March 2015

R&D Evaluation Methodology and Funding Principles

Background report 7: The institutional funding system in the Czech Republic

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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March 2015

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1. Introduction

This report constitutes a background report to the Final report 2 – *The Institutional Funding Principles*. It contains the findings of the analysis and evaluation of the current R&D institutional funding system in the Czech Republic, identifying its strengths, weaknesses, opportunities and threads at all levels of governance.

The Terms of Reference for this study specified that attention was to be be paid on the following aspects of institutional funding:

- Structure, powers and responsibilities at various levels (government-provider-beneficiary).
- List of providers and beneficiaries, size of institutional funding provided.
- Sources of institutional funding for R&D, analysis of other direct and indirect institutional resources used by beneficiaries.
- Conceptual and financial independence of providers, monitoring of their activities and the efficiency of institutional funding they provide.
- Analysis of the impact on fields and Research Organisations of the transition from the research plans to the system of distribution of institutional funding in 2010-2012 and comparison with the strategic objectives and priorities.

The methodological approach to this analysis encompassed a mix of quantitative and qualitative methods. In line with the Terms of Reference, the analysis focused on the structure and responsibilities in the distribution of institutional funding, the structure of the beneficiaries and providers of institutional funding, the structure of sources and types of institutional funding, and the assessment of the effects of changes in institutional funding in the recent years.

The quantitative approach was based on statistical data provided by the RD&I Information System. The statistical data covered topics like the structure, amount and distribution. The qualitative analysis was based on documents (acts, regulations, directives and other binding documents of the government, ministries and Research Organisations) review and interviews with representatives of Research Organisations, all providers and other important stakeholders (see the Appendix E). The main objective of the interviews was to identify the way of distribution and utilisation of institutional funding (e.g. criteria for distribution), synergies with other types of direct and indirect institutional funding and other financial sources, impact of changes in the institutional funding system etc.

Both the quantitative and qualitative analyses and their data sources showed some limitations in relation to the impact assessment of changes in the funding system. The interviewed stakeholders were not able clearly to define and prioritise the effects of the transition. In some cases they even argued that there were no important effects, even though their institutional funding (budget chapter) had decreased significantly. Moreover, the RD&I Information System did not provide sufficient data for analysing impact on scientific disciplines, because it does not contain information on the funding of research fields. Available information sources also did not allow for a more detailed analysis of the use of institutional funding.

2. The R&D Governance System

2.1 Overview

In recent years, the Czech Republic (CR) set the fundaments for a radical change in its RD&I governance structure. These were based on the Reform approved in 2008 and the subsequent National Research, Development and Innovation (further RD&I) Policy document (2009) for the years 2009 – 2015 and other necessary legislative interventions.

The system of actors involved in the RD&I policy implementation process and in RD&I funding has been significantly streamlined by the Reform of the System of Research, Development and Innovation (the Reform). The number of RD&I funding providers has been halved to 11 for the budget period 2013-2015. The power of ministries has been limited, especially in favour of the Council of Research, Development and Innovation (RD&I Council), Czech Science Foundation (GACR) and the Technology Agency of the Czech Republic (TACR).

At the first level of the RD&I governance structure, there is the RD&I Council responsible for setting overall directions and priorities across the National Research and Innovation System. Ministries and 2 agencies (GACR and TACR) which are responsible for the implementation of the RD&I policy constitute the second 'intermediary' level.

The two agencies have a unique status: their governing bodies is nominated by the Government – upon proposal by the RD&I Council, while their Supervisory Bodies are nominated by the Parliament. The Government also nominates – or removes - the members of the RD&I Council. The Chairman of the RD&I Council is a member of the Government.

2.2 The Governing Bodies

2.2.1 The RD&I Council

The RD&I Council is an expert advisory body of the Government. A member of the Government - normally the Prime Minister (now a deputy prime minister) – is the Chairman of the RD&I Council. The RD&I Council has the support of 3 disciplinary advisory Expert Committees and 2 Advisory Commissions. They support the RD&I Council on specific issues related to Life Sciences, Technical Sciences & Engineering; and Social Sciences and Humanities. The RD&I Council appoints the Chairmen of its two Advisory Commissions and the three Expert Committees.

The Secretariat of the RD&I Council is part of the Government Office – the Department of RD&I . Together with the expert and advisory bodies, the secretariat is to ensure technical, organisational, and expert support to the RD&I Council. Following the Reform and the approval of the National RD&I Policy for 2009 –2015, the RD&I Council has become the central body responsible for the cooRD&Ination of the national RD&I governance. Currently, the RD&I Council acts as a central body that takes decisions on a broad range of RD&I governance issues. These include the allocation of the national RD&I budget, monitoring and evaluation, longer-term policy-making, and other RD&I related support activities to the Government. As an advisory body, however, all of its documents and decisions require approval by the Government. The main tasks of the RD&I Council include drafting of the RD&I State Budget, RD&I monitoring and evaluation, and long-term policy-making.

2.2.2 The Agencies

The agencies (GACR and TACR) are the main providers of RD&I competitive funding. GACR provides funding for basic research, while TACR implements programmes supporting applied R&D.

GACR was founded in 1993 by the Czech government as an independent research funding organization with two main goals:

- To fund basic (frontier) research on a competitive basis;
- To promote international cooperation in basic research.

It promotes progress over the whole range of basic research in the Czech Republic. The main function of the GACR is to provide, on the basis of public tender, financial support for research projects submitted by individuals or organizations. The main source of the funds available is the state budget, but contributions from other sources are also possible. The GACR supports all disciplines of basic research. The evaluation system is based on peer review system and a bottom-up principle, the topics of projects are determined by applicants.

The TACR is an organizational unit of the state that was founded in 2009 by the Act No. 130/2002 Coll. The establishment of the TACR is one of the cornerstones of the Reform. TACR has simplified the state support of applied research and experimental development which was fragmented and implemented by many bodies before the Reform. In accordance with the Act No. 130/2002 activities assigned to TA CR are:

- Preparation and realization of its own programmes of applied research, experimental development and innovation; and realization of programmes from those governmental departments without public financial support;
- Evaluation and selection of programme proposals;
- Administration of functional financial support of applied research from the national budget;
- Control of a fulfilment of project contracts;
- Evaluation of fulfilment of objectives of programmes and control of their results;
- Counselling (legal, financial and IPR) for programmes and projects of applied research, experimental development and innovation;
- Communication support between research organizations and the private sector;
- Negotiations with institutions in the Czech Republic and the European Union in terms of permitted state aid for applied research and innovation, and
- Co-operation with similar foreign institutions.

2.2.3 The Ministries and the Academy of Sciences

Currently, 7 ministries and the 2 Agencies (the Czech Science Foundation and the Technology Agency) are in charge of providing RD&I public funding. Three ministries - the Ministry of Defence, the Ministry of Health, and the Ministry of Agriculture - were assigned responsibility for sector-specific RD&I . Four ministries - the Ministry of education, Youth and Sport, the Ministry of Industry and Trade, the Ministry of Culture, and the Ministry of Interior are in charge of "cross-sectoral RD&I ".

All of these ministries manage provide institutional as well as competitive funding Exception is the Ministry of Industry that officially does not have the responsibility for competitive funding programmes, even though it currently conduct such programme (TIP) lasting until 2017.

Further consequence of the Reform was the dismantling of the RD&I departments in those ministries that lost their status of public RD&I funding providers (their

responsibilities were transferred other ministries or the TACR). These include the Ministry of Transport, the Ministry of Environment, the Ministry of Labour and Social Affairs, and the Ministry for Regional Development.

2.2.4 The Research Organisations

Institutional funding can be provided only to Research Organisations. Research Organisations are defined in the Act No. 130/2002 Coll.:

"*The Research Organisation shall be any legal person, State organisational body or ministerial organisational body, dealing with research and development,*

i) whose primary purpose is to carry out basic research, applied research or development and to disseminate the results through teaching, publication or technological transfer; in the case of a territorial self-governing entity, the provisions concerning the primary purpose of the Research Organisation also applies to its organisational units,

ii) that reinvests any profits into the activities set forth in sub-paragraph i),

iii) *to whose research capacity or results, entities that perform economic activities consisting of offering goods or services, which might apply pressure to it, do not have priority access.*"

Thus, this definition is very general; no part of the Act provides more specific definition of a legal form of Research Organisations, their minimal size in terms of number of researchers, economic indicators (e.g. turnover, etc.), research collaboration, education, etc. Research Organisations receiving institutional funding have the following legal forms:

- Public universities (defined by the Act No. 111/1998 Coll. On universities);
- Public research institutions (defined by the Act No. 341/2005 Coll. on public research institutions);
- State agencies;
- Registered legal bodies (joint stock companies, limited companies);
- Organisational units of the Czech Republic;
- Beneficial organisations;
- Professional association, non-profit organisations;
- Other legal bodies.

Public research institutions are ASCR institutes and Research Organisations established by ministries ("sectoral" Research Organisations). Their missions and RD&I activities vary considerably. Whilst ASCR institutes concentrate on basic research, sectoral Research Organisations perform applied research activities. State agencies are a very heterogeneous group of Research Organisations consisting of sectoral organisations, museums, galleries and hospitals. Registered legal bodies involve sectoral Research Organisations (established and owned by ministries), privatised Research Organisations and private firms, which meets criteria for assessment of Research Organisations (see Chapter 4.3.1). Organisational units of the Czech Republic are state universities, archives and special sectoral Research Organisations (e.g. in the field of security and defence research). Beneficial organisations are e.g. some private universities. Professional associations/non-profit organisations are some agencies, museums, Research Organisations and associations.

The research organizations are fully independent. Approvement of their strategic development is competence of their institutional manageme of strategies; in the public research organizations the research councils approve the long-term strategic development plans. Research organizations are fully autonomous in the distribution of internal funds within their workplaces.

According to the RD&I Information System, there were 219 Research Organisations in 2014, however not all of them are eligible for institutional funding for their long-term conceptual development (a list of organisations receiving institutional funding

including the amount of the funding is in the Appendix A and C). Table 1 shows a structure of the Research Organisations according to their legal forms. The most frequent entities are public research institutions (especially institutes of the ASCR) with 35.1% share on the total number of Research Organisations, and public universities.

Table 1 - Structure of Research Organisations according to their legal form

Legal form	**2011**		**2014**	
	Nr	%	Nr	%
Beneficial organisation (obecně prospěšná společnost)	1	0,6	12	5,5
Organisational unit of the Czech Republic (organizační složka státu)	11	6,7	10	4,6
Other legal body (jiná právnická osoba)	0	0	1	0,5
Registered legal body (právnická osoba zapsaná v obchodním rejstříku)	23	13,9	38	17,4
State agency (státní příspěvková organizace)	33	20,0	54	24,7
Public research institution (veřejná výzkumná instituce)	71	43,0	73	33,3
Public university (veřejná vysoká škola)	24	14,5	26	11,9
Professional association, non-profit organisation (zájmová sdružrní právnických osob)	2	1,2	5	2,3
Total	165	100,0	219	100,0

Source: RD&I Information System

Compared to the year 2011 (in that year research intentions were completed) the number of Research Organisations has significantly increased by 43 organisations. Their structure according to legal forms is given in the Table 2. The new Research Organisations are mostly state agencies (museums, hospitals, etc.), registered legal bodies (private universities and private companies) and beneficial organisations (various private agencies, think tanks, etc.). They are listed in the Appendix B.

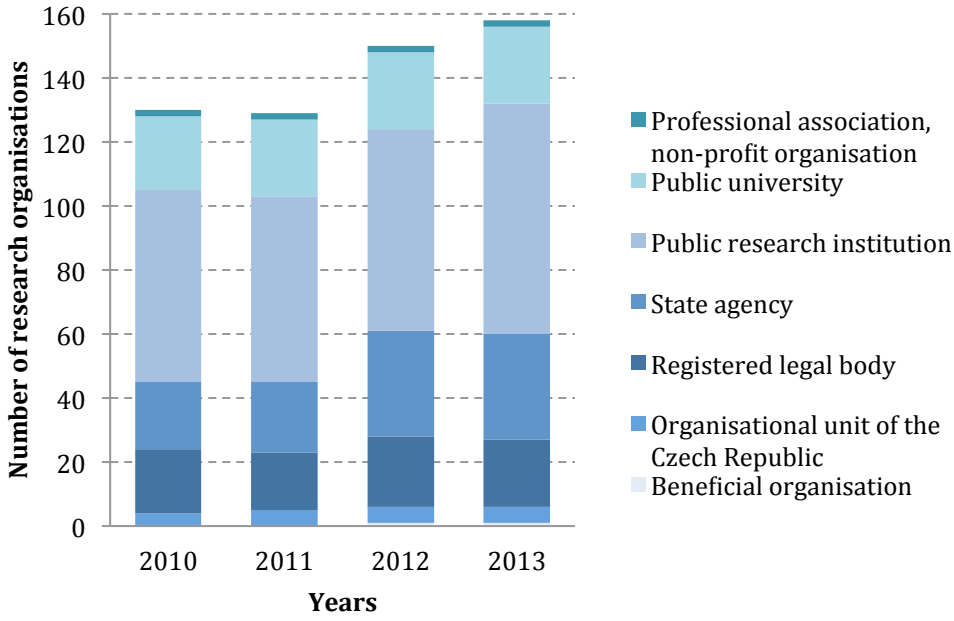
Table 2 - Number of new Research Organisations

Legal form	**Quantity**
Beneficial organisation	7
Organisational unit of the Czech Republic	3
Registered legal body	10
State agency	20
Public research institution	2
Public university	2
Professional association, non-profit organisation	3

Source: RD&I Information System

In 2013, 158 Research Organisations received institutional funding. The number of supported Research Organisations has grown gradually, as shown in Figure 3. In the period 2010-2013, their number increased by 22%, from 130. As for their structure according to legal forms, public research institutes were the most frequent type in all years (46% in 2013), followed by state agencies (21%) and public universities (15%).

Figure 1 – Number and structure of Research Organisations receiving institutional funding



Source: RD&I Information System

3. The State Budget for R&D

3.1 Introduction

In the Czech RD&I system, national public funding is divided between two major groups of instruments: **institutional expenditures** and **competitive expenditures**.

The institutional expenditures are defined by the Act no 130/2002 Coll., on the funding of research, experimental development and innovation, which distinguishes the following kinds of the institutional expenditures:

- The long-term conceptual development of Research Organisations on the basis of an evaluation of the results they have already achieved (institutional funding);
- The international co-operation of the CR in R&D, performed on the basis of international treaties, including co-operation performed on the basis of legal documents issued therefor;
- Operational programmes in RD&I, or the parts thereof that will ensure achievement of the RD&I goals;
- Ensuring public tenders in RD&I, as well as issuing public contracts, including costs for project evaluation and monitoring and assessing the results achieved, as well as assessing conditions for the provision of support for specific university research, major infrastructure or international cooperation by the CR in RD&I, to a maximum amount not exceeding 2.5% of the funds provided by the grantor for research, development and innovation in a given calendar year;
- Material or financial reward for the results of RD&I or financial reward for the promotion or popularisation of research, development and innovation, where the conditions for this reward are set by the Government on the basis of a proposal by the RD&I Council;
- Expenditure related to the activities of the RD&I Council, the GACR, the TACR and the Academy of Sciences of the CR;

The above-mentioned act distinguishes the following kinds of the **competitive expenditures**:

- A grant project, in which the recipient sets the goals and method of their achievement in basic research as one of a set of grant projects announced by the provider;
- A programme project, in which the recipient expresses how and under what conditions the project will contribute to achieving the programme goals; the performance of a programme project may also cover essential basic research activities, provided these lead on to applied research, development or innovation activities;
- Specific university research, which is research performed by students as part of accredited doctoral or masters study programmes and which is directly related to their studies;
- Major infrastructure.

The Reform caused important shift in kinds of institutional and competitive expenditures – specific university research was transferred from institutional to competitive expenditures. Now, support to specific university research shall be provided in accordance with the rules approved by the Government, which defines criteria and methods of providing the support. However, despite the changes in providing support to specific university research, it is often perceived as indirect (de facto) institutional support.

3.2 Process for the definition of the State Budget for R&D

The most important role in the drafting of the RD&I State Budget is played by the RD&I Council, while the Ministry of Finance is the most important actor in proposing the final level of the budget.
According to Act No. 130/2002 Coll., total public RD&I expenditures from the State Budget (including their distribution among budget chapters of individual providers) are approves by the Government based on the proposal of the RD&I Council. In praxis, the various operational steps or the decision-making on the yearly budgets typically take approximately 8 months. Drafting the state budget is a key activity of the Council's Secretariat. The Secretariat is responsible for the drafting of the principles and objectives, guidelines and overall objectives; for elaboration of the first draft on the basis of the guidelines and framework agreed upon in the RD&I Council, which is then submitted to ministries and statutory representatives. Once agreement is reached between these entities and RD&I Council representatives, the draft is discussed with the Ministry of Finance. Then, the Secretariat develops the final proposal, submitting it first to the RD&I Council and subsequently to the Government for approval.

The RD&I Council takes into account the following principles in the process of RD&I State Budget expenditures drafting:

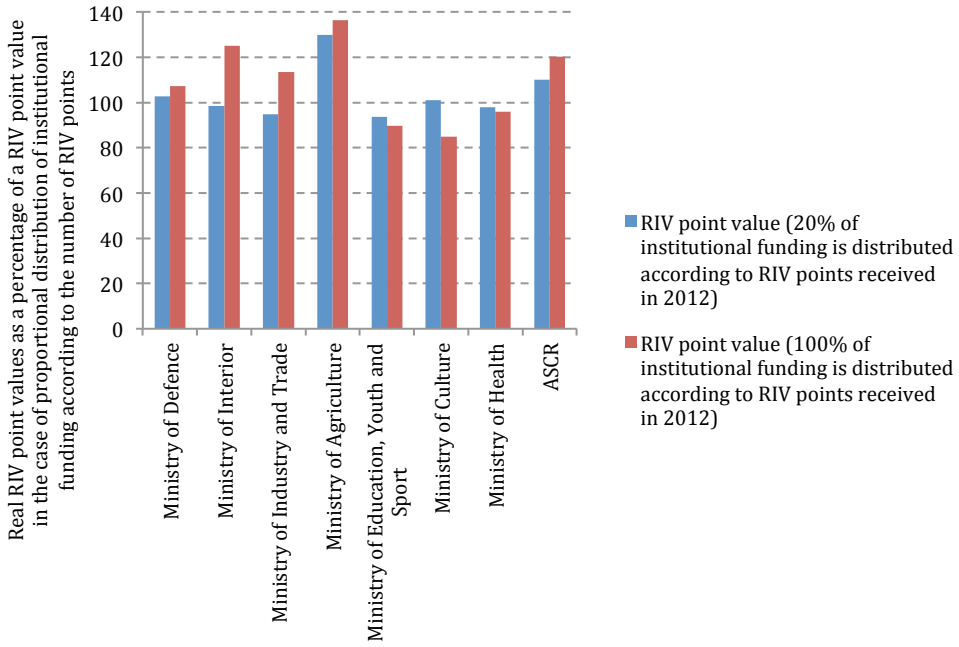
- The existing obligations of providers must be maintained in the draft.
- Compliance with general conditions:
  - the quality and performance of RD&I in the Czech Republic has to be supported,
  - the competitiveness of the Czech Republic has to be supported,
  - R&D excellence has to be supported,
  - the requirement of the EC to prepare a multi-annual state budget plan in accordance with national and European R&D priorities has to be fulfilled (condition for the use of financial support from cohesion funds),
  - the rules for evaluation of research organization (1500 points in the information system of R&D) have to be fulfilled,
  - sustainability of existing project supported under the OP RD&I (projects of large research infrastructure) has to be supported,
  - co-financing of current and future projects supported from operational programs focused on R&D has to be ensured,
  - R&D results included in the information system of R&D have be taken into account.

The preparation of the RD&I state budget expenditures, done by the RD&I Council, is a political process by nature. According to the Section 5a of the Act No. 130/2002 Coll., the proposal for the total expenditure package for research, development and innovation is based on an evaluation of the results attained by Research Organisations over the past 5 years, on the National Research & Development and Innovation Policy of the Czech Republic and on the results of an international assessment of research and development in the Czech Republic. Nevertheless, interviews with representatives of all providers and the Government Office showed that, the total amount of institutional funding allocated to each provider is based more on political decisions (i.e. on the basis of negotiations within the RD&I Council, between providers and the Ministry of Finance, among providers as well as between rectors, the President of the

ASCR and the Prime Minister) than on the number of the evaluation results (RIV points generated by the Research Organisations)[1]. This contradiction between the act's section and the actual process of the RD&I state budget expenditures drafting has been intensively discussed within The Council of Higher Education Institutions[2] of the Czech Republic and the Czech Rectors Conference. Both associations has requested the Government to draw up the RD&I State Budget expenditures in line with the Act and in a transparent manner so that the level of institutional funding corresponds with the results of the research organizations evaluation (the number of RIV points).[3]

The mentioned political negotiations together with development of institutional funding in previous years result in the fact that weights (financial values) of a RIV point varies among individual providers, as illustrated in Figure 2, which compares two models of institutional funding distributions – the current model with 20% of institutional funding distributed according to the Metodika, and the model distributing 100% of institutional funding according to the Metodika each year (proposed by e.g. the above mentioned groups of stakeholders).

Figure 2 – Differences of RIV point values among providers in 2014



Source: RD&I Information System

[1] For more information on RD&I state budget negotiations between the RD&I Council and providers see e.g. RD&I Council background reports http://www.vyzkum.cz/FrontClanek.aspx?idsekce=711410 (the budget for 2014) or http://www.vyzkum.cz/FrontClanek.aspx?idsekce=674265 (the budget for 2013).

[2] Minutes of the 20th meeting of the Board of The Council of Higher Education Institutions taking place on October 23, 2014 http://www.radavs.cz/clanek.php?c=1637&oblast=16

[3] Information on the 9th meeting of the Assembly of the Council of Higher Education Institutions from November 20, 2014, and the main resolutions adopted http://www.radavs.cz/clanek.php?c=1648&oblast=17, http://crc.muni.cz/resolutions/128.html

Table 3 - RD&I State Budget Expenditures in 2013 and 2014 (in thousands CZK) approved by the Czech Government

STATE BUDGET CHAPTER	STATE BUDGET 2013					STATE BUDGET 2014				
	Institutional expenditure	Competitive expenditure	Only state budget total (without pre-funding)	Pre-funding*)	Total expenditures	Institutional expenditure	Competitive expenditure	Only state budget total (without pre-funding)	Pre-funding*)	Total expenditure
Office of the Government	34 000	0	34 000	0	**34 000**	33 000	0	33 000	0	**33 000**
Ministry of Defence	84 688	297 837	382 525	0	**382 525**	89 977	323 000	412 977	0	**412 977**
Ministry of Interior	57 088	565 145	622 233	0	**622 233**	59 930	570 000	629 930	0	**629 930**
Grant Agency of the CR	110 276	3 199 153	3 309 429	0	**3 309 429**	107 576	3 356 971	3 464 547	0	**3 464 547**
Ministry of Industry and Trade	504 011	2 020 039	2 524 050	1 983 333,333	**4 507 383,33**	507 434	1 057 226	1 564 660	1 983 333, 333	**3 547 993,33**
Ministry of Agriculture	379 823	388 649	768 472	0	**768 472**	395 652	378 552	774 204	0	**774 204**
Ministry of Education, Youth and Sport	6 939 161	2 840 042	9 779 203	11 978 051	**21 757 254**	6 683 172,1	3 849 343	10 532 515,10	5 993 046	**16 525 561,1**
Ministry of Culture	72 244	398 748	470 992	0	**470 992**	74 901	406 079	480 980	0	**480 980**
Ministry of Health	402 424	818 767	1 221 191	0	**1 221 191**	427 744	900 000	1 327 744	0	**1 327 744**
Academy of Sciences of the CR	4 411 841	37 351	4 449 192	0	**4 449 192**	4 452 257,359	0	4 452 257,359	0	**4 452 257,359**
Technology Agency of the CR	99 030	2 457 457	2 556 487	0	**2 556 487**	98 077,76	2 864 414	2 962 491,76	0	**2 962 491 761**
TOTAL	**13 094 586**	**13 023 188**	**26 117 774**	**13 961 384,33**	**40 079 158,33**	**12 929 721,22**	**13 705 585**	**26 635 306,22**	**7 976 379,33**	**34 611 685,55**

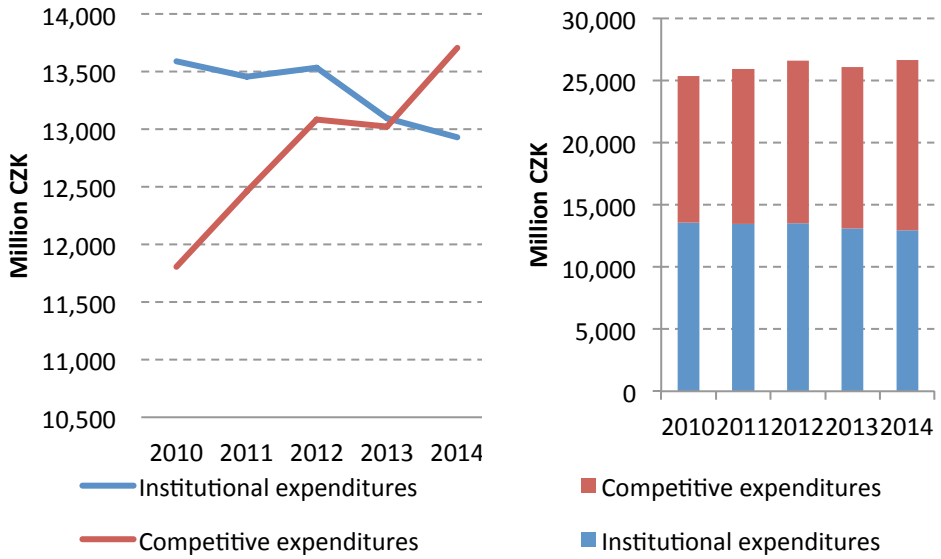
Source: http://www.vyzkum.cz/FrontClanek.aspx?idsekce=704568, *) expenditures to sheltered income from EU programs and funding mechanism

3.3 The Institutional expenditure budget chapter

In 2012 the Gross Domestic Expenditure on R&D (GERD) in the Czech Republic reached CZK 72.4b, which represents 1.88% GDP. In this basic ratio The Czech Republic closed in on the EU27 average (1.9% in 2010). In comparison to 2010 the total expenditure on R&D increased by nearly CZK 20b (37%). The business sector in the Czech Republic is the most important in funding of the R&D activities with a ca. 46.2% share in 2012. The state budget represents the second most important source of R&D funding. Its share in total R&D funding was 36.8%.

In 2012 the total direct RD&I state budget expenditure reached CZK 26.2b, which equals 0.68% share in GDP and 2.27% share of the total State Budget expenditure. As mentioned above, RD&I public funding in the Czech Republic can be divided into two categories – (i.) competitive expenditures and (ii.) institutional expenditures. In 2014, accoRD&Ing to the State Budget Act the total institutional expenditures reach CZK 12929.721m, CZK 776m lower than competitive funding accounting for CZK 13705.585m. RegaRD&Ing a ratio of competitive and institutional expenditures, there have been important changes in recent years (see Figure 3).

Figure 3 – Development of institutional and competitive expenditures



Source: State Budget Act

While there was a substantial increase of competitive expenditures, the institutional expenditures went down steadily. Thus, share of institutional expenditures on the total RD&I public expenditures decreases from 54% in 2010 (CZK 13586.817m) to 49% in 2014. This change has been caused by mainly political and economic factors, however closely interlinked they are. The crucial political factor that this change is anchored in the national RD&I policy (and the Reform of the state of RD&I), which states in its Objective A 3-2: Increase the proportion of R&D funding granted in the form of targeted funding:

„Public expenditure on R&D must comply with the needs of the knowledge society, not in terms of its growth momentum, but also its structure. Targeted funding will rise in importance within the scope of public expenditure on R&D; the increase in R&D funding projected between 2012 and 2015 will primarily be channelled into targeted funding. The aim is to achieve, by 2015, a ratio of targeted and

institutional funding at 60:40; this ratio will differ for basic research and applied research and development.“

The key economic factor is a current slowdown of national and EU economies, which has forced the Czech Government to restrict public budgets in many areas including the field of RD&I, despite the RD&I policy statements and proclamation and promises of many politicians.

The amount of institutional expenditures allocated to individual provider varies significantly, as it is shown in the Table 4. Traditionally, the largest amount of institutional expenditures is allocated to the MEYS and the ASCR. Both providers distribute 86% of the total institutional expenditures in 2014. Looking at development of the amount of institutional expenditures allocated to individual providers, compared to 2011 only the Ministry of Culture and the Ministry of Health distributed higher institutional expenditures in 2014. Nevertheless, there has been an increase of institutional expenditures in the case of the Ministry of Defence, the Ministry of Interior, the Ministry of Industry and Trade, the Ministry of Agriculture and the Ministry of Culture in the last two years (2013 and 2014). Only the ASCR institutional expenditures are rather stagnating.

Table 4 – Development of institutional expenditures according to providers

Institutional expenditures in thousands CZK						
Provider	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Ministry of Defence	124 175	91 407	98 387	84 522	84 688	89 977
Ministry of Interior	2 760	39 044	60 763	54 773	57 088	59 930
Ministry of Industry and Trade	501 600	509 600	581 973	346 563	504 011	507 434
Ministry of Agriculture	477 159	425 664	408 078	322 920	379 823	395 625
Ministry of Education, Youth and Sport	6 978 190	7 209 895	6 919 034	7 527 563	6 939 191	6 683 172
Ministry of Culture	67 298	75 415	70 365	69 026	72 244	74 901
Ministry of Health	217 082	207 625	377 789	396 941	402 424	427 744
ASCR	5 058 554	4 567 365	4 462 707	4 506 770	4 411 841	4 452 257
Other providers	361 475	299 684	272 939	0	0	0
Total	13 788 293	13 425 699	13 252 035	13 309 078	12 851 310	12 691 040
Development of institutional expenditures (previous year=100%)						
Ministry of Defence		73,6	107,6	85,9	100,2	106,2
Ministry of Interior		1414,6	155,6	90,1	104,2	105,0
Ministry of Industry and Trade		101,6	114,2	59,5	145,4	100,7
Ministry of Agriculture		89,2	95,9	79,1	117,6	104,2
Ministry of Education, Youth and Sport		103,3	96,0	108,8	92,2	96,3
Ministry of Culture		112,1	93,3	98,1	104,7	103,7
Ministry of Health		95,6	182,0	105,1	101,4	106,3

ASCR		90,3	97,7	101,0	97,9	100,9
Other providers		82,9	91,1			
Total		97,4	98,7	100,4	96,6	98,8

Source: State Budget Act

4. Institutional funding for research

4.1 Criteria for the allocation of institutional funding for research

4.1.1 Historical background

The Czech institutional funding system has undergone significant changes during the last 20 years. The first institutional funding model, which had been used up to 1999, was based on the **index method**, i.e. funding based on the level of expenditures in previous years with some minors changes according to several criteria (mostly according to the total amount of financial sources allocated to concrete years). Main advantages of this model were relative stability and simplicity; nevertheless, the model did not motivate Research Organisations and led to the conservation of the existing state.

In 1998, this model was replaced by the system of "**research intentions**" (i.e. wide, general, research projects designed for the 5 and later 7 years period). Research intentions had to be based on national research policies and defined objectives, strategies, expected results of research activities, and the budget. The Research Intentions scheme is generally perceived to have had some very positive attributes. Most important, it provided some stability for Research Organisations. In addition, organisations had considerable freedom to design the Research Intentions according to their needs and wishes. The key positive feature of this model was the fact that many Research Organisations had to describe previous research activities including own results reached, and to define further activities for the next five years.

This funding model had several crucial weaknesses (based on Blažka 2013[4], Blažka et al. 2014[5]):

- The model evolved into a "competition for money". There were no budget limits for research intentions. Some research institutions requested more than thirty times more than in their previous period. It caused the lack of financial sources; consequently research intentions of some Research Organisations were not supported.
- Conflict of interests. In many cases results of research intentions proposals assessment correspond to the composition of selection committees.
- Low linkages between funds and results. Compared to foreign best practices, results did not correspond to the almost threefold increase of institutional funding results. It was partly caused by very formal assessment of many research intentions.

[4] Blažka, M. (2013): Kam kráčíš metodiko. Zpravodaj AVO 02/13.

[5] Blažka, M. et al. (2014): 1989+25=Výzkum užitečný pro společnost. TACR, 2014

- In many cases research intentions were not used for the main purpose (long term conceptual development of research institutions), especially in applied research and development.
- Fragmentation of the institutional funding among many providers
- Funding of the same activities from competitive funding and research intentions.
- High administrative demands on research intentions proposals elaboration and their annual evaluation.
- As Research Intentions cover long periods (5-7 years), this can restrict progress or development within institutions because they are locked into the programmes that are defined in the intentions.
- Research Intentions divided university research staff into those 'on board' (being members of the Research Intention team) and those 'left behind' (not having the Research Intention). Even if someone's research results were excellent, it was impossible to become a member of the Research Intention plan if the university did not have a Research Plan in the particular field. This was perceived as very unfair by many university researchers.
- The Research Intentions gave rise to 'gaming' of some team leaders. Finally, the evaluation of the Research Intentions was also criticised, which was perceived as not very objective: almost all Research Intentions were evaluated as 'excellent' or 'above average'.

Further critique of the research intentions model voiced in the Reform document:[6]

"The introduction of a research plan-based institutional financing did not bring the necessary dynamics into the organisational structure of public research. While institutes abroad in this area born and die, their focus (research programmes or plans) considerably changes, their management radically changes, etc., the changes in the Czech Republic are basically negligible."

The Reform brought the other change in the institutional funding system. The new model has introduced distribution of institutional funding according to the evaluation of Research Organisations. The first evaluation methodology was introduced in 2004 and was based on a **metrics-based quantitative results evaluation**, seen as a tool – and only one of the main criteria – to prove the quality of research performance. In simple terms, each type of research result was valued by specific number of points and the evaluation of research organization was a sum of points corresponding with types and quantity of research results.

Consequently, the methodology (Metodika), known as a "coffee grinder", was modified each year. The 2010 Metodika explicitly recognizes the possibility to use the metrics-based evaluation of R&D results as a mechanism for allocating institutional funding to individual Research Organisations. Metodika has therefore a two-fold role. Of course, there is a close link between these two roles: at its 'practical level', the Metodika defines what results are eligible, how the data are collected and how they are converted into point values, which then form the basis to allocate institutional funding for R&D. The research organization should receive proportional share of funds which equals to its share of points earned by its research results. The institutional funding is provided to all providers and

[6] http://www.vyzkum.cz/FrontClanek.aspx?idsekce=495427

beneficiaries according to the same principles. This now model gradually replaced the model of research intentions in the transition period 2010-2012.

In 2010, around 1/3 of institutional funding was distributed according the new model, in 2011 it should be about 60 % and finally in 2012 approximately 90% of institutional funding. In the following years the entire institutional funding should be allocated according to Metodika. However, the International Audit stated that the share of institutional funds distributed on this basis was too high and could destabilize the whole R&D system in the Czech Republic. Therefore, the share of institutional funding allocated according to Metodika was reduced to 20%, the remaining 80% was divided according to the previous year levels (evaluation results according to the previous versions of Metodika in the previous 5 years). Nevertheless, the last versions of the Metodika do not prescribe a mechanism how providers should distribute institutional funding among recipients. Because no other binding documents set any obligations and rules for providers in terms of institutional funding distribution, the providers have power to develop own principles for institutional funding distribution. For example, MEYS distributes 100% of institutional funding proportionally according to current Metodika[7] without taking into consideration evaluation results in the previous 5 years. Such principle is in accordance with the law, but contradictory to the above mentioned International Audit remark.

4.1.2 The Performance-based Research Funding System (PRFS)

According to the Act no 130/2002 Coll., institutional funding shall be provided by the provider to Research Organisations on the basis of an assessment of the research results already achieved. The share of the total amount of institutional funding for a given year reflects the share of the research organization in the total value of results achieved by all Research Organisations over the past 5 years. The evaluation of the research results is carried out each year by the RD&I Council.

The main body in the R&D evaluation process is the RD&I Council, which prepares and approves the methodology for evaluating results of research organizations and results of completed programs. The first such methodology was approved in 2004 in reaction to the declining performance of Czech research in international comparison. In the following years, the evaluation methodology went through several modifications. Substantial modification occurred in 2013, when the current version of methodology was approved by the Government of the Czech Republic (Metodika 2013-2015).

The Metodika was designed by the RD&I Council and the Committee for Evaluation of Results (KHV) put together from the representatives of various Research Organisations (universities, Academy of Sciences of the Czech Republic). The committee and the RD&I Council were also authors of frequent modifications of the Metodika.

Intention of modifications was to prevent large shifts of the institutional funding from field to field or one type of institution to another. However, the modifications came always late, after the shift has occurred. So KHV did not guard the quality of the evaluations but merely fixed the holes or leaks. The main types of modifications were the changes in point-scores of individual types of results. Another frequently used tool was introduction of point quotas (e.g. non-crossable limits for fields or types of results). Responsibility of the research organizations is to report all results

[7] http://www.msmt.cz/vyzkum-a-vyvoj/institucionalni-podpora-na-dlouhodoby-koncepcni-rozvoj-3

to the RD&I information system and submit selected results for evaluation in Pillar II (see below).

Evaluation of Research Organisations is performed every year. Evaluated are all institutions which could receive institutional funding in the given year according to the Proposal of the State Budget approved by the government. At present, evaluated institutions include institutes of the ASCR, universities, state institutions, offices and organization units of the CR, and other legal bodies and persons. Research organizations are included in the evaluation on the basis of a notice given by the respective providers of institutional funding.

Since 2004, the Metodika has gone through a number of partial modifications that mainly consisted in changes to the categories of evaluated results and changes in definitions of the individual result types and their point valuations. In response to the criticisms, substantial modification of the methodology has been introduced in 2013. The current evaluation methodology valid for years 2013-2015 is based on three pillars:

- Pillar I – Field-based evaluation of publication results; the methodology specifies relevant result types and individual result types are assigned point values that are the result of a consensus in the RD&I Council. The methodology also specifies the potential maximum shares of individual result types and their point valuations for each group of disciplines.
- Pillar II – Evaluation of the quality of selected results; every evaluated organization submits a limited number of selected results for expert evaluation.
- Pillar III – Evaluation of patents and unpublished results of applied research; patents are evaluated using a flat-rate point valuation and other results of applied research according to the volume of financial means acquired by a given research organization from projects of applied research and contractual research.

The main method used for the evaluation is metrics; each valid type of results receives specified point valuation. Besides the metrics, the current version of Metodika also includes peer review, which is used to assess the quality of some results. In Pillar I, peer review is used to verify and evaluate some of the result types, namely the books, book chapters and articles published in reviewed journals not included in WOS, SCOPUS or ERIH databases (Jrec). The review is performed by the Field-Specific Verifying and Evaluating Panels (FVEP). In Pillar II, the peer review is used to evaluate the quality of small number of selected results from each R&D institution. All types of publication and application results are authorized. The results are assessed by field-specific Expert Panels (EP), which assign each result to the category A or B. Points allocated to the institution depend on the ratio of results assigned to the category A and B.

The evaluation is based solely on R&D results achieved by individual research organizations. Assessed are all valid results recorded in the RD&I Information System of the CR. The evaluation incorporates results produced and submitted during previous five years regardless of the source of financing that made them possible. The types of results are clearly defined in the methodology. The individual result types are assigned point values; some of the results receive the same point values in all 11 fields distinguished in RD&I information system, while others have different point values in different fields or even are not valid in some fields. The evaluation is based on the overall number of points acquired by the given research organization in the given time period. The main output of the result evaluation is a well-arranged table that shows the number of results for the individual result types and the number of points achieved by individual research organizations for the different result types.

The system for allocation of institutional funding among Research Organisations based on RIV-points does not reflect differences in the role (mission) of Research Organisations and types of research activities. Moreover, there have been almost yearly changes of the Metodika namely in terms of the number of RIV points assigned to individual types of research results (e.g. RIV points numbers assigned to proceedings papers published in the English language changed from 4 in 2006, to 0.2 in 2007, 8 in 2008 and 8-60 in 2013) and their definitions. In addition, RIV point value of some types of results may be questionable, as some interviewed stakeholders stated (e.g. cultivars). The Metodika influenced individual scientific fields in a different manner. Preferences of publications and papers in scientific journals indexed in Web of Science in general encourage fields whose main results are scientific papers in Web of Science indexed journals (in this sense ROs and especially faculties of natural sciences performing higher quality research outputs received higher institutional funding), whilst the influence on medical and technical sciences (characterised by different types of results) is rather problematic. Highly negative impact has the Metodika on the quality of the results[8] in social sciences and humanities.

4.2 The Institutional funding for research budget line

4.2.1 Overview of the responsible governance bodies

The procedure of institutional funding is based on the current Czech legislation for research, experimental development and innovation. The legal framework is therefore formed by Act No. 130/2002 Coll. Institutional funding is provided in accordance with § 3, paragraph 3, point. b) point 3, § 4, paragraph 2, point. b) and § 9, paragraph 6. c) of Act No. 130/2002 Coll.

The institutional funding system involves the following providers (their recipients are listed in Appendix A):

- Ministry of Education, Youth and Sport;
- Academy of Science of the CR;
- Ministry of Interior;
- Ministry of Culture;
- Ministry of Agriculture;
- Ministry of Defence;
- Ministry of Health;
- Ministry of Industry and Trade.

4.2.2 Distribution of the institutional funding of research among the governance bodies

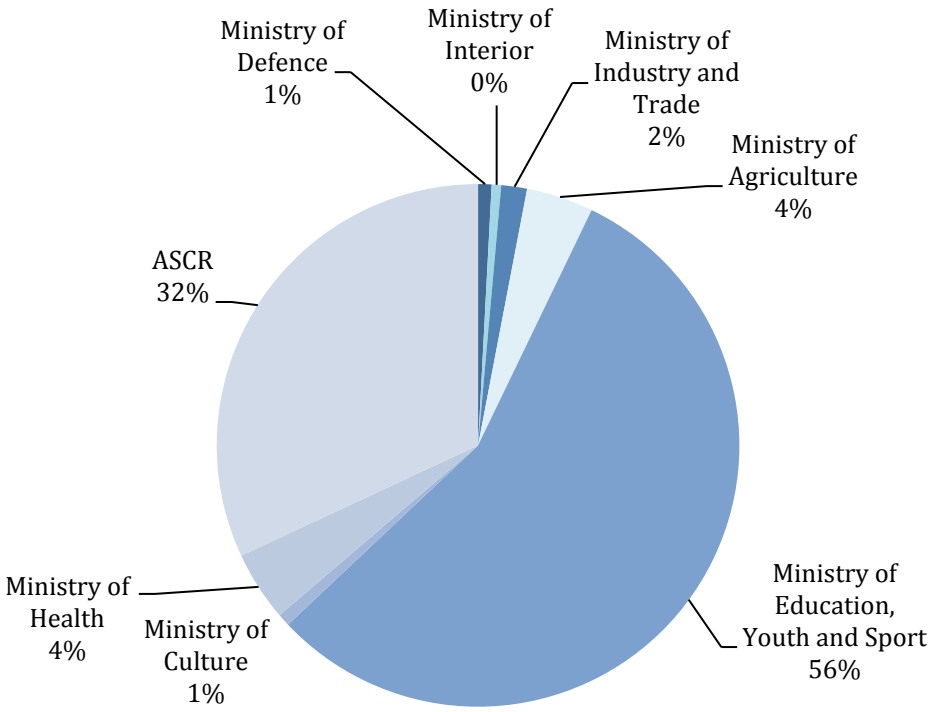
In 2014, institutional funding amounts to CZK 9.4b, 72.7% on the total institutional expenditures and 35.3% on the total public RD&I expenditures. According to the Act No 130/2002, institutional funding is distributed according to the research results of Research Organisations. Discussion about the share, which should be distributed on the basis of the Metodika differs significantly. According to the original intentions of the Metodika, 100% of the institutional funding should be provided on the basis of evaluation of research results (i.e. according to the “coffee

[8] Münich, D. (2014): Dobrý a zlý kafemlejnek II, http://metodikahodnoceni.blogspot.cz/2014/12/dobry-zly-kafemlejnek-ii.html

grinder"). Consequently, it could be lead to a high instability of the whole institutional funding system. The International Audit of the Czech RD&I System recommended reducing of this share. Thus, in recent years 20% of the institutional funding has been distributed according to the RO evaluation results (application of the Metodika), the rest on the basis of the institutional funding in previous years. In 2014, the 20% share reaches CZK 1.88b, it means 7% on the total public RD&I expenditures.

Similarly to the institutional expenditures distribution among providers, the majority of the institutional funding is redistributed by the MEYS followed by the ASCR (see Figure 4). In 2014, the institutional funding allocated to the MEYS is CZK 5.2b accounting for 56% of the institutional funding. The second largest provider – the ASCR – received CZK 3b from the state budget, which amounts to 32% of the institutional funding. Comparted to these providers, institutional funding going through the other providers is very low, for example the third largest provider – the Ministry of Health – divides only CZK 0.4b, which is less than 8% of the institutional funding distributed by the MEYS.

Figure 4 – Providers shares on the total amount of the institutional funding in 2014



Source: State Budget Act

The amount of the institutional funding has grown in recent years, as shown in Table 2. In contrast to the development of the total institutional expenditures, the institutional funding develops in a different way, as shown in the Table 5. High disparities in the amount of the total institutional expenditures and the institutional funding can be explained by high proportion of other types of the institutional expenditures (especially co-funding of operational programmes). The crucial discrepancy is that, except for the Ministry of Industry and Trade, the institutional funding of all providers climbed considerably in 2011-2014. The other difference is the 2013-2014 inter-annual decrease of the institutional funding allocated to the ASCR, while institutional funding assigned to other providers climbed. The massive increase in the period 2010-2012 was caused by a change of funding models – by a transition from the research intentions to the current system.

In general, development of the institutional funding depicted in the table 5 was caused by the following factors:

- Increase of the institutional funding recipients and transfers of some beneficiaries among providers;
- Historical development in previous years (level of institutional funding in previous years, previous commitments, etc.);
- Political discussions between providers and the RD&I Council and the Ministry of Finance, political discussions within the Government;
- Evaluation of Research Organisations.

Table 5 – Allocation of institutional funding

Provider	Institutional funding (thousands CZK)				
	2010	2011	2012	2013	2014
Ministry of Defence	44 868	58 932	73 966	69 438	89 121
Ministry of Interior	30 928	52 893	47 067	43 352	64 364
Ministry of Industry and Trade		172 980	138 558	146 377	149 800
Ministry of Agriculture	1 156	58 101	80 779	283 908	389 952
Ministry of Education, Youth and Sport	1 471 941	2 997 338	4 714 043	4 991 750	5 246 252
Ministry of Culture	18 599	40 106	63 730	72 113	72 786
Ministry of Health	78 519	206 311	375 828	384 380	406 435
ASCR	741 190	1 736 665	2 549 936	3 108 674	3 002 199
total	2 387 201	5 323 326	8 043 907	9 099 992	9 420 909
	Development (previous year=100%)				
Ministry of Defence		131	126	94	128
Ministry of Interior		171	89	92	148
Ministry of Industry and Trade			80	106	102
Ministry of Agriculture		5 026	139	351	137
Ministry of Education, Youth and Sport		204	157	106	105
Ministry of Culture		216	159	113	101
Ministry of Health		263	182	102	106
ASCR		234	147	122	97
total		223	151	113	104

Source: State Budget Act

4.2.3 The role and competence of the governance bodies

According to the Act no 130/2002 Coll., institutional funding shall be provided by the provider to Research Organisations on the basis of an assessment of the research results already achieved. The share of the total amount of institutional support for a given year reflects the share of the research organization in the total value of results achieved by all Research Organisations over the past 5 years. The evaluation of the research results is carried out each year by the RD&I Council.

Provider of institutional funding exclusively decides to provide (or deny) institutional funding for research organization and determines its possible financial amount. The Act No. 130/2002 Coll. states the option, not the obligation, to provide institutional funding for research organization by the provider of the institutional funding. The law is clear there is no legal entitlement to obtain of institutional funding for research organization.

As mentioned above, for the distribution of institutional support among individual recipients, providers mostly use recommendations of the RD&I Council, which is based on the evaluation of R&D results of each research organization. In case the provider of institutional support has its own methodology for evaluating the results of R&D (research organizations), the RD&I Council proposal for distribution of institutional support could be change on the basis provider's methodology. Except the ASCR, which creates its own methodology for the evaluation of research institutes, this procedure is not use in practice.

In practice, it means that providers of institutional funding have the legal possibility to implement the reallocation of institutional funding at their discretions if they have created a sufficiently robust evaluation methodology of R&D. Providers would be able to more widely apply its legal options and discuss better targeting of institutional funding with the recipient. However, to develop and application evaluation methodology does not occur due to lack of professional and personal capacities of R&D department of individual providers. The result is that the level of institutional funding for research organizations is bound purely on evaluation of research results produced by the RD&I Council.

4.3 The beneficiary Research Organisations

4.3.1 Eligibility for institutional funding

According to the above mentioned Act No 130/2002 Coll. the power to provide institutional funding is delegated to individual providers. Each provider has the right to decide to provide or to disapprove institutional funding for Research Organisations, which were established by the provider or belong to its mandate. It is worth mentioning that no Research Organisation has the right given by the law to receive institutional funding.

The extensive power of providers has led to the increase of the number of supported organisations and their high heterogeneity in terms of quality and scope of their research activities, size, legal entity, etc. Consequently it has contributed to dilution of institutional funding and, thus, decrease of efficiency of public sources allocated to RD&I.

In order to reduce these negative impacts and to unify the methodology for assessment of eligibility of Research Organisations to receive institutional funding, the RD&I Council together with the Office for the Protection of Competition developed a specific two steps methodology for assessment of Research Organisations:

- **Step 1 – assessment of formal features** according to the Framework and decision if the organisation meets the conditions for Research Organisations rating. The main aim is to set a basic group or ROs, which are according to the Framework eligible for competitive funding. The assessment is based on key applicant's/beneficiary's documents (establishment deeds and other legal documents, financial documents, internal regulations, etc.). The list of organisations meeting formal conditions of Research Organisations is worked out by the RD&I Council. The following criteria have to be fulfilled for Research Organisations list rating:
  - the applicant/beneficiary is an independent legal entity;

- applicant's/beneficiary's main activities are basic research, applied research or experimental development and dissemination of research results via education, publication or technology transfer;
- the whole profit is reinvested into these activities;
- the applicant/beneficiary has its own directive for intellectual property rights activities.

An output of the step 1 is a list of beneficiaries fulfilling formal features of ROs. The list is a background document for decision making of the providers in the sphere of eligibility for competitive funding.

- **Step 2 – assessment of scientific features** of the Research Organisation. The list set up in the step 1 is an input for assessment of scientific features. The fact that the organisation is mentioned in the list does not give any right to receive institutional funding. The assessment of scientific features includes especially check of scientific characteristics, which the Research Organisation has to fulfil in order to be a beneficiary of institutional funding. The assessment is based on publically available registers (RD&I Information System, etc.) and documents provided by assessed organisations. Four criteria are applied in the assessment:

- The organisation carries out research activities for at least 3 last year.
- RD&I results generated by the organisation are in the RD&I Information System, in the last five years the organisation has generated at least 1500 RIV points.
- Confirmation that applied research results are provided to potential buyers under the same conditions;
- Prerequisite for long-term development of the Research Organisations in the form of brief definition of a conceptual intention of the organisation.

The assessment was carried out by the RD&I Council each year. An output of the step 2 was a list of beneficiaries fulfilling scientific features of Research Organisations and eligible for institutional funding. The list is a background document for decision making of the RD&I Council in the sphere of institutional funding.

Following to the methodology described above assessment of Research Organisations was carried out. On the basis of the results of the 2nd phase of assessment 26 Research Organisations were excluded from the list of Research Organisations, which were eligible for institutional funding in 2014. This situation led to discussion between excluded Research Organisations and the RD&I Council, which focused in particular on the second criterion of the 2nd phase of assessment (RD&I results generated by the organization are in the RD&I Information System, in the last five years the organization has generated at least 1500 RIV points), because Research Organisations which were excluded from the list have not reached the critical value of 1500 RIV points.

Research Organisations, which have not reached the limit of 1,500 points, were added to the list Research Organisations after the 2nd phase of the assessment, on the basis of an individual appraisal by the RD&I Council. The RD&I Council in particular took account number of points missing for 1,500 RIV points and research results. In view of the fact of new EU regulations in the field of RD&I support, the RD&I Council stopped this appraisal of Research Organisations in April 2014.

In the end of October 2014, the RD&I Council approved the new principles of assessment of ROs. The main reason for the implementation of the new assessment was the adoption of new EU legislation (Commission regulation (EU) 651/2014)

and the adoption of the Framework for State aid for research, development and innovation (SWD 2014/163). Providers of competitive and institutional funding for R&D have to abide by these regulations.

The new EU regulations sets out two categories of recipients of public funding for R&D – research and knowledge dissemination organisation (such as universities or research institutes, technology transfer agencies, innovation intermediaries, research-oriented physical or virtual collaborative entities) and enterprises. A specific form of public funding recipient represent research infrastructure.

The public funding for R&D could obtain only entities that have the status of Research Organisations. This condition is fulfilled by the public research institutions and public and state universities. The provider (or founder) of Research Organisations may carry out its own assessment and decide that a particular entity does not meet the characteristics of Research Organisations. Other entities will be assessed against the following criteria and the assessment of applications for obtaining the status of the Research Organisation will be evaluated by the RD&I Council at the request of relevant provider of R&D funding. For recognition as Research Organisations have to be fulfilled all these criteria:

- The entity has a single legal personality.
- The principal activity of the entity is carrying out non-economic activities in the line with the Framework.
- If the assessing entity performs knowledge transfer, it has to reinvest profits from these activities back to R&D.
- Unit holders or members of the entity shall not have preferential access to research results of the entity.
- The entity shall maintain separate account of non-economic activities.
- Assessing entity has an internal regulation for way of dealing with the research results.

The entity has to satisfy additional conditions in order to draw public funding for R&D as research organization. The entity may be the recipient of public funding as a research organization only if it performs R&D like a non-economic activity (according to Article 19 of Framework) of if the R&D activities have economic nature but they are incidental or limited (according to Article 20 of Framework). If the considered entity met all the criteria for assessing of the definition of the research organization and the conditions for assessing of non-economic and economic activities, it acquires the status of research organization, which is issued by the RD&I Council. The provider decides on the allocation of the funding and its amount for concrete Research Organisations (according to 7 § of the Act. 130/2002 Coll.).

If the institutional funding is provided, in the contract of provision the provider has to specify the using of the funding in accordance with EU regulations. Especially in case of the institutional funding for long-term conceptual development of Research Organisations, where the funding is not provide for the specific research project, the provider must clearly define that the funding will be intended solely for non-economic activities and that the funding will be provide and used in terms of Article 2.1.1 of Framework.

4.3.2 The use of the institutional funding

In line with its definition, institutional funding is provided for the long-term conceptual development of Research Organisations. However, the Act No 130/2002 Coll. does not further specify, what such development means and which activities are eligible for funding. **The act gives Research Organisations a high degree of autonomy to decide, how to use institutional funding**. The act only determines eligible costs:

- Personal cost, including scholarships for research, development and innovation;
- Acquisition of tangible or intangible assets;
- Purchase of services;
- Other overheads or expenses;
- Additional costs spent on research, development or innovation or the dissemination of their results or the legal protection of their results.

Interviews with Research Organisations representatives showed that institutional funding was used for funding of the following activities:

- Personnel costs (wages of researchers);
- Co-funding of research projects supported by national as well as international programmes (e.g. Framework programmes, etc.);
- Investment (purchase of new equipment, appliances, modernisation of laboratories) that is not eligible in the above mentioned research projects;
- Overheads of Research Organisations;
- Building activities and modernisation of existing buildings (like new windows, new facades, etc., new flooring, etc.);
- Funding of new (new research topics) and existing research activities, which are not supported by competitive funding;
- Providing of internal grants, bursaries, awards.

Except investment, all these activities have similar range of costs. **In fact, in most cases the largest share of the institutional funding is used for covering personnel costs of permanent employees and visiting researchers** (interviewed representatives stated that about 80-90% of personnel costs were covered by the institutional funding). The importance of personnel costs covered by institutional funding can be further illustrated by distribution of institutional funding within the ASCR. About 46% of institutional funding allocated to all ASCR institutes was used for covering personnel costs in 2013. For the individual ASCR institutes, this share varies from around 30-90%.[9]

Since the group of recipients is very heterogeneous in terms of legal forms, missions, types of RD&I activities and especially specific funding sources (specific RD&I programmes designed only for some types of Research Organisations), the proportion of the main activities covered by the institutional funding may vary substantially (synergies with other financial sources is further described below). This is particularly the case of capital funding which can be provided from several sources.

Capital funding of public universities can be covered by a specific programme – Programme 133 210 – which is focused on development and reproduction of capital equipment (tangible property) of public universities. It supports activities like new

[9] Annual Report on the Activity of the Academy of Sciences of the Czech Republic, http://www.cas.cz/miranda2/export/sitesavcr/data.avcr.cz/o_avcr/zakladni_informace/dokumenty/vyrocni_zpravy/archiv_vyrocnich_zprav/2013/pdf/AV_VZ13_13-cz-en.pdf?o.21312590220671757

buildings, reconstructions, modernisations. In 2014 CZK 1.86 bn is allocated to this programme

Institutional funding allocated to the ASCR (the ASCR budget chapter in the State Budge) is divided into two categories – non-investment and investment funding. The first group created the dominant share and amounts to CZK 3.6 bn. in 2013. Investment funding reaches CZK 0.8 bn. in the same year.

Moreover, the public universities and public research institutions can create funds for reproduction of tangible property, which is used for capital funding. The funds can receive finances from various sources. One of them is institutional funding. Annually, a small proportion of institutional funding can be transferred to the funds.

Other legal forms of Research Organisations can for investment activities use only their institutional funding, own sources or operational programmes (co-founded by the EU structural funds). The Operational Programme Research for Innovation has enabled Research Organisations outside Prague to radically modernize its research facilities. Research Organisations located in Prague have been supported by the Operational Programme Prague-Competitiveness, whose financial allocation has been substantially lower.

Except capital funding, the interviews did not found out important differences in use of institutional funding among different types of Research Organisations. All interviewed representatives stated that institutional funding is the very valuable financial source for their Research Organisations because of its relatively high degree of freedom for use of institutional funding. Therefore many Research Organisations aim to maximise their institutional funding and adapt their internal and very often informal strategies leading toward maximal production of RIV points, which are the basis for computation of institutional funding.

4.3.3 The internal distribution of institutional funding

Research organizations use different methods for internal redistribution of institutional funding. The most common method is that the management of research organization divides funding to the departments or research teams based on their anticipated R&D needs. The opposite way of redistributing of institutional funding means the funds are given to individual originators of research outputs registered in the RD&I Information System based on the number of RIV points generated by the outputs.

4.3.4 The internal distribution of institutional funding in the Academy of Sciences

The Academy of Sciences, provider of institutional funding, does not provide institutional funding based on the Metodika (see above) but by their own, different evaluation methodology. The evaluation of the ASCR took place in 2010 and it was ongoing in three phases. The first phase - the self-evaluation by committees and discussion of their final reports - was formally concluded at the meeting of the Academic Assembly in 2011. The second phase - the interpretation of the results of evaluation by the competent bodies and authorities of the ASCR in co-operation with management of research institutions - was started immediately after the summative phase. The third phase - the projection of this interpretation in the design of organizational and financial measures - was considered by the Academic Assembly in the end of 2011.

Evaluation process was driven by 9 evaluation commissions consisted of 62 members, most of whom were external (outside ASCR) and 9 of them came from abroad. Each committee was responsible for the scientific evaluation of one section of ASCR, i.e. 4-8 research institutes. However, the evaluation was carried out not

only by the research institutes but also at the level of scientific teams (groups). More than 400 research teams were evaluated.

Each evaluation committee identified the rapporteur, which were responsible for the evaluation of the individual research institution. These rapporteurs also prepared a list of suggested evaluators from abroad. Foreign experts were contacted and asked to choose teams/institute they were able to evaluate. Under this process has been selected more than 230 foreign evaluators, who developed 665 evaluate reports of research teams (or institutes).

Expert evaluation was preceded by fairly extensive preparatory phase. In this phase, the research results of research institutes have been used bibliometric analysis. Institutions also had the guidelines to prepare self-evaluation which described its specifics, relevance to the research field and society and processed in detail five areas:

- The number and quality of the research results and their scientific and innovative potential,
- Socio-economic impacts of research results,
- Participation in international research cooperation,
- Human resources, the age structure of employees and SWOT analysis of each research institute,
- Level of participation in grant projects of GACR and others, activity in postgraduate education and memberships in scientific societies, editorial boards and grant agencies.

On the basis of this information the following criteria were evaluated:

- Quality and number of achieved research results and their valuation by the scientific community (pertinently the application potential of research results),
- Position of institute (or department) in international and or national context,
- Views of the institute (or department) in the coming years and their relevance to the scientific concept of ASCR (suitability of scientific content and scientific strategy, feasibility of research program, perspective of researchers, etc.).

Overall evaluation of research institutions of ASCR and their departments was based on the self-assessment, on bibliometric analysis, on reports of foreign evaluators and on personal visits of evaluators in the each research institutes. For an overall evaluation of the research institutes were evaluated areas 1.-5., for evaluation of their research departments were evaluated areas 1.-.4. The weight of individual criteria for the overall evaluation was predetermined. For the evaluation of research institutions and their departments were established five-point scale, where score 1 represented excellent rating and score 5 represent unsatisfactory rating.

It is clear that the evaluation used by ASCR is much more complex than Metodika. Neither the evaluation, which is used by ASCR is not flawless. The main objection relates to the number of invited evaluators and the mechanism of their choice. It is unlikely that the 230 experts completely and sufficiently covered the whole spectrum of research activities which are implemented by 54 institutes and 406 research units of ASCR. Moreover, when comparing the number of evaluators and the number of evaluation reports it is clear that about half of the evaluation of research teams was based on opinion of one evaluator and it is highly subjective. However, according to available information, there was not enough allocated funds for evaluation and because it was not possible to invite a more external experts. The method of selection of evaluators was not clear, because there was not guarantee of

their independence and their systematic coverage of the whole spectrum of research fields of all research institutions of ASCR.

The amount of institutional funding for the individual institutes is set according to the following principles and method:

- From the qualitative profile, a weighted mark is determined for every institute within the scale stipulated by the Methodological Instructions for the Approach of the Evaluation Commissions in Assessing the Research Activities of the Institutes of the ASCR in 2010–2011. The weighted mark is calculated from the marks of the individual units with the weight set by the number of the recounted workload of its research employees.
- For the transfer of the conclusions of the mentioned evaluation into the proposal of the institutional financing for each year, each institute of the ASCR is based on the weighted mark placed in one of five categories for the provision of institutional funding Ia, Ib, IIa, IIb and III.
- The proportion of the amount of institutional means to be divided within the individual science areas is maintained at the level of 2011 (i.e. SA I 39.17%, SA II 45.17% and SA III 15.66%).
- 75% of the available institutional means for each year is divided in the proportion of the amounts 'base for science after the evaluation' for the individual research institutes according to the allocation for next year.
- The amount 'for division according to the results of the evaluation' is divided among the research institutes according to the results of the evaluations in the following way:
- The amount is first divided into the individual science areas in the proportion according to the third bullet. For each institutes, the 'base of institutional funding' determined in the fourth bullet is then multiplied by the coefficient W(k) specific for the given category for the provision of institutional funding (k = Ia, Ib, IIa, IIb and III), which reflects the results of the evaluation. The result of this operation is the 'total institutional funding after the evaluation' for the individual research institutes.

The differences between the coefficients of W(k) are with respect to a reasonable level of the scale for the amount of funding in the individual categories (so that the changes evoked by the evaluation were distinctive and motivating, but not such that they would threaten the effective use of the means) determined in this way:

- W(Ia) – W(Ib) = W(Ib) – W(IIa) = 0.034;
- W(IIa) – W(IIb) = 0.040;
- W(IIb) – W(III) = 0.060.

The specific values of the coefficients W(k) are prescribed for the individual science areas so as to maintain the overall amount of the financial means divided in the given science area within this step.

For the division of the institutional funding for 2013, the same algorithm will apply as for 2012, i.e. the method described in steps (iii) through (vii) in Part 1, in which 2012 is replaced by 2013 (with the proportions of the amounts of the 'base for science after the evaluation' according to the allocation for 2011 in step (iv) being used again).

For the period beginning in 2014, the Academic Council of the ASCR anticipates a gradual transition to financing of the institutes based on the performance of the 'Programme of Research Activities for 2012–2017'. A complex evaluation of the individual units will be conducted once every six years. In between, a regular check of the performance of the current programme of the activities will be conducted at

every institute every two years, the aim of which will be to determined how the institute reacts to the conclusions of the complex evaluation and how carries out its programme. The results of this check will always be taken into consideration in determining the institutional funding for the following two years, where it will proceed from the results of the evaluation for 2005–2009. The sense of all of these measures will be to ensure sufficient stability and continuity of the financing in the given period and at the same time appropriate consideration of the dynamics of the development of the institutes.

4.4 Institutional funding for research versus other national funding sources

4.4.1 Trends in the share of institutional funding

The amount of **institutional funding allocated to individual Research Organisations is very heterogeneous and unevenly distributed** (see Table 6). In 2013, the maximal amount exceeds 7,889times the minimal institutional funding. The uneven distribution of institutional funding reflects significant differences among Research Organisations. On the one hand, there are large universities with many faculties and high numbers of researchers, on the other hand institutional funding is also channelled to rather small Research Organisations with only few researchers.

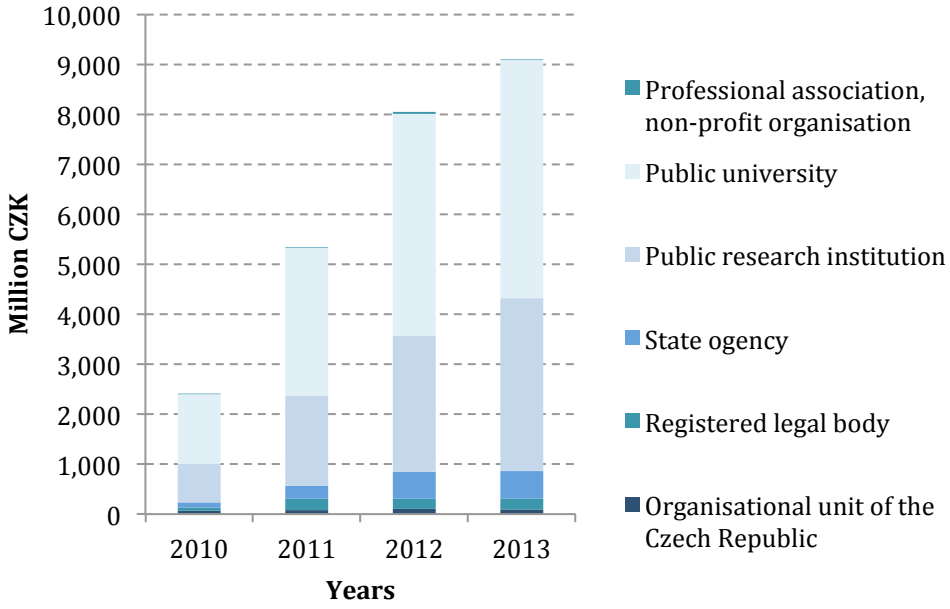
Table 6 – Basic characteristic of institutional funding allocated to individual Research Organisations

Year	Minimal allocation	Maximal allocation	Average allocation	Median
2010	201	464 490	18 508	7 435
2011	155	1 078 834	41 473	17 025
2012	208	1 414 066	53 659	21 894
2013	179	1 412 088	57 658	22 404

Source: RD&I Information System

Traditionally, the largest share of institutional funding received public universities (see Figure 5). In 2013, their institutional funding amounted to CZK 4.77b, 52.4% of institutional funding. The next largest recipient was the ASCR (ASCR institutes) with CZK 3.1b (34.2%). There is an obvious change in shares of these both types as a consequence of an increase of a number of recipients. A growing number of public research institution caused increase of this group from 32% in 2010 to 38% in 2013. In the same period, the share of universities decreased from 58% to 52%. The highest amount of institutional funding flows to the Charles University, which received CZK 1.4b in 2013 (15.5%).

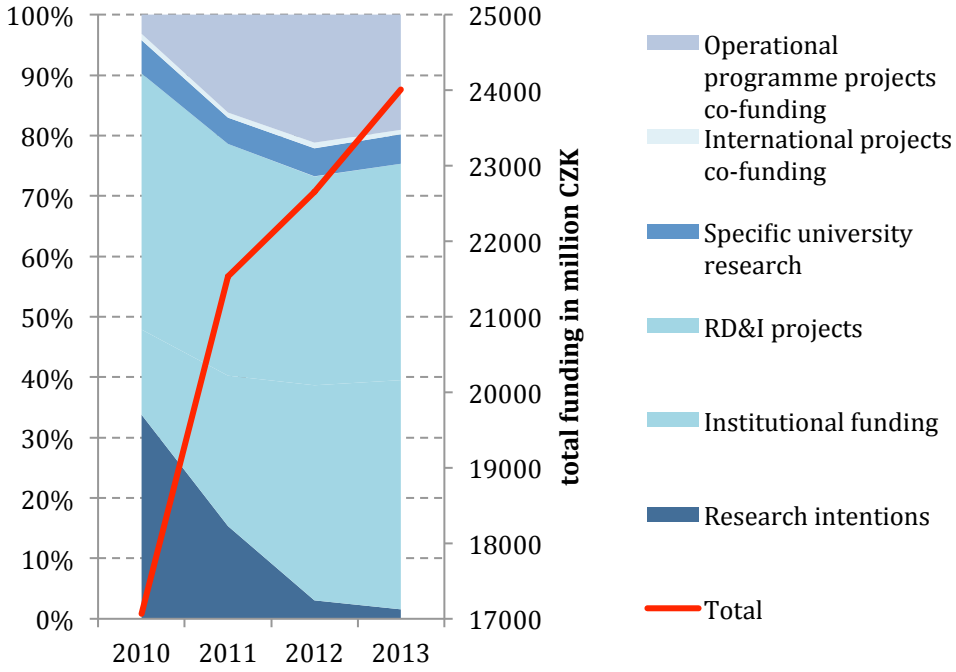
Figure 5 - Development of recipient types shares on institutional funding



Source: RD&I Information System

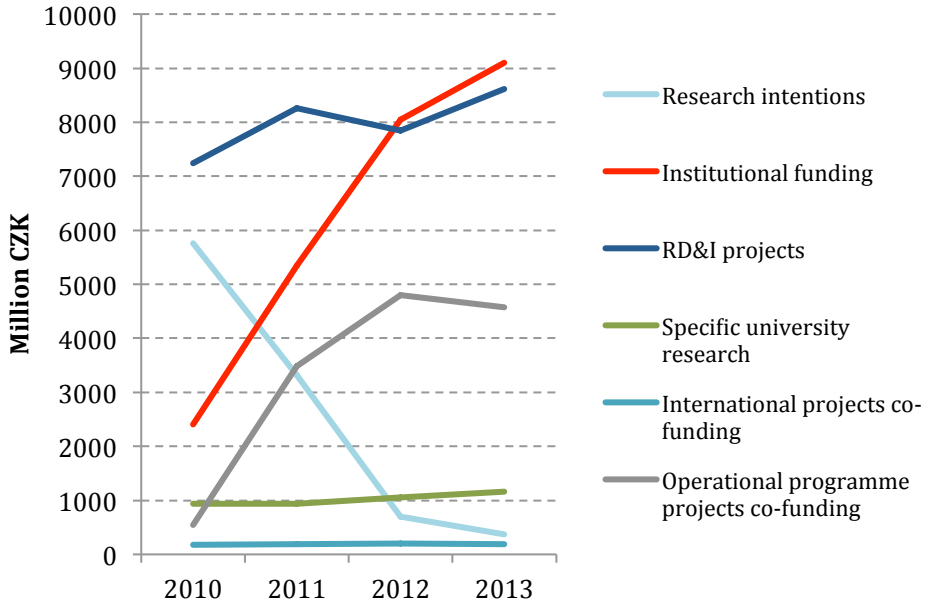
The structure of national public RD&I funding of Research Organisations changed substantially in recent years (see Figures 6, 7 and 8). First of all, with the transition from research intentions to the current system, there is a gradual increase of institutional funding while a share of research intentions decreased almost to 0% (some research intentions finished in 2013). However, shares of both forms of institutional funding in 2010 were higher than at the end of the transitional period (a decrease from 48 % to 39%). The next important developmental feature was a relative decline of competitive funding from 42.4% in 2010 to 35.9% in 2013. Both relative declines can be explained by a massive increase of operational programme projects co-funding (see Figure 8), which rose by 16% to 19% in 2013.

Figure 6 – Structure of national public RD&I funding of Research Organisations



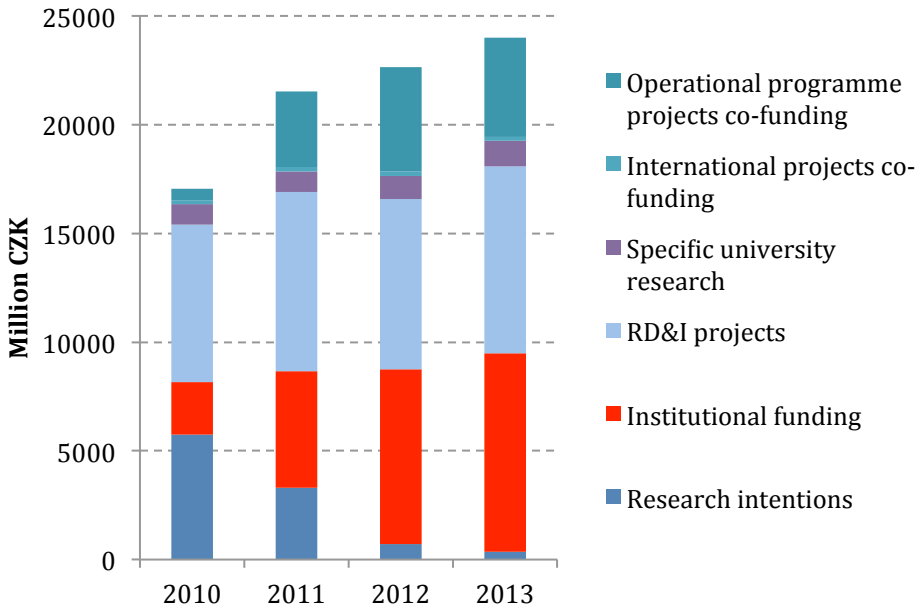
Source: RD&I Information System

Figure 7 – Development of national public RD&I funding sources of Research Organisations



Source: RD&I Information System

Figure 8 - Development of national public RD&I funding of Research Organisations



Source: RD&I Information System

The substantial heterogeneity of Research Organisations is reflected in highly diverse structures of their RD&I public funding incomes. The institutional funding share on RD&I public funding varies from 1.7% (the National Technical Museum) to 100% (Institute for Research and Preservation of Archaeological Monuments of Northwest Bohemia, Museum of Czech Literature, Police Academy of the Czech Republic) in 2013. 66 Research Organisations exceeded 50% share of institutional funding on RD&I public funding incomes in the same year, 14 organisations reached more than the 75% share (the majority of them are ASCR institutes, however, they rather belong to the smallest institutes with low RD&I expenditures - Institute of Archaeology of the ASCR, Institute of Geology of the ASCR, Institute of Mathematics of the ASCR, Institute of Philosophy of the ASCR, Oriental Institute of the ASCR, Institute of State and Law of the ASCR, Institute of Slavonic Studies of the ASCR). The average share was 46%, while the median was 45%.

High variety among Research Organisations types in their structures of RD&I public funding incomes is shown in charts shown in the Appendix D. As for importance of institutional funding in RD&I public funding of Research Organisations, institutional funding is the main RD&I public funding source for organisational units of the Czech Republic (59%), followed by ASCR institutes (48%), public research institutions (47%) and public universities (36% in 2013).

These high differences among shares of institutional funding on RD&I public funding structures would be caused by at least two factors. Probably the most important factor would be a different mission of Research Organisations. The second factor would be availability of other funding sources (e.g. specific programmes only for some types of Research Organisations).

An influence of the availability of specific funding sources can by illustrated in the case of public universities. Public funding of public universities combines RD&I funding with funding of educational activities (see Table 8.). As for RD&I funding, universities can use an exclusive funding source - the specific university research funding, which belongs to competitive funding, although it is de facto institutional

funding (in fact, up to 2010 it belonged to institutional funding). Table 7 shows that the major funding source of universities is teaching related funding, which is based on a formula, taking account of the scope and content of educational activities. Institutional funding accounts only for about 16% of university funding from the state budget.

Table 7 - Public funding of universities in 2014

Funding type		CZK (thousand)	%
Teaching	Teaching related funding (normatives)	19,751,969	62.0
	Accommodation and diets for students	155,303	0.5
	Programme funding of investment and non-investment activities	1,863,530	5.9
RD&I	RD&I competitive funding	3,890,683	12.2
	Development of Research Organisations (institutional funding)	5,017,664	15.8
	Specific university research	1,165,308	3.7
Total		31,844,457	100.0

Source: State Budget Act

If we consider the overall funding structure of Research Organisations (including own sources, foreign programmes, structural funds, etc.), the share of institutional funding declines further. For instance, in the case of public universities institutional funding created only 10% share in 2013; institutional funding of ASCR institutes reached 34%.

4.4.2 Synergies with other public RD&I funding sources

The previous chapter showed that Research Organisation funding in the CR is based on a multi-sources scheme; it means that Research Organisations combine various public as well as private financial sources to perform their RD&I activities. Shares or importance of these sources varies substantially depending on their missions, sizes, legal entities, character of RD&I performed, etc.

Talking about synergies between the institutional funding and other RD&I funding sources, it is crucial to take into consideration different purposes and goals of various funding sources. In brief, while the institutional funding, in line with its name, focused on long-term conceptual development of Research Organisations, the competitive funding aims to support research projects dealing with particular and closely specified topics, tasks and activities. Thus, such research projects have clearly defined eligible activities and costs; other costs closely linked to them (e.g. overheads, investments) are strictly limited. In many cases research projects even require some co-financing. In this sense, the high degree of synergy is obvious, because the institutional funding is used for covering all other costs of the projects and the Research Organisation including operational costs. Moreover, institutional funding ensures sustainability of the research projects, supports other research activities and funds RD&I employees (including researchers). Simply, it provides high degree of institutional stability and stability of research teams.

Empirical or quantitative proving of the synergy faces to the lack of appropriate information. However, the RD&I IS provides two elemental evidences of the synergy:

- Except 3 specific Research Organisations, all ROs are recipients of the both institutional and competitive funding in 2013;
- In the same year, creation of more than 78% of research results registered in the RD&I IS was funded by a specific mix of the institutional funding and

various RD&I programmes (competitive funding, including Framework programmes and other foreign programmes).

4.4.3 The relation between institutional funding and the research priorities

Because of the high amount of institutional funding and its importance for Research Organisation funding the question of links between institutional funding and research priorities at various hierarchical levels becomes more significant. At the national level, distribution and utilisation of institutional funding is defined in the Act No 130/2002 Coll. Institutional funding is focused on the long-term conceptual development, but the act does not specify whether or not any national research priorities or priorities of providers should be taken into account. Thus, no relations are defined in the legislative documents.

The National priorities of oriented research concentrates on competitive funding, providers use them as a background document for elaboration of their research funding programmes. Their goal was never to be used for the distribution of institutional funding. Interviewed representatives of providers have confirmed that the Priorities were not used for the distribution of institutional funding. Nevertheless, some providers confirmed that their ministerial RD&I policies (concepts) were taken into consideration during yearly evaluation of RD&I activity reports submitted by recipients.

At the level of recipients, interviews proved high heterogeneity among Research Organisations reflecting different mission, legal types, sizes, types of RD&I performed, etc. All Research Organisations have some research priorities or developmental priorities. Usually, the priorities are not connected with funding sources, it is expected that they are funded by a mix of competitive and institutional funding and private sources. Some Research Organisations, namely some regional universities, have anchored into their developmental strategies their effort to maximise institutional funding. In the strategies, this effort is documented by an objective to reach several thousands (e.g. 10,000) RIV points up to e.g. 2015. This aim is not, however, further connected with their research priorities or topics[10].

4.5 Evaluation and control mechanisms

One of the key factors of successful use of institutional funding is an efficient and effective control mechanism. The research intention system was criticised because of underdeveloped, ineffective and very formal control mechanisms, which did not motivate Research Organisations to use their institutional funding effectively and did not stimulate RD&I quality enhancement. All these weaknesses should be eliminated by the new institutional funding system.

Control mechanisms do not deal only with links between providers and recipients, as it is usually understood, but relates to all related hierarchical levels from the central (governmental) level, through providers, recipients up to research teams and individual researchers. This chapter focuses on these levels, describes control processes and tries to identify and analyse main weaknesses.

[10] Žížalová, P., Čadil. V., Pokorný, O., Kostić M. (2011): Podpora vytváření strategií zaměřených na realizaci výsledků VaV v praxi a ochranu duševního vlastnictví a motivace spolupráce s aplikačním sektorem. TCAVČR.

4.5.1 Control mechanism of providers

As was mentioned several times in this report, fundaments of the control mechanisms are given in the Act no 130/2002 Coll., on the funding of research and development from public funds. In its section 13 the Act says:

"*The grantor (provider in our terminology) shall be obliged to exercise financial control of funding receivers under special legal regulations covering at least 5% of the total amount of targeted and institutional funding provided by the grantor in a given calendar year.*"

The section 34 further specifies that all providers shall be particularly responsible within the scope of their powers for:

"monitoring the utilisation of targeted or institutional funding provided from their budgetary chapters, meeting goals where these have been set and evaluating the results achieved."

The financial control shall be carried out according to the Act No 320/2001 Coll., on financial control, which in the section 8 states, simply speaking, that providers have to create a financial control system and to carry out financial control of all beneficiaries. Besides the mentioned sections the Act No 130/2002 does not contain any other details on controls of the institutional funding.

Although control is defined only in general terms, we can say that there should be two types of control – (i.) financial control and (ii.) evaluation of results achieved (evaluation of utilisation). Whilst financial control is anchored in the Act No 320/2001 Coll, which provides a sufficient framework for these controls, evaluation of results and utilisation carried out by providers is not further ensured by a framework common for all providers (it is not even further specified in legislative documents).

Interviews with providers revealed that while the financial control is carried out in the same way by all providers, there are some differences in evaluation of results and utilisation among providers. The ASCR has its own specific evaluation system for quality assessment of its institutes that runs in 5 years cycles. The MEYS has neither specific evaluation methodology nor carry out evaluation of results (due to the high number of supported Research Organisations and their heterogeneity it is problematic to ensure evaluation). Instead, it uses evaluation of Research Organisations conducted by the RD&I Council. The other providers have systems based on, with some exceptions in opposition procedures, framework used for assessment of research intentions. In simple terms, it means that recipients have to each year elaborate reports on their research activities and economic results. These reports are evaluated by ministerial expert panels consisting of internal and external experts (including representatives of application sphere).

During the interviews, almost all providers complained about the low numbers of personnel dealing with administration of institutional support and especially evaluation of Research Organisations and their outputs. In some cases they claimed that they did not have any internal experts responsible for evaluation. This understaffing is partly a side effect of the Reform and partly it is caused by the political effort to reduce employment in the civil service (ministries). Moreover, providers do not have sources for funding external experts or for public tenders focused on evaluation activities. In this sense, there is a substantial difference between competitive and institutional funding. The Act No. 130/2002 Coll. guarantees that 2.5% of the RD&I budget allocated to provider can be used for funding of managerial and administrative activities. However, this source can be used only for: "*public tenders in research, development and innovation, as well as issuing public contracts, including costs for project evaluation and monitoring and assessing the results achieved, as well as assessing conditions for the provision of support for specific university research, major infrastructure or international*

cooperation by the Czech Republic in research, development and innovation." This quotation shows that implementation of institutional funding is not included into eligible activities.

4.5.2 Control mechanism of recipients

Control and evaluation mechanisms at the level of recipients are **vaguely defined in the relevant laws** (Act no. 111/1998 Coll. on higher education, Act no 341/2005 Coll. on public research institutes and Act no 283/1992 Coll. on the Academy of Sciences of the Czech Republic). Whilst the financial control is quite clearly described, controls of research activities performed are mentioned only in the sense, that are in responsibilities of some parts of Research Organisation management (without any further descriptions of control processes, etc.).

The very general definitions and the high heterogeneity of Research Organisations results in considerable variety of control mechanism. In fact, **each Research Organisation has its own specific system for control and evaluation**. Apart from financial control, which is with some minor differences common for all organisations, the following mechanisms has been identified in our interviews as the most often:

- Internal audit;
- Internal defences of research activities;
- Periodical evaluation of research teams.

Internal audits are used by universities and large Research Organisations as a tool for prevention of important risks in the progress of research projects (in many Research Organisations, there are internal research projects funded by institutional funding or by a mix of competitive and institutional funding). Internal defences of research activities or research projects are used for ensuring high quality of research performed by research teams (in many cases research projects are reviewed by foreign experts). Periodical evaluations of research teams have the same purpose; however, their scope is broader and may involve larger spectrum of issues including funding, research staff involved, collaboration activities, etc.

A specific control mechanism used by ASCR institutes is a **system of attestation of researchers**. Each researcher is periodically evaluated based on a set of criteria. The main aim is to stimulate researchers to continuously improve their research performance. Moreover, the attestation is crucial for development of their research careers, as positive results of the attestation are essential for appointment to higher positions (like leading researchers, etc.).

Besides above mentioned mechanisms, all Research Organisations use **standard management control** in terms of regular reporting on the progress of research activities (projects) to the highest management. Forms of this control mechanism vary among Research Organisations depending on organisational structures and degree of autonomy of research units. Thus, in the case of, for example, ministerial Research Organisations or private Research Organisations report to the highest management of the Research Organisation, university researchers (research teams) report to the management of the organisational unit they belong to (departments).

4.5.3 Co-ordination and control mechanisms of the whole institutional funding system

The overall co-ordination of control mechanisms and evaluation of the whole institutional funding system is not defined by laws (except financial control). There is only regular control mechanism is that providers have to report to the Ministry of Finance on drawing funds from the State Budget chapters conducted by providers. Besides, other state bodies responsible for financial and other controls in the civil services, e.g. the Supreme Audit Office, can carry out some ad-hoc controls. Other

control and evaluation mechanisms are missing at the highest (state) level of the institutional funding system.

4.6 Impact of the transition

Impact evaluation of the transition from the research intentions system to the current institutional funding system faces to a relatively short time period from the completion of the research intentions funding system (it means that impact has not been fully evolved yet) and the lack of appropriate information sources mentioned in the introductory chapter.

Thus, despite these negative factors, our impact analysis is based on interviews with representatives of RD&I management of Research Organisations and providers, and our expert view. Additional information source were reports (annual reports) of the Research Organisations.

4.6.1 Impact on providers

Impact on providers cannot be separated from impact of the whole Reform of RD&I system in the Czech Republic. According to the Regulatory impact assessment report of the amendment of the Act no. 130/2002 Coll., the reform should **reduce employment in ministries providing both forms of RD&I funding**. Besides ministries, who are no longer providers of RD&I funding, the number of employees decreased also in the ministries, whose RD&I supporting activities did not be reduced. As a result of such employment decrease, providers (ministries) suffer from a lack of personnel involved in the agenda of institutional funding. This would increase the vulnerability of the entire institutional funding system and could help to inefficient use of public resources.

The impact of the Reform cannot be perceived only negatively. The key positive impact is the **high degree of autonomy of providers** in the field of distribution of institutional funding and evaluation mechanisms. Nevertheless, the **providers have no power** (given by law) **to specify eligible activities and costs, and influence recipients research topic and activities funded by institutional funding**. Consequently it could lead to inefficient use of the funding and duplicities (multiplicities) of research activities performed by supported Research Organisations.

Since the administration of the **current institutional funding system requires less administrative operations** (e.g. there is no ex-ante assessment of research plans) than the research intentions system, we can talk about the decrease of administrative requirements for providers.

4.6.2 Impact on recipients

Similarly, the current institutional funding system is **also less administratively demanding to recipients**, who do not have to elaborate any research intentions, research plans, work out annual activity (progress) reports and other reports to providers, organise yearly evaluation (reviews) of their research intentions, etc.

Research Organisations have also a **higher degree of autonomy** in terms of use of institutional funding. No legislative documents define how to use institutional funding, or which activities can be funded from institutional funding. Each Research Organisation can use institutional funding according to its development needs, flexibly decide on use of the funding, change research activities funded from institutional funding without any reporting to providers, etc.

The institutional funding ensures Research Organisations **a high level of freedom to define own research topics** and flexibly funds them without any delay caused by elaboration of research projects (projects proposals). Research

Organisations can freely change research topics and, internal research projects according to current development and conditions.

The institutional funding brings **competition among Research Organisations as well as within them**. The organisations and research teams compete each other; they are forced to generate more RIV points in order to "earn more money". Nevertheless, such **competition could negatively affect behaviour of researchers and even many Research Organisations**, which**,** in many cases, have to maximise the number of RIV points instead concentrate on quality of their research activities and their research results. Some Research Organisations even incorporate their effort to generate more RIV points into their strategic development documents.

The transition caused **crucial changes in stability of Research Organisations funding**. Whilst research intentions provide funding for 5-7 years periods, the current system provides funding only for one year without real predictions for the following years. According to the interviewees, very often Research Organisations do not know how much money can receive up to the very last moment. This substantially limits their strategic planning (including internationalisation, development of science-industry links, etc.) and planning their research activities, which are not funded by competitive funding or other financial sources.

4.6.3 Impact on quality and scope of R&D activities

Regarding the scope of R&D activities, the **increase of the number of supported Research Organisations could** be considered as one of the most important impact. While research intentions system supported only 142 Research Organisations, the new funding model finances 158 organisations (in 2013). The number of newly supported Research Organisations (supported in 2013) reached 16 (see Appendix B).

The Reform of the RD&I System in the Czech Republic argued that the new funding system would increase of RD&I results or RD&I activities in general. Because evaluation of quality of RD&I results is very expensive and time consuming activity, it is difficult to prove if the quality of outputs is really increasing. Indirectly we can the quality increase assesse according to changes of the spectrum of outputs. The current Evaluation Methodology and its previous versions put the accent e.g. on articles in scientific journals with impact factors, which belong to basic bibliometric indicators for evaluation of quality. Assuming that such articles really indicates the quality of research performed, we could according to their increasing number judge that **Research Organisations gradually increase quality of their research or, at least, research outputs** (there can be a significant progress in dissemination of their results, because the Research Organisations are forced (by the Evaluation Methodology) to publish their outputs in impact factor journals (the quality could be quite high before the Evaluation Methodology begun highly value articles in impact factors journals). Nonetheless, we cannot say how the number and range of research outcomes (articles) would change without changes of the system of institutional funding.

Similarly, we cannot diminish the weight of other factors influencing the increase of publishing activities of Research Organisations. According to J. Vaněček (2014)[11], who analysed numbers of publications in journals indexed in Scopus and EPO

[11] Vanecek. J. (2014): The effects of performance-based research funding on output of R&D results in the Czech Republic. Scientometrics 98:657-981

patents applications, the fastest growth occurred in the period 2004-2007 after the start of Research Organisations evaluation, but it slowed down after the announcement of the financing reform in 2008. It is possible, however, that acceleration of the growth of R&D outputs could have been partly due to the evaluation of the institutions.

The institutional funding contributes to **modernisation of research equipment**. Research Organisations can use them for investment activities (purchase new laboratory, scientific equipment and appliances, modernisation of buildings etc.), co-funding of large investment projects supported by operational programmes (especially the Operational Programme Research and Development for Innovation) or funding activities and costs, which are not eligible in projects supported by competitive funding (competitive funding programmes strictly limit investment).

Identifying and evaluation of impact on research disciplines is rather difficult because of above mentioned lack of information. Surprisingly, even representatives of Research Organisations were not able to identify and describes such effects. One of the main reasons is that Research Organisations use multi-funding model of their activities where decrease of one funding source is replaced by another sources. It means that declines of the amount of institutional funding are balanced by higher competitive funding. In many cases, it puts pressure on researchers to prepare and submit more research projects. However, two broad weaknesses were identified during interviews. The first one is a negative impact on applied research. The current Metodika prefers rather publications as main outputs of research activities (consequently, a higher number of RIV points is assigned to publications then other types of outputs). Applied research outputs are rather discriminated (however difficult it is to create such outputs like new cultivars or breeds) in terms of RIV points assigned. The second weakness relates to safety research. The Metodika and the system of institutional funding distribution do not take into account specifics of Research Organisations dealing with this type of research in the Czech Republic. These Research Organisations perform their research activities together with expert activities (which are not involved into the Metodika), many activities are obligatory and carried out on the basis of laws, and last not but least many reports are confidential.

5. Conclusions

5.1 SWOT analysis

The SWOT analysis summarises and sorts out the main conclusions. For better clarity the analysis is divided into two parts. The first one deals with the overall governance of the institutional funding system and the roles and power of the funding providers. The second part focuses on the Research Organisations as institutional funding recipients.

Providers

Strengths	Weaknesses
• The existing institutional funding system is simpler in comparison with the previous research intentions funding model and peer review-based systems used abroad. • The current institutional funding system is slightly less administratively demanding than the previous research intentions funding model. • The Act no 130/2002 Coll. (amended the Act no 211/2009 Coll.) gives providers a high degree of autonomy in terms of institutional funding distribution (including evaluation). • There is only one research evaluation methodology valid for all providers (with the exception of the ASCR). • Financial and accounting control of institutional funding is defined by law (Act. 320/2011 Coll., Act no 130/2002 Coll). • Existence of a national RD&I Information System, which contains information about all RD&I outputs generated thanks to RD&I public support (institutional as well as competitive). • The current institutional funding system creates a competitive environment stimulating Research Organisations to higher performance.	• There is no official central co-ordination of the institutional funding system (no executive body is responsible for co-ordination). • The size of the institutional expenditures budget chapter does not match the results of the evaluation and previous commitments, and is too much influenced by negotiations with the Ministry of Finance and within the Government. • Methods for the evaluation of Research Organisations and distribution of institutional funding (according to the Metodika) do not reflect differences among scientific fields, Research Organisations (including different missions), RD&I outputs generated, providers, etc. • Not all rules, responsibilities and activities of providers are defined by law - or only in a very general way. • Providers do not have internal strategies for their distribution of institutional funding. • Frequent changes of the RIV point numbers assigned to individual types of research results used in the Metodika have negatively affected the stability of the whole system. • Due to the low personnel capacity in R&D departments, the providers have only limited resources to develop their own methodologies for evaluation and distribution of institutional funding, although the Act no 130/2002 Coll. gives them this power. • The RD&I Information System does not contain detail information on ROs supported by RD&I public expenditure (e.g. no information on a number of researchers). • Information sources on RD&I public funding and ROs provides information, which are not identical and comparable in

Strengths	Weaknesses
	many cases (e.g. there are some differences between the same data from the RD&I Information System, annual reports of ROs and data provided by the Czech Statistical Office). • Unusual use of single evaluation methodology and funding principles for universities and other Research Organisations. • In comparison with foreign countries, the number of institutional funding recipients (supported Research Organisations) is relatively high in the CR, and their variety is very large in terms of size, mission and types of RD&I activities performed.
Opportunities	**Threats**
• Upcoming amendment of the Act no 130/2002 Coll. could create an opportunity for improving the institutional funding system. • The "IPN Metodika" project will develop a new evaluation methodology and propose new funding principles for institutional funding of Research Organisations.	• Lack of political will to change the funding system. • Demands of individual ministries (providers) and political discussions could negatively affect the upcoming amendment of the Act no 130/2002 Coll. in terms of setting up a more effective institutional funding system. • Unsystematic interventions of politicians and ministries into RD&I budget drafting. • The need to reduce public spending will reduce the amount of institutional funding. • The need to reduce employment in the civil service will not allow for employing staff responsible for an improved management of institutional funding at the providers' level.

Recipients

Strengths	Weaknesses
• The current institutional funding system has created a more competitive environment stimulating researchers and Research Organisations to higher research performance. • Research Organisations have developed their own internal mechanisms for distribution of institutional funding. • By law, Research Organisations have a relatively high degree of autonomy in terms of management, distribution and use of institutional funding. • Some Research Organisations (large organisations and universities) have their own internal audit units and carry out evaluation of research.	• Short (annual) cycle of Research Organisations evaluation and distribution of institutional funding does not allow for developing long-term strategic plans within Research Organisations. • Usage of the outcome that come out from the evaluation based on the Metodika for strategic managements of Research Organisations is rather limited because of the general and summative character of the evaluations. • The Metodika and its funding principles had negative impact on the behaviour of researchers, who adapted their outputs to the Metodika in order to maximise the number of RIV points. • Usage of institutional funding is bound to year-long state budget cycles.
Opportunities	**Threats**
• The upcoming amendment of the Act no 130/2002 Coll. and the Higher Education Act can create favourable conditions for use and distribution of institutional funding within Research Organisations (including internal evaluations of research and research teams). • Research Organisations will implement principles of professional management at all levels. • Research Organisations will develop an evaluation and monitoring system resulting in more effective use of institutional funding. Foreign experts will be involved into the evaluation.	• Ongoing conservative attitudes of researchers towards changes may create resistance towards a new evaluation methodology, or cause delays and tensions with possible negative impact on the actual research. • The need to reduce public expenditures may negatively affect the amount of institutional funding. • Providers may lay down too detailed or rigid conditions for the allocation and use of institutional funding.

5.2 Overall conclusions

The institutional funding system in the Czech Republic has undergone substantial changes in recent years in terms of the governance, the evaluation methodology, funding principles and the number of Research Organisations supported. The changes result primarily from the Reform of RD&I system in the Czech Republic; partly caused by the current political pressures to cut public (state budget) expenditures during the current economic slowdown.

Based on the analysis of the institutional funding system in the Czech Republic and WP5 conclusions we can draw the following conclusions:

- The institutional funding system is decentralised without any formal co-ordination body. The funding system is informally controlled by the RD&I Council. Low level of co-ordination of providers, recipients and RD&I activities

performed by recipients may cause funding multiplicity and ineffective use of institutional funding.

- The role of the Council in the whole system is unique. On the one hand, it is an advisory body of the Czech Government, on the other hand it has an executive power in terms of drafting RD&I State Budget expenditures including institutional funding distribution among providers, elaborating the National RD&I Policy, development of the evaluation methodology (including institutional funding principles) and carrying out of Research Organisations evaluations (evaluation results are used for distribution of institutional funding among recipients). Nevertheless, the Council has no control, monitoring and enforcement competencies.
- Autonomy of providers in terms of institutional funding distribution among recipients and evaluation of Research Organisations is quite high. Nonetheless, the providers do not use the autonomy fully because of the lack of personnel as well as financial capacities (e.g. consequently they are not able to develop methodologies and evaluate Research Organisations).
- Division of responsibilities and powers between providers and recipients seems to be appropriate, it respects the high autonomy of them and guarantees a high degree of freedom for recipients to define and perform RD&I activities.
- Distribution of the state budget expenditures among providers (the amount of institutional funding allocated to individual providers) depends on politicians decisions and negotiations within the Government rather than number of RIV points generated by recipients.
- The factual main objective of evaluation is to distribute institutional funding among Research Organisations (to determine the amount of institutional funding). It can hardly be used for governance of the entire system (there is no formative purpose of the evaluation) at different hierarchical levels (the Government, providers and recipients).
- Unlike other providers, the ASCR has its own specific institutional funding system in terms of own evaluation methodology of ASCR institutes, own funding principles and strategies. The methodology and the funding principles reflect specifics of the ASCR institutes and their research activities.
- In comparison with reference countries (Austria, United Kingdom, the Netherlands, Norway and Sweden) the number of Research Organisation supported (recipients) is relatively high and is still growing. Moreover, the recipients are a very heterogeneous group in terms of their size, missions, legal forms and RD&I types performed. Application of the same evaluation metrics and funding principles inevitably leads to discrimination of some types of Research Organisations (especially ministerial Research Organisations dealing with applied or security research). However, there are no common methodologies used for all Research Organisations types in reference countries. Instead, each type of Research Organisation is evaluated (and funded) according to methodologies specific for a given type of institution.
- The Reform has reduced the number of providers; consequently some Research Organisations, whose original providers no longer provide institutional funding, was transferred to other providers. These “new” providers claim that thy have limited expert background for co-ordination and evaluation of RD&I activities of the transferred Research Organisations.
- The importance of institutional funding, the share of institutional funding on total public RD&I funding of Research Organisations, varies substantially (from 1.7% to 100% in 2013). Whilst institutional funding creates almost one half of public RD&I funding of the ASCR institutes, in the case of public universities

this share declines to 36%. As for the share of institutional funding on total funding of Research Organisations (including own sources, foreign programmes, etc.), institutional funding of ASCR institutes reached 34%. However, institutional funding of universities amounted to only 10% of total funding in 2013 (the dominant share creates funding of teaching related activities).

- Sources of capital funding for individual types of Research Organisations differ as well. Except own sources or operational programmes, capital funding of public universities can be covered by a specific programme – Programme 133 210 – which is focused on development and reproduction of capital equipment (tangible property) of public universities. Other Research Organisations can for investment activities use only their institutional funding (the Research Organisations can decide how large a part of institutional funding use for capital funding) or own resources.
- The largest share of the institutional funding is used for covering personnel costs of permanent employees and visiting researchers.
- The transition from the research intentions funding model to the current institutional funding scheme has, according to interviewed representatives of Research Organisations, increased the uncertainty of Research Organisations regarding the amount of institutional funding (it essentially limits strategic planning and strategic decision making of Research Organisations), and affect their behaviour as well as the individual behaviour of researchers towards maximisation of RIV points (which are crucial for computation of their institutional funding).

Based upon the SWOT analysis, the following recommendations should be taken into account when developing the new evaluation methodology and funding principles:

1. The amount allocated to providers should be in line with the centrally defined funding principles, common to all providers.
2. Institutional funding should not be provided based on an annual evaluation. The evaluation and the resulting amount of institutional funding should be arranged and provided for a longer period. Similarly, the evaluation methodology and funding principles should not change each year (or every two years) but be fixed for a longer period.
3. The evaluation methodology and funding principles should consider qualitative aspects of performed RD&I activities and take into account the different missions of the Research Organisations. In this sense, a combination of performance-based funding and research contracts could be desirable.

Appendix A - List of recipients in 2014

Recipients of institutional funding provided by Ministry of education, youth and sport

- Akademie múzických umění v Praze
- Akademie výtvarných umění v Praze
- CENIA, česká informační agentura životního prostředí
- Centrum dopravního výzkumu, v. v. i.
- Centrum pro studium vysokého školství, v. v. i.
- CESNET, z. s. p. o.
- Česká geologická služba
- Česká zemědělská univerzita v Praze
- České vysoké učení technické v Praze
- ENKI, o. p. s.
- Janáčkova akademie múzických umění v Brně
- Jihočeská univerzita v Českých Budějovicích
- Masarykova univerzita
- Mendelova univerzita v Brně
- Metropolitní univerzita Praha, o. p. s.
- Ostravská univerzita v Ostravě
- Slezská univerzita v Opavě
- Technická univerzita v Liberci
- Technologické centrum AV ČR, z. s. p. o.
- Univerzita Hradec Králové
- Univerzita Jana Amose Komenského Praha, s. r. o
- Univerzita Jana Evangelisty Purkyně v Ústí n. Labem
- Univerzita Karlova v Praze
- Univerzita Palackého v Olomouci
- Univerzita Pardubice
- Univerzita Tomáše Bati ve Zlíně
- Ústav mezinárodních vztahů, v. v. i.
- Veterinární a farmaceutická univerzita Brno
- Vysoká škola báňská - Technická univerzita Ostrava
- Vysoká škola ekonomická v Praze
- Vysoká škola finanční a správní, o. p. s.
- Vysoká škola chemicko-technologická v Praze
- Vysoká škola technická a ekonomická v Českých Budějovicích
- Vysoká škola umělecko-průmyslová v Praze
- Vysoké učení technické v Brně
- Výzkumný ústav bezpečnosti práce, v.v.i.
- Výzkumný ústav geodetický, topografický a kartografický, v. v. i.
- Výzkumný ústav práce a sociálních věcí, v. v. i.
- Výzkumný ústav Silva Taroucy pro krajinu a okrasné zahradnictví, v. v. i.

- Výzkumný ústav vodohospodářský T. G. Masaryka, v. v. i.
- Západočeská univerzita v Plzni

Recipients of institutional funding provided by Ministry of industry and trade

- Centrum výzkumu Řež s.r.o.
- COMTES FHT a.s.
- Materiálový a metalurgický výzkum s.r.o.
- SVÚM a.s.
- SVÚOM s.r.o.
- Výzkumný a zkušební letecký ústav, a.s.
- Výzkumný ústav stavebních hmot, a.s.
- Výzkumný a zkušební ústav Plzeň s.r.o.
- Výzkumný ústav anorganické chemie, a.s.
- Výzkumný ústav textilních strojů Liberec, a.s.

Recipients of institutional funding provided by Ministry of Culture

- Institut umění - Divadelní ústav
- Národní knihovna České republiky
- Národní muzeum
- Národní galerie v Praze
- Národní technické museum
- Památník národního písemnictví
- Uměleckoprůmyslové museum v Praze
- Moravské zemské muzeum
- Moravská galerie v Brně
- Národní ústav lidové kultury
- Moravská zemská knihovna v Brně
- Slezské zemské muzeum
- Národní památkový ústav

Recipients of institutional funding provided by Ministry of Defence

- CASRI - vědecké a servisní pracoviště tělesné výchovy
- Ústřední vojenská nemocnice Praha
- Univerzita obrany

Recipients of institutional funding provided by Ministry of Interior

- Policejní akademie České republiky v Praze
- Institut pro kriminologii a sociální prevenci
- Státní ústav jaderné, chemické a biologické ochrany, v.v.i.
- Národní archiv
- Státní ústav radiační ochrany, v.v.i.
- Policie ČR Kriminalistický ústav Praha
- Generální ředitelství HZS - Technický ústav požární ochrany

- Generální ředitelství HZS - Institut ochrany obyvatelstva

Recipients of institutional funding provided by Ministry of Agriculture

- Výzkumný ústav lesního hospodářství a myslivosti, v.v.i.
- Výzkumný ústav rostlinné výroby, v.v.i.
- Výzkumný ústav živočišné výroby, v.v.i.
- Výzkumný ústav potravinářský Praha, v.v.i.
- Výzkumný ústav zemědělské techniky, v.v.i.
- Výzkumný ústav meliorací a ochrany půdy, v.v.i.
- Výzkumný ústav veterinárního lékařství, v.v.i.
- Ústav zemědělské ekonomiky a informací
- Chmelařský institut s.r.o.
- Výzkumný a šlechtitelský ústav ovocnářský Holovousy, s.r.o.
- Agrotest fyto, s.r.o.
- Zemědělský výzkum,spol. s r.o.
- Výzkumný ústav mlékárenský s.r.o.
- Agritec Plant Research s.r.o.
- Agrovýzkum Rapotín s.r.o.
- OSEVA vývoj a výzkum s.r.o.
- Výzkumné centrum SELTON, s.r.o.
- Výzkumný ústav bramborářský Havlíčkův Brod, s.r.o.
- Výzkumný ústav pivovarský a sladařský, a.s.
- Národní zemědělské muzeum Praha

Recipients of institutional funding provided by Ministry of Health

- Institut klinické a experimentální medicíny
- Revmatologický ústav
- Ústav hematologie a krevní transfúze
- Psychiatrické centrum Praha
- Endokrinologický ústav
- Nemocnice Na Homolce
- Všeobecná fakultní nemocnice v Praze
- Fakultní nemocnice v Motole
- Fakultní nemocnice u sv.Anny v Brně
- Fakultní nemocnice Hradec Králové
- Masarykův onkologický ústav
- Fakultní nemocnice Plzeň
- Fakultní nemocnice Ostrava
- Fakultní nemocnice Brno
- Státní zdravotní ústav

Recipients of institutional funding provided by Academy of Sciences

- Archeologický ústav AV ČR, Brno, v. v. i.
- Archeologický ústav AV ČR, Praha, v. v. i.
- Astronomický ústav AV ČR, v. v. i.

- Biofyzikální ústav AV ČR, v. v. i.
- Biologické centrum AV ČR, v. v. i.
- Biotechnologický ústav AV ČR, v. v. i.
- Botanický ústav AV ČR, v. v. i.
- Centrum výzkumu globální změny AV ČR, v. v. i.
- Etnologický ústav AV ČR, v. v. i.
- Filosofický ústav AV ČR, v. v. i.
- Fyzikální ústav AV ČR, v. v. i.
- Fyziologický ústav AV ČR, v. v. i.
- Geofyzikální ústav AV ČR, v. v. i.
- Geologický ústav AV ČR, v. v. i.
- Historický ústav AV ČR, v. v. i.
- Knihovna AV ČR, v. v. i.
- Masarykův ústav a Archiv AV ČR, v. v. i.
- Matematický ústav AV ČR, v. v. i.
- Mikrobiologický ústav AV ČR, v. v. i.
- Národohospodářský ústav AV ČR, v. v. i.
- Orientální ústav AV ČR, v. v. i.
- Psychologický ústav AV ČR, v. v. i.
- Slovanský ústav AV ČR, v. v. i.
- Sociologický ústav AV ČR, v. v. i.
- Středisko společných činností AV ČR, v. v. i.
- Ústav analytické chemie AV ČR, v. v. i.
- Ústav anorganické chemie AV ČR, v. v. i.
- Ústav biologie obratlovců AV ČR, v. v. i.
- Ústav chemických procesů AV ČR, v. v. i.
- Ústav dějin umění AV ČR, v. v. i.
- Ústav experimentální botaniky AV ČR, v. v. i.
- Ústav experimentální medicíny AV ČR, v. v. i.
- Ústav fotoniky a elektroniky AV ČR, v. v. i.
- Ústav fyzikální chemie J. Heyrovského AV ČR, v.v.i.
- Ústav fyziky atmosféry AV ČR, v. v. i.
- Ústav fyziky materiálů AV ČR, v. v. i.
- Ústav fyziky plazmatu AV ČR, v. v. i.
- Ústav geoniky AV ČR, v. v. i.
- Ústav informatiky AV ČR, v. v. i.
- Ústav jaderné fyziky AV ČR, v. v. i.
- Ústav makromolekulární chemie AV ČR, v. v. i.
- Ústav molekulární genetiky AV ČR, v. v. i.
- Ústav organické chemie a biochemie AV ČR, v. v. i.
- Ústav pro českou literaturu AV ČR, v. v. i.
- Ústav pro hydrodynamiku AV ČR, v. v. i.
- Ústav pro jazyk český AV ČR, v. v. i.
- Ústav pro soudobé dějiny AV ČR, v. v. i.
- Ústav přístrojové techniky AV ČR, v. v. i.
- Ústav státu a práva AV ČR, v. v. i.

- Ústav struktury a mechaniky hornin AV ČR, v. v. i.
- Ústav teoretické a aplikované mechaniky AV ČR, v. v. i.
- Ústav teorie informace a automatizace AV ČR, v. v. i.
- Ústav termomechaniky AV ČR, v. v. i.
- Ústav živočišné fyziologie a genetiky AV ČR, v. v. i.

Appendix B - List of new recipients (recipients without research intentions)

Research Organisation	Provider
Academy of Arts, Architecture and Design in Prague	Ministry of Education, Youth and Sport
Arts and Theatre Institute	Ministry of Culture
Central Military Hospital Prague	Ministry of Defence
Institute for Research and Preservation of Archeological Monuments of Northwest Bohemia	Region
Jan Amos Komensky University Prague s.r.o.	Ministry of Education, Youth and Sport
Ministry of Education, Youth and Sport	Ministry of Education, Youth and Sport
Museum of Czech Literature	Ministry of Culture
National Archive	Ministry of Interior
OSEVA Development and Research s.r.o.	Ministry of Agriculture
Research Institute of Inorganic Chemistry	Ministry of Industry and Trade
SELTON Research Centre, s.r.o.	Ministry of Agriculture
Silesian Museum	Ministry of Culture
St. Anne's University Hospital Brno	Ministry of Health
University Hospital Olomouc	Ministry of Health
University Hospital Ostrava	Ministry of Health
University Hospital Plzeň	Ministry of Health

Appendix C - National public RD&I funding of supported Research Organisations in 2013 (in million CZK)

Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Agritec Plant Research s.r.o.	0	4 918	8 190	0	0	7 832
Agrotest fyto, s.r.o.	0	10 692	7 952	0	24	1 611
Agrovýzkum Rapotín s.r.o.	0	6 486	4 543	0	0	7 477
Akademie múzických umění v Praze	0	14 170	13 146	4 304	0	0
Akademie výtvarných umění v Praze	0	1 478	6 923	740	0	0
Archeologický ústav AV ČR, Brno, v. v. i.	0	27 068	7 247	0	0	1 263
Archeologický ústav AV ČR, Praha, v. v. i.	0	46 250	22 241	0	0	0
Astronomický ústav AV ČR, v. v. i.	0	72 320	29 014	0	1 712	0
Biofyzikální ústav AV ČR, v. v. i.	55 894	8 866	70 199	0	194	18 869
Biologické centrum AV ČR, v. v. i.	0	152 897	114 495	0	448	27 928
Biotechnologický ústav AV ČR, v. v. i.	19 477	3 709	28 201	0	0	4 648
Botanický ústav AV ČR, v. v. i.	0	82 408	61 557	0	304	17 425
CASRI - vědecké a servisní pracoviště tělesné výchovy	0	2 629	996	0	0	0
Centrum dopravního výzkumu, v. v. i.	0	13 994	61 036	0	277	22 092
Centrum pro studium vysokého školství, v. v. i.	0	2 322	0	0	576	0
Centrum výzkumu globální změny AV ČR, v. v. i.	0	29 336	52 316	0	665	46 198
Centrum výzkumu Řež s.r.o.	0	22 471	107 660	0	5 042	122 344
CESNET, z.s.p.o.	0	10 810	283 802	0	1 869	5 867
COMTES FHT a.s.	0	12 621	22 094	0	490	9 565

Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Česká geologická služba	0	85 087	41 520	0	799	0
Česká zemědělská univerzita v Praze	0	107 998	96 719	38 573	1 377	24 911
České vysoké učení technické v Praze	20 528	582 608	701 289	121 470	29 298	140 328
Endokrinologický ústav	0	4 600	26 144	0	0	0
ENKI, o.p.s.	0	3 035	1 623	0	0	0
Etnologický ústav AV ČR, v. v. i.	0	24 711	2 300	0	0	0
Fakultní nemocnice Brno	0	23 260	39 926	0	54	0
Fakultní nemocnice Hradec Králové	0	29 637	33 466	0	0	3 180
Fakultní nemocnice Olomouc	0	1 670	27 622	0	0	0
Fakultní nemocnice Ostrava	0	16 348	12 452	0	0	0
Fakultní nemocnice Plzeň	0	20 096	10 967	0	0	0
Fakultní nemocnice u sv.Anny v Brně	0	11 000	20 307	0	0	64 155
Fakultní nemocnice v Motole	0	57 324	40 443	0	54	0
Filosofický ústav AV ČR, v. v. i.	0	63 079	19 152	0	0	0
Fyzikální ústav AV ČR, v. v. i.	0	309 745	193 704	0	4 197	464 512
Fyziologický ústav AV ČR, v. v. i.	0	110 630	121 106	0	2 812	9 975
Geofyzikální ústav AV ČR, v. v. i.	0	53 271	21 845	0	0	0
Geologický ústav AV ČR v.v.i.	0	38 727	10 219	0	100	0
Historický ústav AV ČR, v. v. i.	0	41 079	13 840	0	0	0
Chmelařský institut s.r.o.	0	4 495	7 330	0	48	0
Institut klinické a experimentální medicíny	0	67 453	68 307	0	2 765	0
Institut pro kriminologii a sociální prevenci	0	4 563	1 607	0	0	0

Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Institut umění - Divadelní ústav	0	1 364	4 011	0	0	0
Janáčkova akademie múzických umění v Brně	0	4 489	1 421	1 870	0	0
Jihočeská univerzita v Českých Budějovicích	0	179 474	108 271	40 185	699	120 015
Knihovna AV ČR, v. v. i.	0	28 136	4 602	0	0	0
Masarykova univerzita	14 500	542 610	403 532	135 146	7 236	641 886
Masarykův onkologický ústav	0	6 888	25 801	0	30	7 036
Masarykův ústav a Archiv AV ČR, v. v. i.	0	20 769	7 129	0	0	0
Matematický ústav AV ČR, v. v. i.	0	42 382	9 910	0	62	0
Materiálový a metalurgický výzkum s.r.o.	0	5 303	7 456	0	0	2 005
Mendelova univerzita v Brně	0	101 989	66 806	28 790	619	126 331
Mikrobiologický ústav AV ČR, v. v. i.	0	152 666	143 679	0	2 942	41 008
Ministerstvo vnitra	0	14 719	22 415	0	0	0
Moravská galerie v Brně	0	2 918	1 481	0	0	0
Moravská zemská knihovna v Brně	0	2 679	6 663	0	0	0
Moravské zemské muzeum	0	10 319	773	0	0	3 018
Národní archiv	0	5 123	4 728	0	0	0
Národní galerie v Praze	0	1 666	12 082	0	0	0
Národní knihovna České republiky	0	4 063	31 265	0	0	0
Národní muzeum	0	22 819	17 446	0	42	0
Národní památkový ústav	0	15 847	37 458	0	0	0
Národní technické museum	0	1 983	111 420	0	0	0
Národní zemědělské muzeum Praha	0	2 212	3 682	0	0	0
Národohospodářský ústav AV ČR, v. v. i.	0	28 828	21 859	0	0	0

Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Nemocnice Na Homolce	0	4 838	10 813	0	0	0
Orientální ústav AV ČR, v. v. i.	0	13 681	38	0	0	0
OSEVA vývoj a výzkum s.r.o.	0	3 253	4 266	0	0	0
Ostravská univerzita v Ostravě	0	64 414	21 353	18 176	671	42 415
Památník národního písemnictví	0	179	0	0	0	0
Policejní akademie České republiky v Praze	0	4 317	0	0	0	0
Psychiatrické centrum Praha	0	13 191	35 780	0	794	40 192
Psychologický ústav AV ČR, v. v. i.	0	15 492	9 684	0	0	0
Revmatologický ústav	0	11 970	15 369	0	538	0
Slezská univerzita v Opavě	0	35 198	9 416	9 806	0	35 506
Slezské zemské muzeum	0	3 602	3 794	0	0	0
Slovanský ústav AV ČR, v. v. i.	0	12 492	2 840	0	40	0
Sociologický ústav AV ČR, v. v. i.	0	34 098	33 297	0	806	0
Státní ústav jaderné, chemické a biologické ochrany, v.v.i.	0	7 302	31 920	0	697	0
Státní ústav radiační ochrany, v.v.i.	0	7 328	41 882	0	720	0
Státní zdravotní ústav	0	1 515	36 624	0	1 156	0
Středisko společných činností AV ČR, v. v. i.	47 573	34 860	5 000	0	0	8 010
SVÚM a.s.	0	5 154	16 041	0	876	0
ŠKODA VÝZKUM s.r.o.	0	9 588	25 978	0	0	0
Technická univerzita v Liberci	0	70 566	123 591	18 114	853	143 105
Technologické centrum AV ČR, z. s. p. o.	0	4 498	58 913	0	0	0
Uměleckoprůmyslové museum v Praze	0	3 159	2 568	0	0	0

Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Univerzita Hradec Králové	0	28 899	4 453	9 208	0	24 548
Univerzita Jana Amose Komenského Praha, s. r. o	0	658	909	786	0	0
Univerzita Jana Evangelisty Purkyně v Ústí n. Labem	0	38 510	29 544	10 650	218	43 123
Univerzita Karlova v Praze	53 069	1 412 088	1 002 496	309 118	13 350	162 608
Univerzita obrany	0	62 301	18 070	13 171	34	4 025
Univerzita Palackého v Olomouci	2 803	336 890	216 013	87 213	1 507	548 957
Univerzita Pardubice	0	156 589	107 235	31 538	2 141	111 513
Univerzita Tomáše Bati ve Zlíně	0	61 974	30 347	22 386	310	138 095
Ústav analytické chemie AV ČR, v. v. i.	0	33 217	25 043	0	36	4 818
Ústav anorganické chemie AV ČR, v. v. i.	0	37 107	18 928	0	166	0
Ústav biologie obratlovců AV ČR, v. v. i.	0	21 809	26 126	0	0	10 970
Ústav dějin umění AV ČR, v. v. i.	0	25 475	8 598	0	0	0
Ústav experimentální botaniky AV ČR, v. v. i.	0	62 429	76 655	0	184	0
Ústav experimentální medicíny AV ČR, v. v. i.	42 869	8 422	66 967	0	411	7 036
Ústav fotoniky a elektroniky AV ČR, v. v. i.	0	60 385	37 264	0	175	0
Ústav fyzikální chemie J. Heyrovského AV ČR, v.v.i.	0	78 898	92 754	0	2 816	0
Ústav fyziky atmosféry AV ČR, v. v. i.	0	38 176	24 298	0	1 247	0
Ústav fyziky materiálů AV ČR, v. v. i.	0	57 513	32 176	0	26	14 567
Ústav fyziky plazmatu AV ČR, v. v. i.	0	75 611	67 020	0	8 275	1 714
Ústav geoniky AV ČR, v. v. i.	0	41 691	13 230	0	431	4 345
Ústav hematologie a krevní transfúze	0	22 337	35 281	0	0	0
Ústav chemických procesů AV ČR, v. v. i.	0	70 256	56 166	0	3 609	0
Ústav informatiky AV ČR, v. v. i.	0	42 437	24 175	0	97	5 296

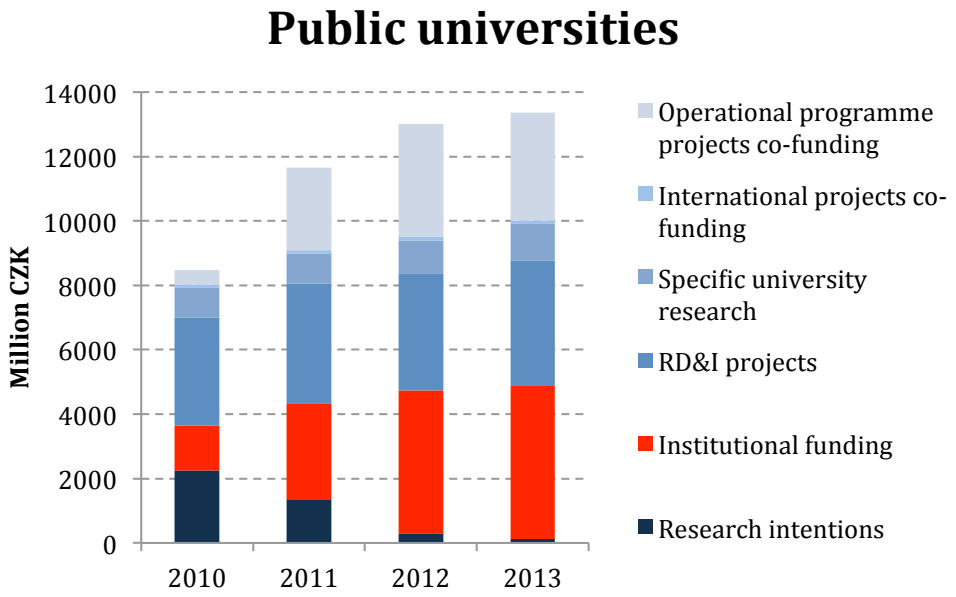
Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Ústav jaderné fyziky AV ČR, v. v. i.	0	102 483	97 102	0	146	3 701
Ústav makromolekulární chemie AV ČR, v. v. i.	0	131 243	85 054	0	2 539	14 425
Ústav mezinárodních vztahů, v. v. i.	0	9 983	4 729	0	0	0
Ústav molekulární genetiky AV ČR, v. v. i.	0	133 787	157 961	0	100	60 723
Ústav organické chemie a biochemie AV ČR, v. v. i.	0	173 338	113 705	0	1 970	0
Ústav pro českou literaturu AV ČR, v. v. i.	0	31 512	11 761	0	0	0
Ústav pro hydrodynamiku AV ČR, v. v. i.	0	25 581	12 171	0	0	0
Ústav pro jazyk český AV ČR, v. v. i.	0	51 019	25 699	0	0	0
Ústav pro soudobé dějiny AV ČR, v. v. i.	0	24 062	10 311	0	0	0
Ústav přístrojové techniky AV ČR, v. v. i.	0	50 190	40 862	0	183	10 326
Ústav státu a práva AV ČR, v. v. i.	0	16 181	2 510	0	0	0
Ústav struktury a mechaniky hornin AV ČR, v. v. i.	0	48 938	23 285	0	70	0
Ústav teoretické a aplikované mechaniky AV ČR, v. v. i.	0	30 163	36 099	0	0	6 317
Ústav teorie informace a automatizace AV ČR, v. v. i.	0	63 721	52 057	0	2 202	0
Ústav termomechaniky AV ČR, v. v. i.	0	81 542	37 847	0	95	0
Ústav zemědělské ekonomiky a informací	0	7 867	2 111	0	0	0
Ústav živočišné fyziologie a genetiky AV ČR, v. v. i.	0	43 988	34 689	0	313	13 491
Ústřední vojenská nemocnice Praha	0	4 508	31 916	0	0	0
Veterinární a farmaceutická univerzita Brno	0	51 820	17 736	12 351	0	50 368
Všeobecná fakultní nemocnice v Praze	0	93 768	85 229	0	0	0
VÚTS, a.s.	0	17 838	109 000	0	0	0
Vysoká škola báňská - Technická univerzita Ostrava	3 303	143 888	139 004	50 297	1 613	302 655

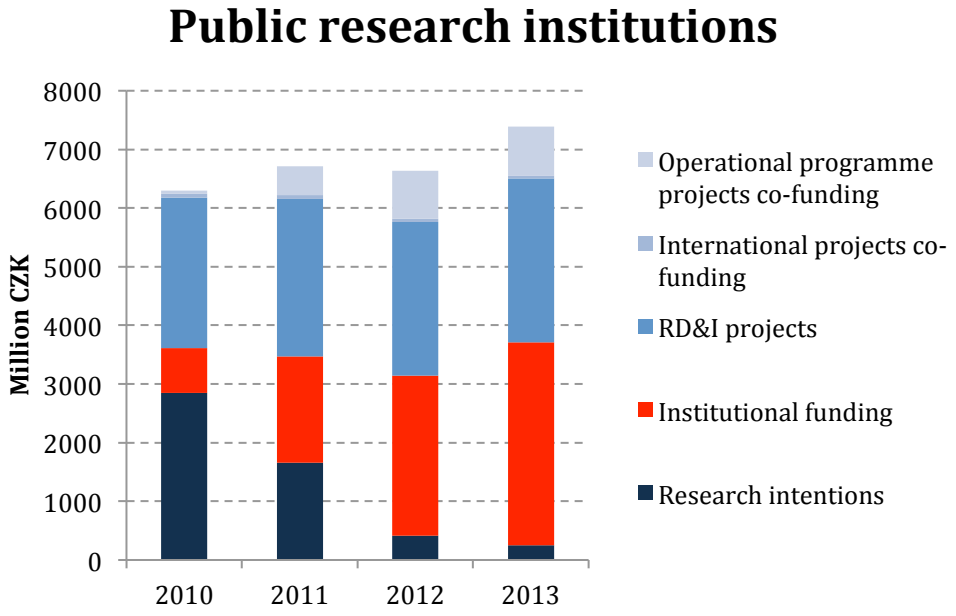
Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Vysoká škola ekonomická v Praze	6 074	66 102	31 717	21 601	1 636	6 109
Vysoká škola chemicko-technologická v Praze	5 219	218 844	209 821	44 315	5 649	42 138
Vysoká škola umělecko-průmyslová v Praze	0	3 043	5 174	1 003	0	0
Vysoké učení technické v Brně	9 225	371 175	377 179	88 932	20 597	378 514
Výzkumné centrum SELTON, s.r.o.	0	2 467	1 467	0	0	0
Výzkumný a šlechtitelský ústav ovocnářský Holovousy, s.r.o.	0	9 371	9 895	0	0	24 744
Výzkumný a zkušební letecký ústav, a.s.	0	41 825	94 564	0	13 084	0
Výzkumný ústav anorganické chemie, a.s.	0	9 322	36 816	0	0	14 083
Výzkumný ústav bezpečnosti práce, v.v.i.	0	3 842	2 187	0	0	0
Výzkumný ústav bramborářský Havlíčkův Brod, s.r.o.	0	6 575	8 172	0	0	153
Výzkumný ústav geodetický, topografický a kartografický, v. v. i.	0	19 256	14 503	0	0	2 521
Výzkumný ústav lesního hospodářství a myslivosti, v.v.i.	6 630	11 631	22 059	0	0	185
Výzkumný ústav meliorací a ochrany půdy, v.v.i.	7 021	8 671	20 863	0	146	0
Výzkumný ústav mlékárenský s.r.o.	0	5 863	19 905	0	0	0
Výzkumný ústav pivovarský a sladařský, a.s.	0	5 530	5 328	0	0	352
Výzkumný ústav potravinářský Praha, v.v.i.	3 608	12 091	13 188	0	87	0
Výzkumný ústav práce a sociálních věcí, v. v. i.	0	11 235	7 686	0	0	0
Výzkumný ústav rostlinné výroby, v.v.i.	25 722	63 111	69 838	0	767	177
Výzkumný ústav Silva Taroucy pro krajinu a okrasné zahradnictví, v. v. i.	0	42 480	33 089	0	0	1 786
Výzkumný ústav stavebních hmot, a.s.	0	22 255	10 588	0	0	0
Výzkumný ústav veterinárního lékařství, v.v.i.	18 857	46 561	48 321	0	90	15 697
Výzkumný ústav vodohospodářský T. G. Masaryka, v. v. i.	0	18 000	61 651	0	46	0
Výzkumný ústav zemědělské techniky, v.v.i.	3 978	16 806	14 883	0	0	0

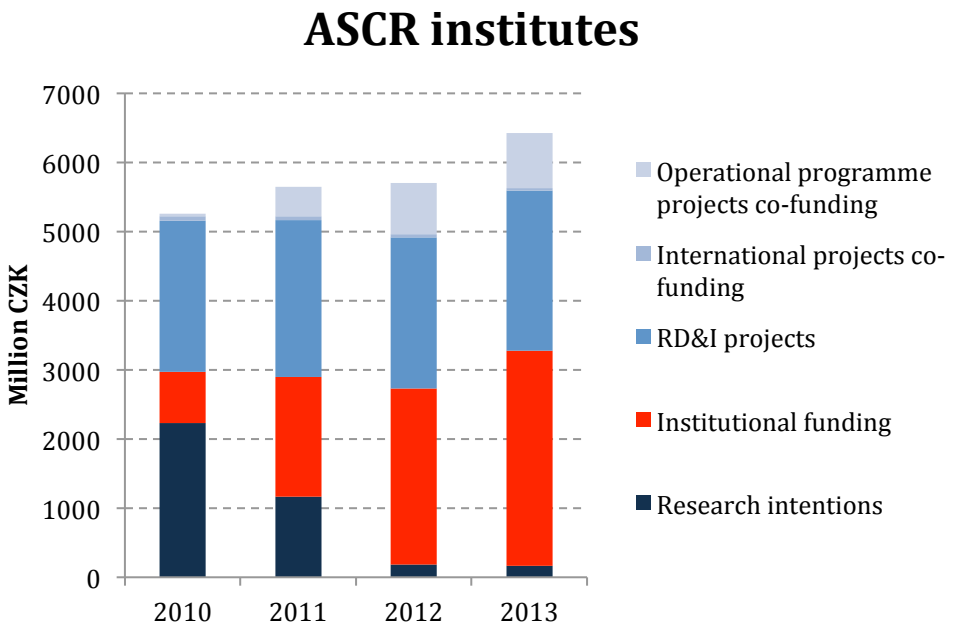
Full name	RD&I funding from the State Budget					
	Research intentions	Institutional funding based on RIV points	Competitive funding (RD&I projects)	Specific university research	International projects co-funding	Operational programme projects co-funding
Výzkumný ústav živočišné výroby, v.v.i.	24 565	49 398	23 019	0	764	0
Západočeská univerzita v Plzni	0	171 734	167 497	41 971	1 462	271 143
Zemědělský výzkum,spol. s r.o.	0	5 910	8 743	0	80	9 005

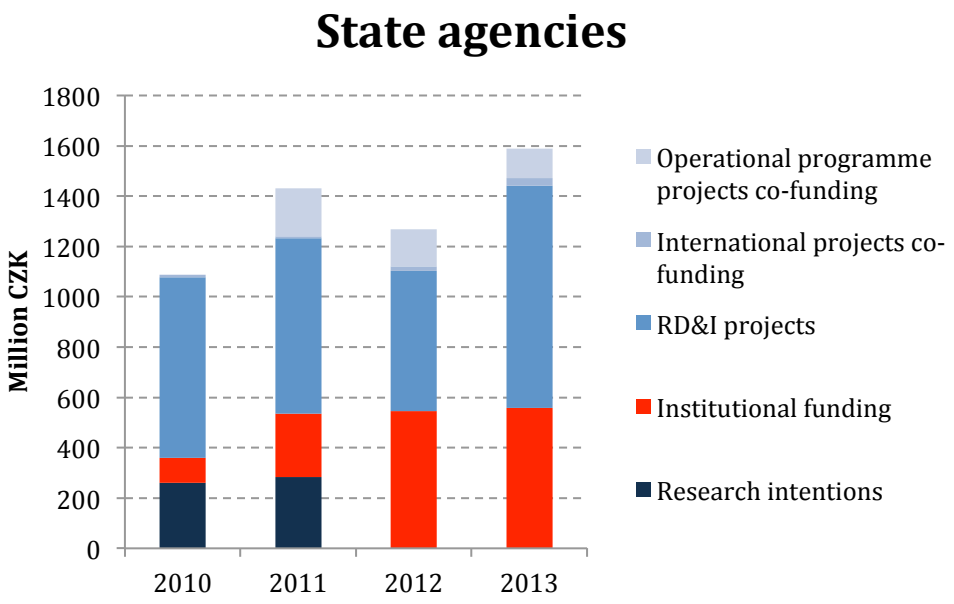
Source: RD&I Information System

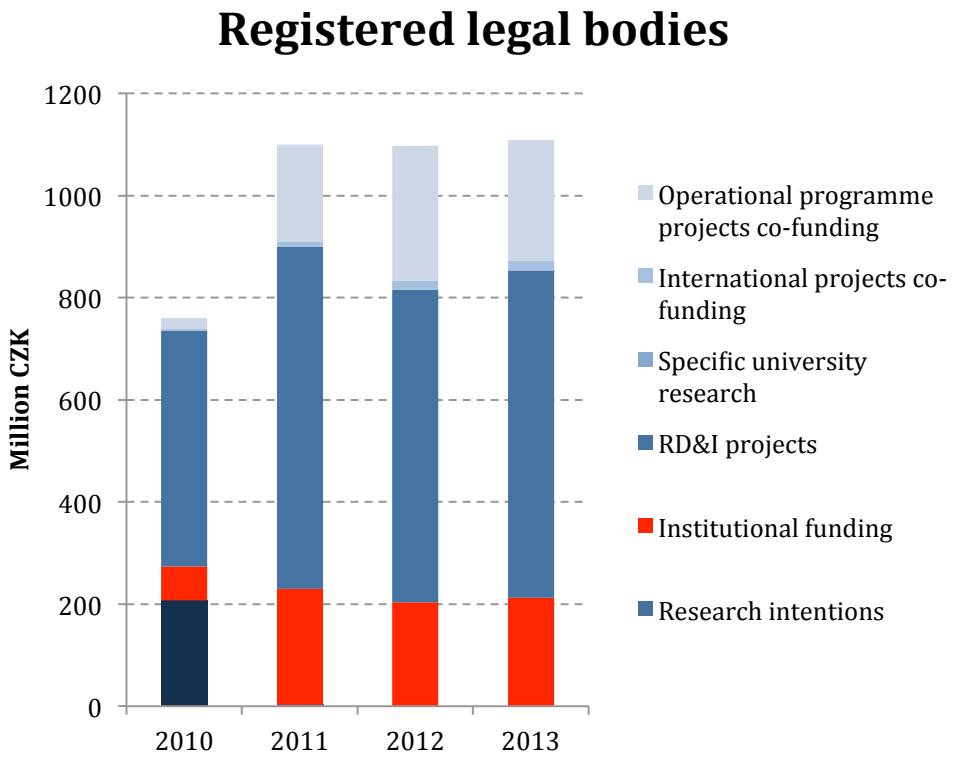
Appendix D - Development of public RD&I funding structures according to the legal types of Research Organisations (source: RD&I Information System)

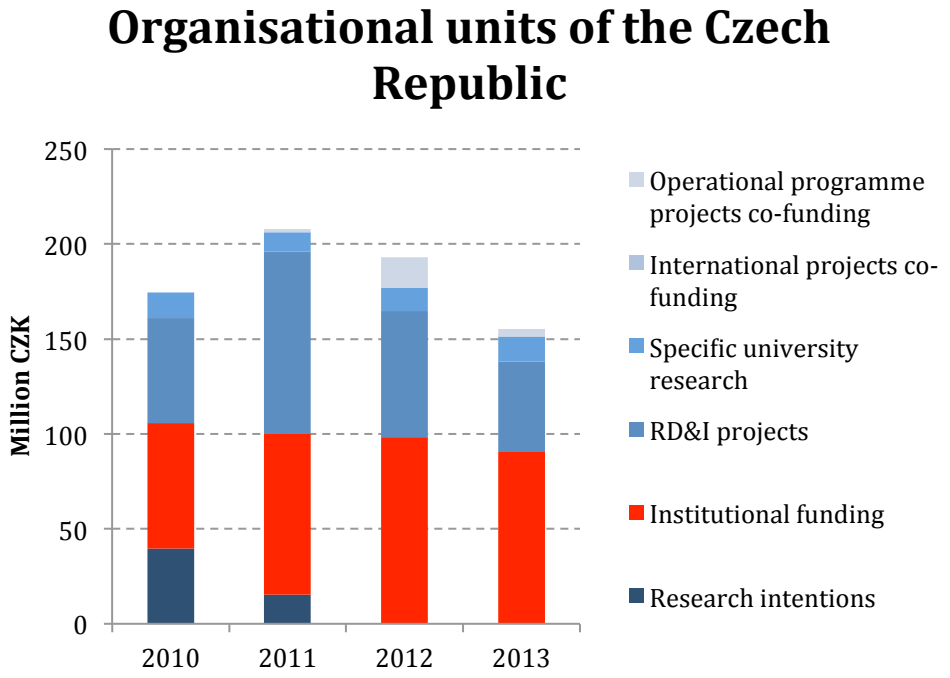


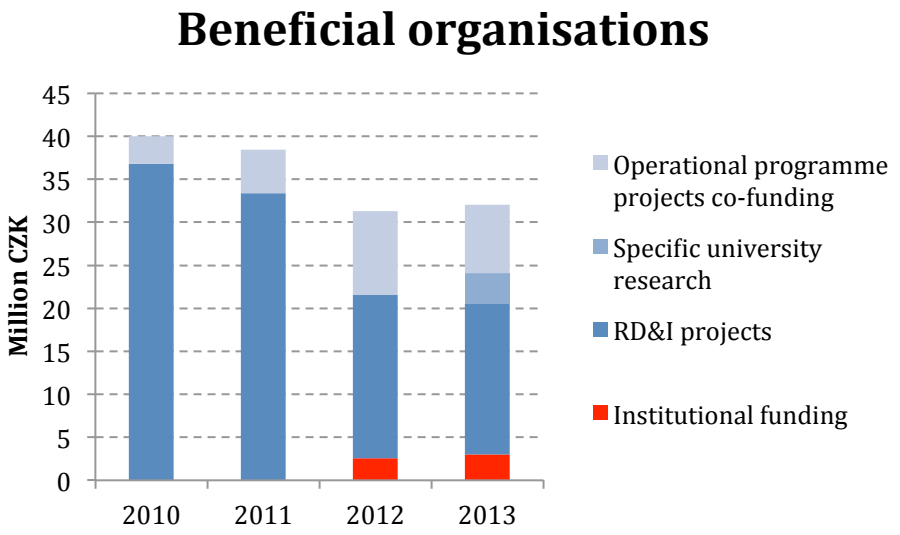



ASCR institutes
Million CZK
7000
6000
5000
4000
3000
2000
1000
0
2010
2011
2012
2013
Operational programme projects co-funding
International projects co-funding
RD&I projects
Institutional funding
Research intentions


State agencies
Million CZK
1800
1600
1400
1200
1000
800
600
400
200
0
2010
2011
2012
2013
Operational programme projects co-funding
International projects co-funding
RD&I projects
Institutional funding
Research intentions


Registered legal bodies
Million CZK
1200
1000
800
600
400
200
0
2010
2011
2012
2013
Operational programme projects co-funding
International projects co-funding
Specific university research
RD&I projects
Institutional funding
Research intentions


Organisational units of the Czech Republic
Million CZK
250
200
150
100
50
0
2010
2011
2012
2013
Operational programme projects co-funding
International projects co-funding
Specific university research
RD&I projects
Institutional funding
Research intentions


Beneficial organisations
Million CZK
45
40
35
30
25
20
15
10
5
0
2010
2011
2012
2013
Operational programme projects co-funding
Specific university research
RD&I projects
Institutional funding

Professional associations, non-profit organisations
Million CZK
450
400
350
300
250
200
150
100
50
0
2010
2011
2012
2013
Operational programme projects co-funding
International projects co-funding
RD&I projects
Institutional funding
Research intentions

Appendix E - Interviewed stakeholders

Co-ordination

- Jan Marek, Office of the Government

Providers

- Jana Říhová, Ministry of Education, Youth and Sport
- Martin Štícha, Ministry of Industry and Trade
- Aleš Kapucián, Ministry of Health
- Olga Chmelíková, Ministry of Agriculture
- Bohuslav Dolejší, Ministry of Defence
- Jan Vykoukal, Ministry of Interior
- Martina Dvořáková, Ministry of Culture
- Karel Aim, Academy of Sciences

Recipients

- Tomáš Kostelecký, Institute of Sociology ASCR
- Jiří Chýla, Institute of Physics ASCR
- Milan Drahoňovský, Institute of Organic Chemistry and Biochemistry ASCR
- Petr Dvořák, Masaryk University
- Vojtěch Petráček, Czech Technical University
- Pavel Čermák, Crop Research Institute
- Josef Kašpar, Aerospace Research and Test Establishment

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