the owners of the shares/participation certificates and further (iii) to manage the funds (“Investment Fund”).

An Investment Fund can either (i) be managed by a management company, (ii) exist in the form of an Investment Fund which is entitled to manage itself or (iii) exist in the form of an Investment Fund which is managed by its executive body being a management company. All three possibilities (a management company, a self-managing Investment Fund and an Investment Fund managed by its executive body) are required to obtain a licence from the Czech regulator (i.e. the Czech National Bank).

The capital of an Investment Fund has to reach at least EUR 1,250,000 within six months of the date of the establishment of such Investment Fund. Given this high capital requirement, Crowdfunding platforms or project companies in the Czech Republic usually do not choose the Equity Model.

If a project company or a Crowdfunding platform acting under the Equity Model would intend to provide investment services, it would have to be properly licensed under Act no. 256/2004 Coll, on capital markets, as amended (the “Capital Markets Act”).

Lending Model

Under Czech law, the lending of money by individuals to a company/project in return for repayment of the loan and interest is a non-regulated activity. Despite the fact that the lending of money would occur through an online Crowdfunding platform, there are no regulatory requirements under Act no. 21/1992 Coll, on banking, as amended (the “Banking Act”). However, general civil and commercial rules on lending must be observed.

The Crowdfunding platform would also have to obtain a trade licence in order to be entitled to organise collective lending and borrowing.

Act no. 145/2010 Coll., on consumer credit (the “Consumer Credit Act”) only applies to individuals as consumers, not to companies. Should the project be undertaken by an individual who is to be granted loans under the Lending Model, he/she cannot be qualified as a consumer within the meaning of the Consumer Credit Act, as long as he/she is going about his/her business activity or performing his/her profession in an independent way.

Donations or Rewards Model

The provision of money by individuals to a company/project for benevolent reasons or for non-monetary reward constitutes an exemption under the AMCIF. Collecting funds or assets that can be valued in money the main purpose of which is the financing of activities that relate to the production or sale of goods, research or the provision of services (other than financial services) and further management of such collected funds or assets that can be valued in money (or assets gained for such funds or assets that can be valued in money) does not constitute collective investment. Such activity is thus not regulated by the AMCIF. However, a Crowdfunding platform which would organise such collection of funds would have to obtain a trade licence for these purposes.

Furthermore, the requirements of the APC apply to the Donations Model. The APC applies to any activity by which voluntary donations are being collected from further unspecified members of the public (the “Public Collection”) and imposes several restrictions. In particular, Public Collections may only be held for publicly beneficial purposes, such as humanitarian purposes, charity, education, sport, protection of cultural items, cultural heritage or the environment. Any Public Collection has to be notified to the relevant Regional Authority (in Czech: “krajský úřad”). The Regional Authority subsequently scrutinizes the application and may reject it for non-compliance with the statutory requirements, in particular if it finds that the purpose of the Public Collection is not publicly beneficial. Furthermore, detailed records of the contributions must be kept and

must be submitted to the Regional Authority after the Public Collection has finished.

Due to the aforementioned administrative requirements and the fact that Crowdfunding of certain types of projects (e.g. business start-ups) would rarely satisfy the conditions of public benefit, current Crowdfunding platforms refrain from the use of the Donations model. Instead, the Rewards model is used where each project typically has to define rewards for contributors and the contribution is structured as a sale of such reward, thus falling out of the scope of the APC.

Licence under the Act no. 284/2009 Coll, on payment services, as amended (the “Payment Services Act”)

Should the Crowdfunding platform intend to perform payment services itself in the Czech Republic, it would have to be properly licensed. There is the possibility to become either (i) a payment institution, (ii) a small-scale payment service provider, (iii) an electronic money institution or (iv) a small-scale electronic money issuer under the Payment Services Act. Becoming a payment institution or an electronic money institution requires a licence granted by the Czech National Bank. Becoming a small-scale payment service provider or a small-scale electronic money issuer requires registration with the Czech National Bank.

In any event, the Crowdfunding platform could also outsource payment services, which would not trigger any licensing or registration requirements.

Possible regulation of Crowdfunding platforms under the AIFMD regime in the Czech Republic

- Status of AIFMD implementation
Act no. 240/2013 Coll., on management companies and investment funds, as amended (i.e. AMCIF, as mentioned above), which implements the Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers (“AIFMD”), has taken effect as of 19 August 2013 (with certain provisions taking effect at a later date).
- Definition of an alternative investment fund (“AIF”)
Under the AMCIF, an alternative investment fund constitutes either a special fund or a fund of qualified investors. A special fund under the AMCIF is defined as an Investment Fund which does not fulfil the requirements stipulated by the law of the European Union and thus is not registered in the relevant register kept by the Czech National Bank.⁸

⁸ Review of Crowdfunding Regulation, ECN, 2013

6 SWOT analysis of regional CF potential

STRENGTHS

- The existence and trend of placement of new research, development and application centres of major technology companies.
- The existence of companies with technical profiling with advanced technologies and processes with a significant growth potential.
- Strong integration and cooperation ties between technically oriented companies and the European transformation and innovation environment.
- Emerging networks and innovation infrastructure (Science and Technology Parks, Technology Transfer Centres, the Design and Innovation Centre, the Technology Consortium with leading industrial companies in the South Bohemia Region), tradition in cross-border cooperation within the Euroregions.
- The presence of the faculties of the University of South Bohemia and research institutions with cutting-edge research in the area of biological sciences.
- Emerging applied research in response to major social challenges (climate change, environmental risks).
- A competitive workforce in terms of costs.
- Excellent internationally recognised research teams and tertiary education in science (especially biology and ecology).

WEAKNESSES

- A low number of companies implementing advanced technological innovations.
- Fragmented and underdeveloped services for start-ups (especially for young technology companies).
- Low level of knowledge on crowdfunding and its potential
- Lack of pro-active networks that connects scientists and investors and helps growing young businesses and start-ups
- Lack of investments (seed capital, risk capital) and access to it
- A low degree of initiative on the part of the population.
- Low information linking of SMEs in the context of entire business chains
- Lack of communication and awareness of the academia and the research community towards enterprises and vice versa, and the resulting lack of cooperation.
- A limited capacity of applied and industrial research.
- Poorly identified priorities of targeted research in the region.
- Lack of popularisation of RDI activities in the region and science communication with the general public.
- Lack of graduates and qualified workers in technical fields.

- Selective migration (loss of talent).
- Lack of highly qualified personnel in RDI.
- A low interest in the studies of science and technology among students of primary and secondary education.
- Lack of personnel in R&D with professional knowledge of management, marketing, B2B, innovation and technology transfer.

OPPORTUNITIES

- New and easy way to finance innovative projects.
- Strengthening the support of foreign and Czech company investments in products and services with a higher added value.
- Removing the barriers to a unified European market and the transition to the euro.
- Reducing bureaucracy, simplifying the administration system and increasing transparency in the allocation of funds.
- Increasing the attractiveness of business plans for potential investors in terms of legal and financial conditions.
- Not yet revealed sectors ideal for crowdfunding – e.g. renewable energy projects, community utilities, etc.

THREATS

- Failure to improve legal framework in order to expand and access crowdfunding.
- Distrust of the business community and current infrastructure.
- Focus of regional industry and enterprises often not suitable / feasible for crowdfunding approach.
- Underestimation of potential operators of CF platforms when implementing technical solutions.

7 Regional development demand

7.1 Investment and business environment

The South Bohemia Region has no agglomeration or industrial centre of European importance. The main sectors represented in the region include:

- **traditional sectors** with good raw material bases and clear ties to the purchasers of such basic raw materials; on the other hand, these sectors are of a rather stagnant character with necessary elements of restructuring (for example stationery and cellulose production, wood- processing industry, graphic-arts industry and cabinetmaking, production of other non-metal mineral products, such as building materials, textile industry and food-processing industry tied primarily to agriculture, etc.);
- **progressive growth sectors** in the national and global context, developed in the South Bohemia Region also in relation to foreign direct investment, with a high share in the export performance of the region (such as the production of components and parts for motor vehicles, production of metal structures and other metal products, production and repairs of machinery and equipment, production of medical, precision, optical and clocking devices, the energy industry, etc.);
- **tourism** - the South Bohemia Region has good natural conditions for tourism (landscape, major monuments of cultural heritage, sports and culture, preserved environment, convenient location, etc.) and prerequisites for its further development, and has a positive impact on the growth of the directly related sectors of transport, construction, culture, trade, sports, etc.

Given the history of the region and the focus of science and research capacities, it should be noted that the area of Biotechnology plays a very important role in the South Bohemia Region. In the preparation of the STP construction in České Budějovice, an analysis of companies operating in this field and related fields (food-processing, agricultural, medical, environmental and molecular biotechnology) was carried out, mapping the R&D activities of the companies and their interest in cooperating with South Bohemian R&D institutions. The field of biotechnology is connected to the well-functioning food-processing cluster - “Chutná hezky Jihočesky” (South Bohemian Tastes Good) that aims to promote regional products, and to the Brewery Cluster. Under the University of South Bohemia in České Budějovice, the Czech Biotechnology Platform (CEBIO) is emerging; its aim is to bring together as many biotechnology entities as possible in order to improve cooperation between science and research institutions and companies.

The activities of the most important South Bohemian businesses fall within the

manufacturing industry. These are mainly companies that supply their products to the **automotive and aircraft industries, or that manufacture mechanical engineering and foundry products and electrical products**. In 2012, the Technology and Education Consortium at the Institute of Technology and Business (ITB) was established; it brings together universities, secondary schools and companies with a focus on technology, and its main aim is to improve the quality of the study programmes so that the graduates are better suited for the requirements of the labour market.

Other important sectors in the South Bohemia Region include **energetics** (in connection with the location of the Temelín Nuclear Power Station) and **renewable energy sources**. In addition to major enterprises, we should mention the Czech Biogas Association, that is based at the České Budějovice STP and that is the national technology platform for the production and use of biogas. The CzBA brings together more than 60 members including leading science and research institutions, suppliers and manufacturers of technologies, operators of biogas plants and other experts not only from the Czech Republic. The ENKI Science and Technology Park (ENKI STP) and associated companies focus on solar and landscape energy.

Companies focused on IT are gathered together in the Czech Cloud Cluster under TC Písek, the Czech IT Cluster and the IT Club under the South Bohemian Chamber of Commerce.⁹

7.2 Innovation

Science and Research Infrastructure

In the South Bohemia Region, there are **two public universities** (+ the Faculty of Management of the University of Economics), **three private universities** and **one public research institution**.

In the area of RDI, the following are important:

The largest university in the region is the **University of South Bohemia in České Budějovice** (USB) with **eight faculties** (the Faculty of Economics, the Faculty of Philosophy, the Faculty of Education, the Faculty of Science, the Faculty of Theology, the Faculty of Health and Social Studies, the Faculty of Agriculture and the Faculty of Fisheries and Protection of Waters). It is clear that the USB is made up of faculties of very different focuses and that the science and research work is rather diverse there. According to the

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CERGE study, international recognition is achieved mainly by the science teams under the fields of the ecology of communities, biophysics and molecular and evolutionary biology at the Faculty of Science, and under the field of fish genetics at the Faculty of Fisheries and Protection of Waters. The above corresponds to the proportions of students in doctoral study programmes and graduates thereof. The science and research activities of the university are characterised by the close cooperation of the university with the institutes of the **Academy of Sciences of the Czech Republic**, in particular with the **Biology Centre**; this cooperation strengthens the research and educational character of the scientific fields at the USB.

With the support of the OP RDI programme, the **South Bohemian Research Centre of Aquaculture and Biodiversity of Hydrocenoses** under the University of South Bohemia was established. The centre's mission is to implement a total of six research programmes focused on the quality of fish meat: the technology of caviare production; innovation of methods of production of fish species that are important in terms of economy and sports; the development and innovation of systems of continuous monitoring of water quality, using fish and crayfish as bio-indicators within the management of water reservoirs; innovation of the monitoring of the presence of contaminants in the environment; the assessment of the impact on exposed organisms with the possibility of elimination in waste-water treatment processes, and the creation and use of a knowledge base for the development of experimental techniques.

Under the CEBIO Czech Biotechnology Platform, the establishment of the Technology Institute of the University of South Bohemia in České Budějovice is planned; the Technology Institute will focus on 2 areas - the traditional field of Biotechnology and a newly prepared area of Mechatronics that is to lay the foundations for new technical fields. In this respect, the USB cooperates with the CTU in Prague and the regional application sphere.

The most important public research institution in the South Bohemia Region is the **Biology Centre of the Academy of Sciences of the Czech Republic**, public research institution (BC) that was formed by merging **five South Bohemian institutes of the Academy of Sciences** (the Institute of Entomology, the Institute of Hydrobiology, the Institute of Parasitology, the Institute of Plant Molecular Biology and the Institute of Soil Biology) in 2005. According to the Hirsch index, a recognised scientific metric system, many scientists of the BC are, in their respective fields, **among the most cited and respected in the world**. Thanks to their excellent knowledge, they also boast numerous government and academic awards. The BC is more and more focused on increasing the knowledge potential of the population of the South Bohemia Region, especially on non-formal education at all levels of the education system, science communication and two-

way dialogue with the public in the South Bohemia Region.

Another public university in the South Bohemia Region is the **Institute of Technology and Business (ITB)** in České Budějovice (so far the youngest public university in the Czech Republic). The ITB is a public university that is not divided into faculties. Currently, the ITB offers four Bachelor 's study fields (Transport, Mechanical Engineering, Civil Engineering and Economics) and one Master's field (Logistics Technologies). Research, development and creative activities are performed in the context of the studies. The university has recently opened a Centre of Technical Studies under the Secondary School of Mechanical and Civil Engineering in Tábor that offers the field of Mechanical Engineering as a Bachelor's degree (specialisation in Advanced Materials).

Other R&D institutions in the South Bohemia Region include the **Institute of Botany of the Academy of Sciences of the Czech Republic**, public research institution in Třeboň that is primarily engaged in basic research in the field of plant ecology and the taxonomy, ecology and physiology of cyanobacteria and algae. At the same time, it is involved in applied research projects. There is an analytical laboratory specially equipped for chemical analyses of surface water, ground water and waste water and for analyses of soil and sediments; the laboratory is available to both science departments and external customers.

In Třeboň, there is also a Detached Centre of the **Institute of Microbiology**, public research institution of the ASCR that focuses on the study and use of photosynthetic microorganisms, green algae, cyanobacteria and photosynthetic bacteria. With the support of the OP RDI programme, the Algatech Centre for Algal Biotechnologies was built.

The last of the institutes of the Academy of Sciences represented in the **South Bohemia Region is the Global Change Research Centre**, public research institution (GCRC) with branches in České Budějovice and Nové Hrady. The most important institution in České Budějovice is the **Biodiversity Research Department**, whose main goal is to conduct fundamental research in fields including evolutionary ecology. Other important institutes include: The Laboratory of Metabolomics and Isotope Analyses and the Department of Carbon Storage in the Landscape. The Institute of Nanobiology and Structural Biology of the GCRC in Nové Hrady includes the excellent Department of Cell Biology that focuses on understanding the functioning of the brain and the Department of Structure and Function of Proteins with a focus on clarifying the relationships between the structure and functions of proteins, the dynamic changes related to the functional processes at the level of proteins and the interaction of common factors and subunits in the protein complexes.

The Nové Hradý Institute also includes: The Department of Crystallogenesis and Biomolecular Crystallography and the Department of Nanobiotechnology.

Regional innovation infrastructure

Currently, **Phase I of the South Bohemian Science and Technology Park in České Budějovice** is in operation. The project implementer is the University of South Bohemia in České Budějovice. The South Bohemian Agency for Support to Innovative Enterprising has been entrusted with the park management. The project has a floor area of 620 m² and serves as a Business Incubator, Business Innovation Centre and Technology Transfer Centre. A follow-up investment project whose output is **Phase II of the South Bohemian Science and Technology Park with a floor area of 2,000 m²**. Among other things, both centres offer equipped laboratories mainly focused on the field of biotechnology. Potential clients are and will be research teams with technical solutions applicable in practice, start-ups linked primarily to the University of South Bohemia and the Biology Centre of the ASCR. Phase I and Phase II of the STP are co-funded by the South Bohemia Region (Phase I is also co-funded by the Statutory City of České Budějovice).

Technology Centre Písek, approved in November 2013, has an area of 7,300 m² of office space and 300 m² within the business incubator. In addition to office space, the Technology Centre Písek includes laboratories, plants for light manufacture and special high-security areas. A significant part of the centre is formed by one of the most advanced data centres in Europe, focused mainly on the provision of advanced ICT services and Cloud Computing.

The ENKI Science and Technology Park is primarily focused on applied research in the fields of solar and landscape energy, pond management, water management in the landscape and the use of natural and artificial wetlands.

The Nové Hradý Academic and University Centre is a joint project of the Institute of Nanobiology and Structural Biology of the Global Change Research Centre and the University of South Bohemia in České Budějovice. The centre, which focuses on applied research in the field of biotechnology, includes a science and technology park with several companies that use the premises and equipment of the centre.

In addition to the physical infrastructure, there are organisations in the region that deal with the issues of R&D support, technology transfer, investment promotion and SME promotion.

The South Bohemian Agency for Support to Innovative Enterprising (JAIP) was founded by the South Bohemian Chamber of Commerce with a view to cover the

promotion of research, development and innovation in the South Bohemia Region. The agency brings together representatives of companies and institutions that deal with the issues of research, development and innovation, facilitates communication and creates a platform for cooperation among the academia, public authorities and the business community. The main mission of the agency, providing assistance to the South Bohemia Region in R&D, is to design and apply a policy of support to innovative enterprising, technology development and research and development base with regard to the national framework and the regional specifics.

The South Bohemian Science and Technology Park (JVTP, a.s.) is an organisation founded by the South Bohemia Region, and its mission is to ensure the construction, equipment and operation of Phase II of the STP in České Budějovice.

The South Bohemian University and Academic Technology Transfer Centre was founded in 2012. The main task is to interconnect the offer of R&D results of the University of South Bohemia and the Biology Centre of the ASCR with meeting the technology demand of entities in the application sphere. The centre provides a comprehensive portfolio of services in the area of commercialisation of intellectual property from mapping the research potential of both partners to the application of the research results in practice through direct business activities.

The South Bohemian Chamber of Commerce (SBCC) was established to support business and to protect the interests of its members. The basic services of the SBCC include the monitoring of grants and grant consultancy, the organisation of specialised and information seminars (mostly on the topic of business management, legislative and tax changes, etc.) and consultancy for start-ups.

The Regional Development Agency (RDA) - its main objective is to promote and coordinate the economic, social and cultural development of the South Bohemia Region. The shareholders of the agency are the Union of Towns and Municipalities of the South Bohemia Region (30 % of shares), the South Bohemia Region (30 %), the South Bohemian Chamber of Commerce (20 %) and the Regional Agrarian Chamber (20 %).

The CzechInvest Investment and Business Development Agency is a public allowance organisation subject to the Ministry of Industry and Trade of the Czech Republic.

Given the importance of tourism in South Bohemia, we should also mention the **South Bohemian Office for Tourism**, which is an allowance organisation of the South Bohemia Region that provides support to tourism in the South Bohemia Region.

Given the significant representation of traditional fields in the South Bohemia Region, an

important role is also played by the **Regional Agrarian Chamber of the South Bohemia Region** (RAC SBR) that brings together seven district agrarian chambers of the South Bohemia Region; through them, it covers around 700 physical and legal entities operating in agriculture, forestry, fishing and the food- processing industry in the South Bohemia Region.¹⁰

7.3 Regulation framework

The same legal framework applies on the regional level as on the national – for more see chapter 5.4.

8 Good practice examples

Box 1

From Survivors to Winners / 2015

- **Company:** ELAI
- **CF platform used:** hithit.cz
- **Topic:** Start-up / Young business
- **Amount of money raised:** 4.000 EUR



Short description

Business Week Summit is a project related to the worldwide known Business Week which is the biggest event for entrepreneurs, start-ups and all interested in starting their own business, being held each year on the third week in November. The target of this project was to award ten best business ideas with an scholarship.

Recent influence

¹⁰ South Bohemia Region, Regional Annex to National RIS 3, 2014

Box 2

Fall in love with “non-milk”

- **Company:** Nemléko
- **CF platform used:** hithit.cz
- **Topic:** Food / Start-up
- **Amount of money raised:** 20.000 EUR



Short description

Project of two young people dedicated to production of milk made of almond, dates, water and pinch of salt for everyone who can't drink milk from animals. Campaign to raise needed production facility.

Recent influence

9 List of references

- 1) OECD Economic Surveys, Czech Republic, June 2016
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- 3) EIB Group Survey on Investment and Investment Finance, 2016
- 4) KPMG, Investment in the Czech Republic, 2016
- 5) Review of Crowdfunding Regulation, ECN, 2013
- 6) South Bohemia Region, Regional Annex to National RIS 3, 2014