



EUROPEAN UNION
European Structural and Investment Funds
Operational Programme Research,
Development and Education


MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Czech Science Foundation (GACR)

Institute of Mathematics of the
Czech Academy of Sciences

29 June 2020

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 GAČR
GRANTOVÁ AGENTURA ČESKÉ REPUBLIKY



Content

- Research funding in the Czech Republic, advantages and disadvantages of earmarked funding
- Classes of projects supported by GACR
- Project evaluation process
- How GACR fulfils its role as a provider of targeted support



Research funding in the Czech Republic

In principle two schemes:

- Institutional support
- Targeted support

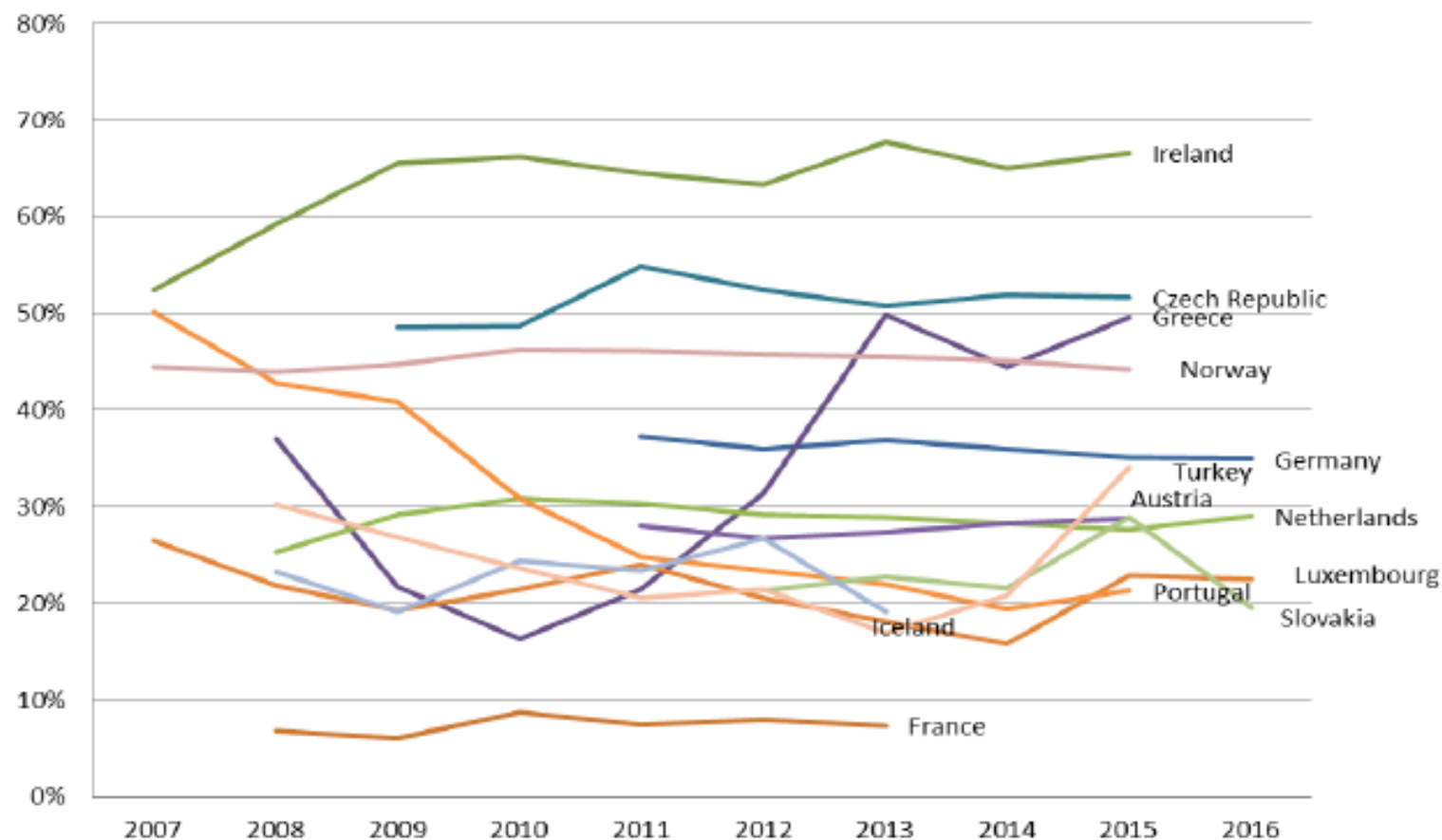
The Czech Science Foundation (GACR) is an important provider of targeted support for basic research in the Czech Republic



Share of targeted support to R&D in selected European countries

Share of targeted funds is ~ 50%

These data show that targeted support plays a major role in the Czech Republic



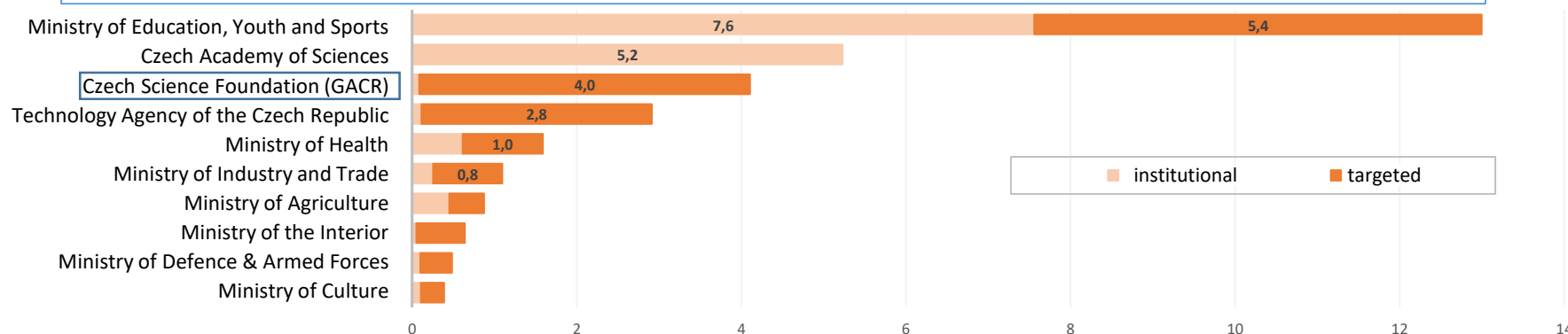
Source: EUROSTAT



Research funding in the Czech Republic

	2013	2014	2015	2016	2017
Ministry of Education, Youth and Sports	38,9%	41,7%	43,1%	45,3%	42,5%
Czech Academy of Sciences	16,7%	16,3%	16,9%	17,1%	17,1%
Czech Science Foundation (GACR)	12,1%	12,6%	13,1%	14,0%	13,4%
Technology Agency of the Czech Republic	9,7%	10,7%	11,3%	10,1%	9,5%
Ministry of Health	4,6%	4,5%	4,8%	4,3%	5,2%
Ministry of Industry and Trade	9,5%	5,9%	3,0%	1,9%	3,6%
Ministry of Agriculture	2,9%	2,8%	2,9%	3,1%	2,9%
Ministry of the Interior	2,2%	2,1%	1,5%	1,3%	2,1%
Ministry of Defence & Armed Forces	1,5%	1,5%	1,6%	1,4%	1,6%
Ministry of Culture	1,8%	1,8%	1,7%	1,3%	1,3%
Other	0,2%	0,2%	0,1%	0,3%	0,9%

Actual state budget expenditures on research, development and innovation in the Czech Republic by main providers in 2017 (in billions of CZK)



OSTAT



Advantages of targeted funding

- Heading towards to an increase in the quality and relevance of funded research topics
- The way to ensure at least a minimum standard of quality
- Providing feedback to researchers, i.e. testing their ideas by knowledgeable (mostly foreign) opponents
- Strengthening public confidence that research is of good quality and meaningful
- Finances go immediately to the investigators, no "losses" on the way to them

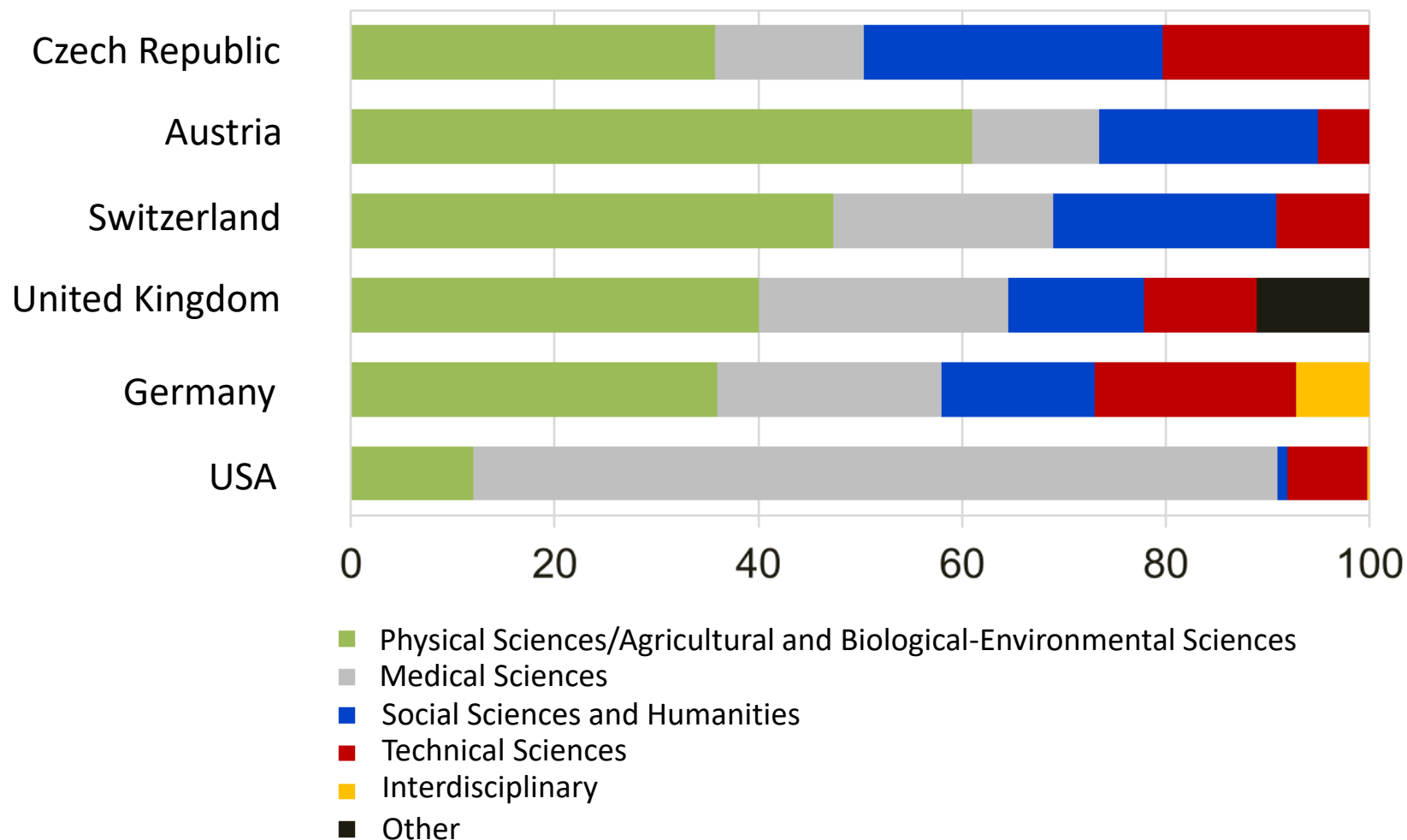


Disadvantages of targeted funding

- Relying on targeted funding can lead to the support of short-term projects with low risk instead of the promotion of longer-term visions with significant risk but excellent results
- Evaluators may tend to support mainstream
- The writing of projects can be time-consuming and the agenda of the evaluation and selection of projects burdens financially the state budget
- Researchers and institutions have difficulty planning their research because their longer-term future is uncertain



Share of disciplines in single project funding, in %, 2017



J. Janger et al., 2019 + GACR



Project proposals

- Project proposals are invited in **all disciplines of basic research**
- Calls are open to **all research funding organizations** (no restrictions) that meet criteria set out in tender documentation
- GACR follows a **bottom-up principle** – topics of projects are decided by applicants themselves
- Only **one call** for proposals per year
- Since 2009 must be projects proposals submitted in English
- On-line submission and evaluation system



GACR – types of projects (2020)

Standard projects

- aimed at advanced researchers and research teams
- these represent the majority of projects supported by GACR (~2000 applications/year)

Projects of excellence EXPRO

- aimed at excellent researchers (~100–200 applications/ year)
- **evaluation only by international panels**

JUNIOR STAR projects

- aimed at excellent young researchers with the view of building their research teams
- **evaluation only by international panels** (~ 350 applications/year)

International projects

- (~200 applications/year)
- bilateral projects and Lead agency projects



International projects

Bilateral projects

- **Germany:** Deutsche Forschungsgemeinschaft (DFG)
 - **Taiwan:** Ministry of Science and Technology Taiwan (MOST)
 - **Korea:** National Research Foundation of Korea (NRF)
 - **Russia:** Russian Foundation for Basic Research (RFBR) (2019)
 - **Brazil:** São Paulo Research Foundation (FAPESP) (2019)
-
- Evaluation is provided in BOTH agencies
-



What is Science Europe?



- **Science Europe** is the European association representing the interests of major public research performing and research funding organisations.
- SE was founded in 2011 and is based in Brussels.
- Science Europe's 37 member organisations from 28 European countries are among the most important public research organisations funding and performing scientific research in Europe today.
 - Cooperation of funding organisations will start in 2021 and will be based on the Lead agency principle of evaluation of projects
- **As a pilot project:**
 - Multilateral collaboration of grant agencies in the region of Central Europe (CEUS) – **Austria, Poland, Slovenia, the Czech Republic**



International projects

Joint projects based on **Lead Agency** principle

- **Austria:** Fonds zur Förderung der wissenschaftlichen Forschung (FWF)
 - **Switzerland:** Swiss National Science Foundation (SNSF) (2020)
 - **Poland:** National Science Centre (NCN) (2020)
 - **Slovenia:** Slovenian Research Agency (ARRS) (2020)
-
- Evaluation is provided only in one –Lead Agency (and accepted by another one)
-



GACR President's Award

The GACR President's Award is awarded as an appreciation of outstanding results focused on basic research achieved within projects funded by GACR and concluded last year.

It has been awarded since 2003

In total **74 awards**

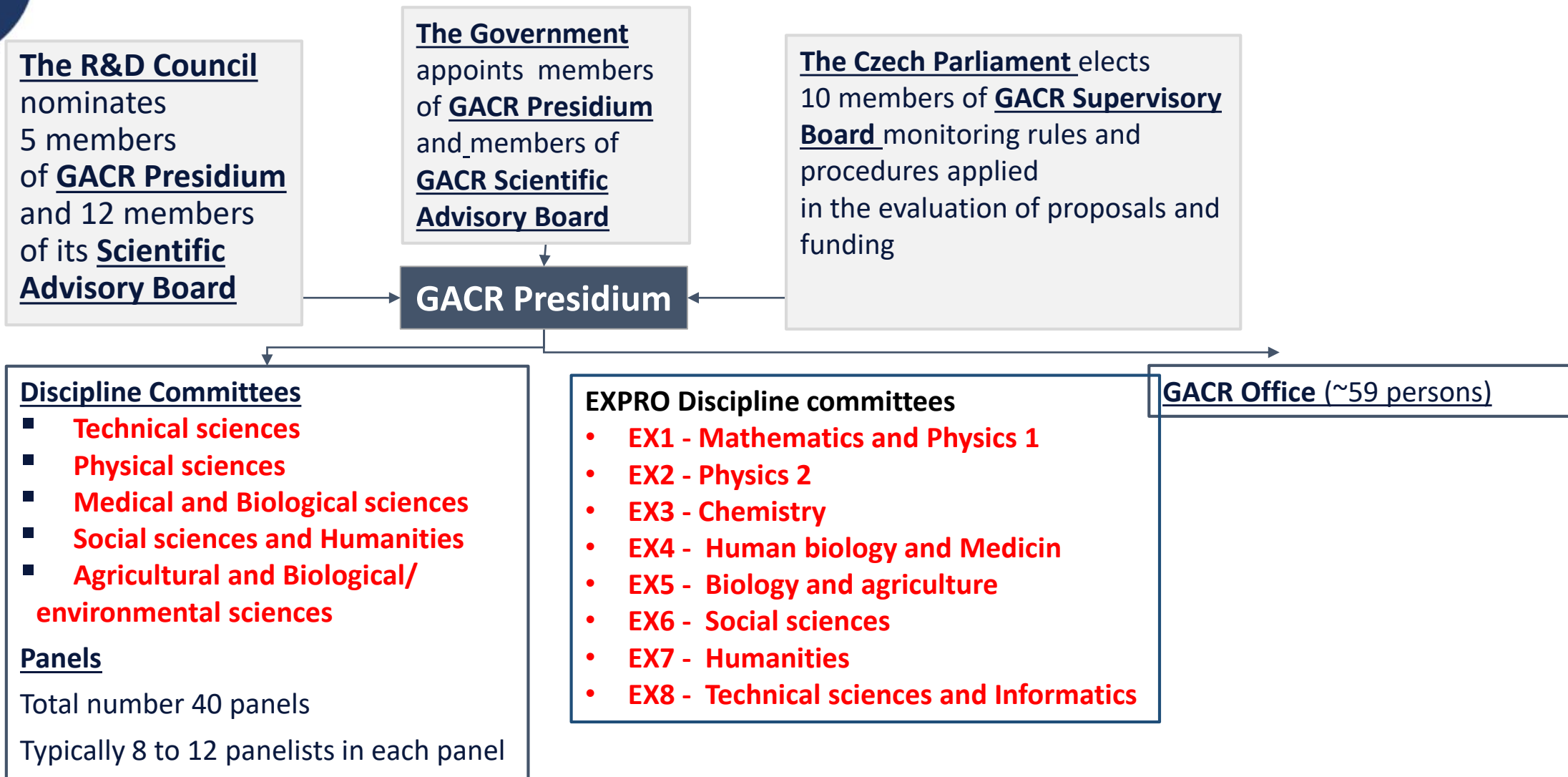
- Technical Sciences 17
- Physical Sciences 15
- Medical and Biological Sciences 13
- Social Sciences and Humanities 13
- Agricultural and Environmental Sciences 16

Only 2 mathematicians – prof. Fabián, Dr. Barto

The award represents the support of 100 000 CZK

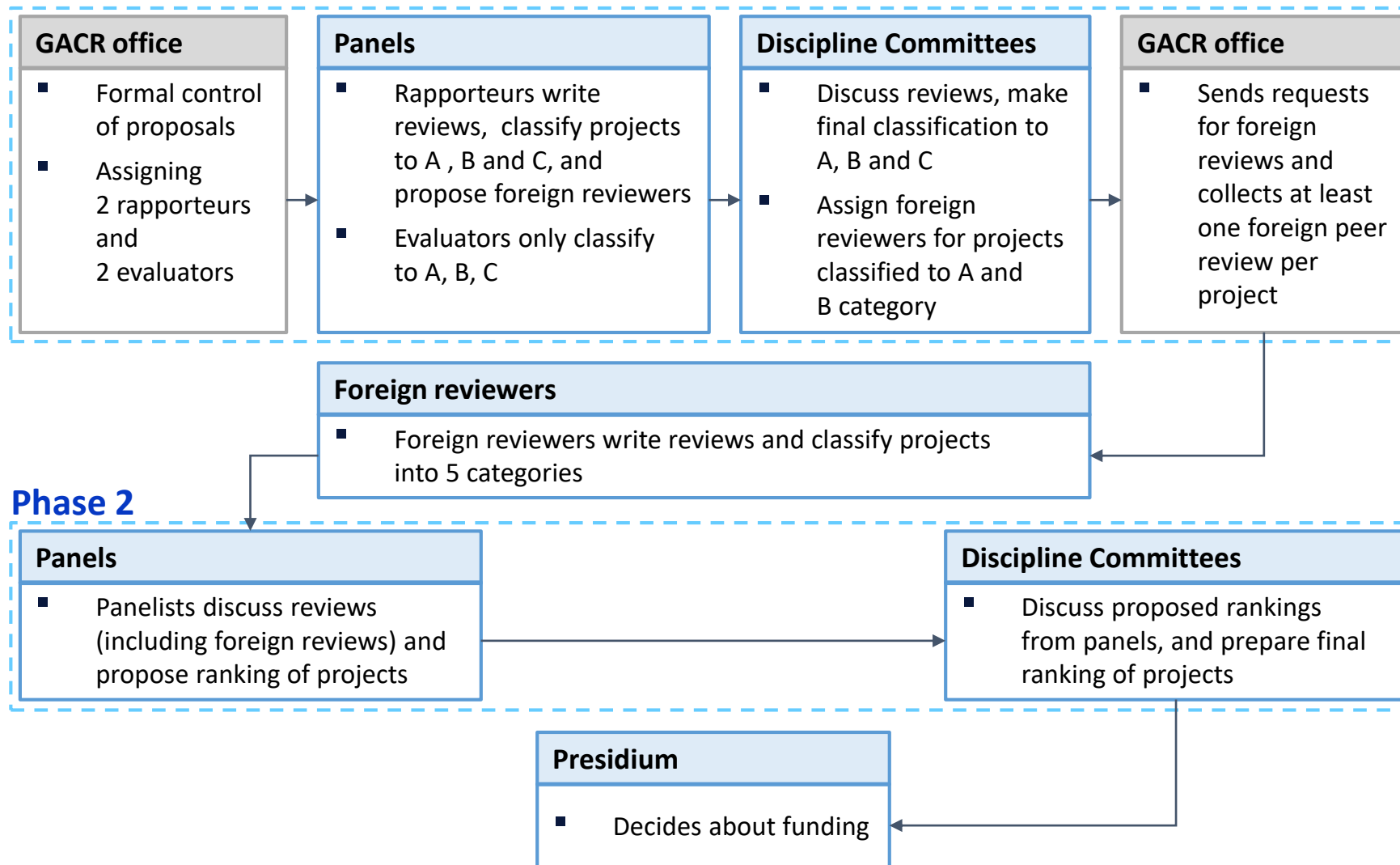


Governance and structure





Evaluation process



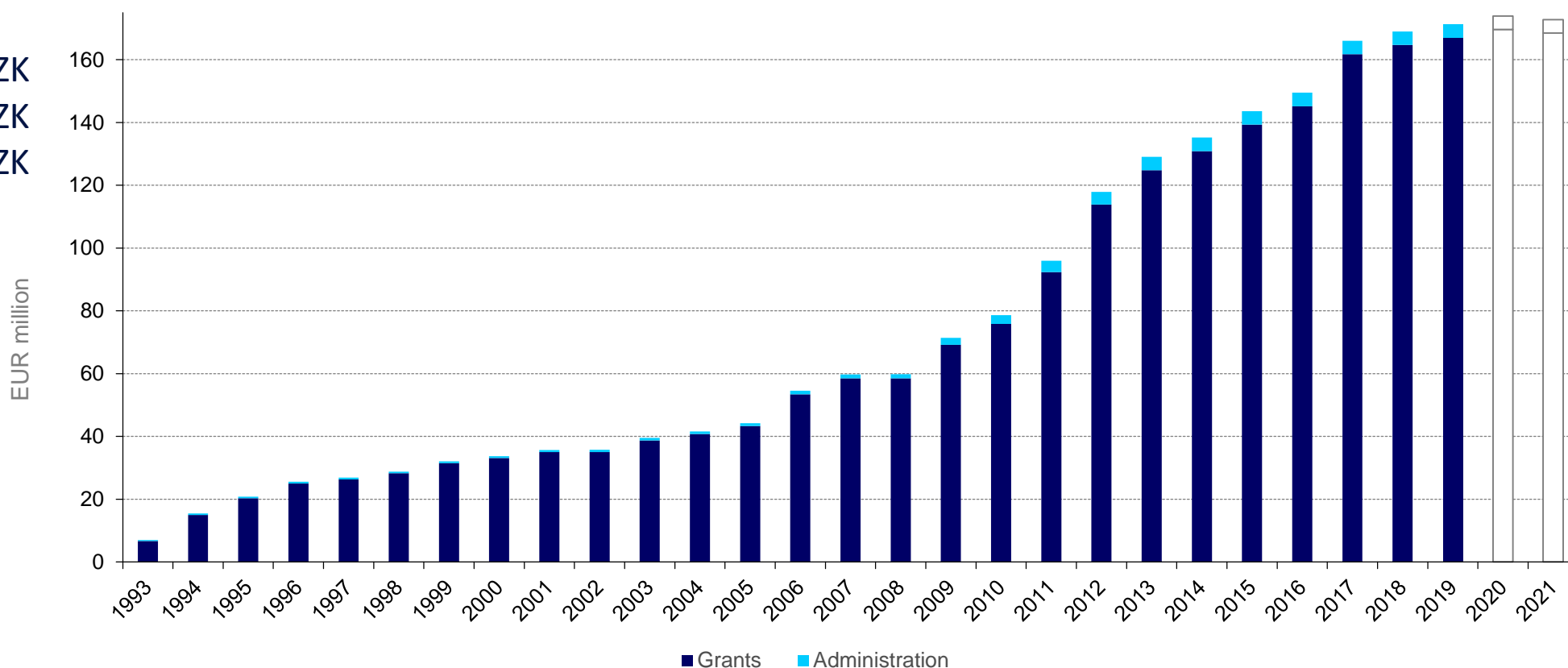


Total budget 1993–2021

Budget for 2020 – approx. 4.2 bil. CZK

- Institutional budget/budget for projects ~ **2.5%**

1993: 0.2 bn. CZK
2008: 1.5 bn. CZK
2019: 4.2 bn. CZK

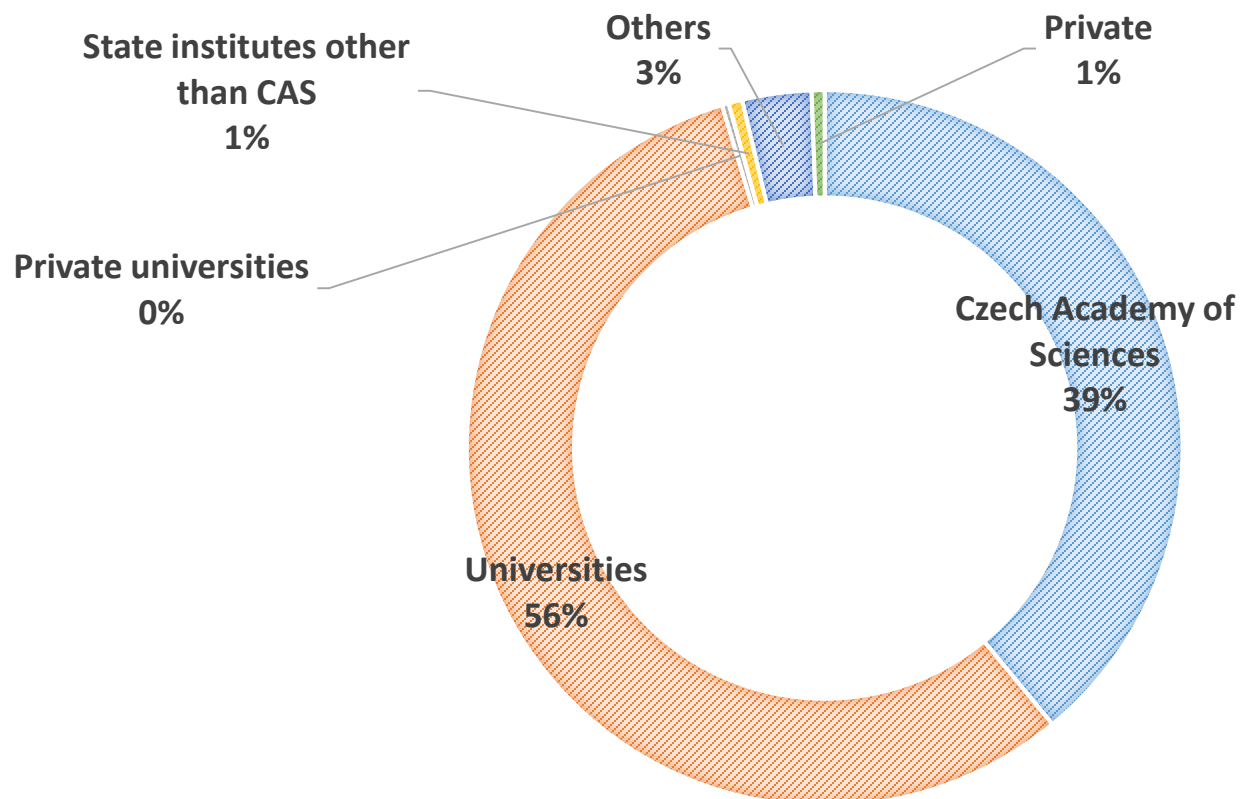




Supported projects & institutions

Others: hospitals, libraries, museums, subsidised organisations, associations, galleries, foundations, organizational units of the state

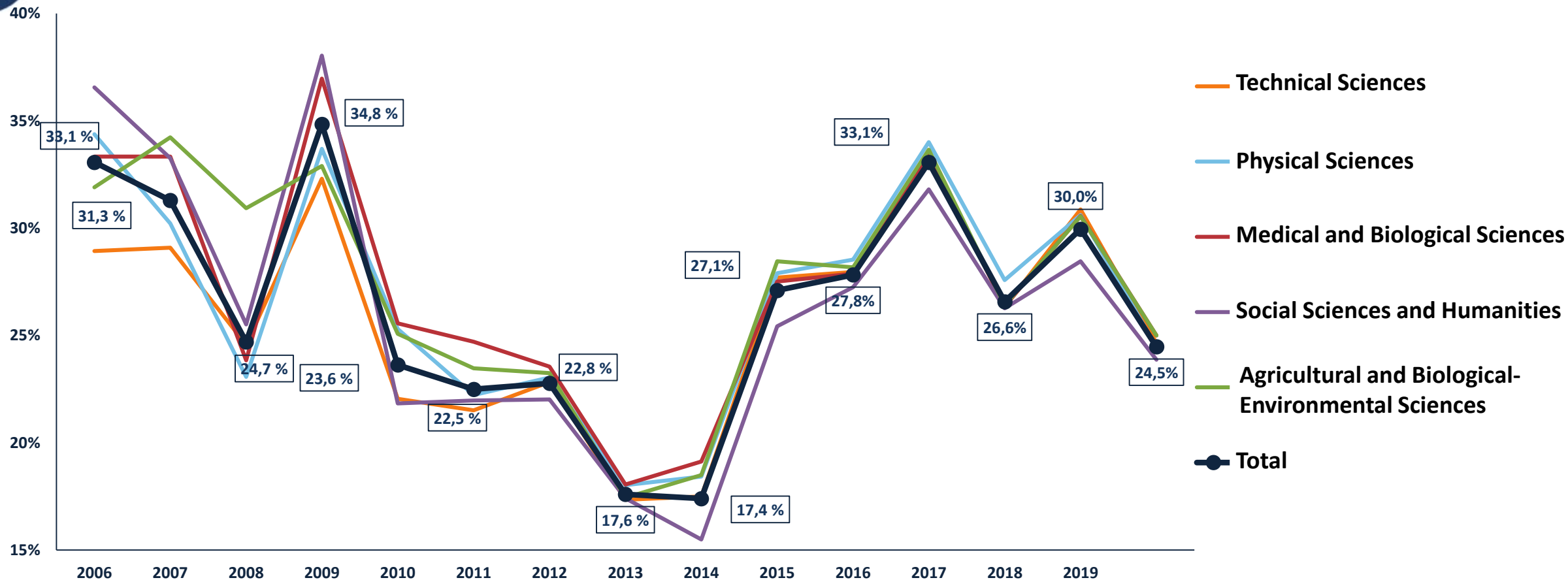
Private: individuals, limited liability companies, joint stock companies, communities interest society, registered institutes





Standard projects

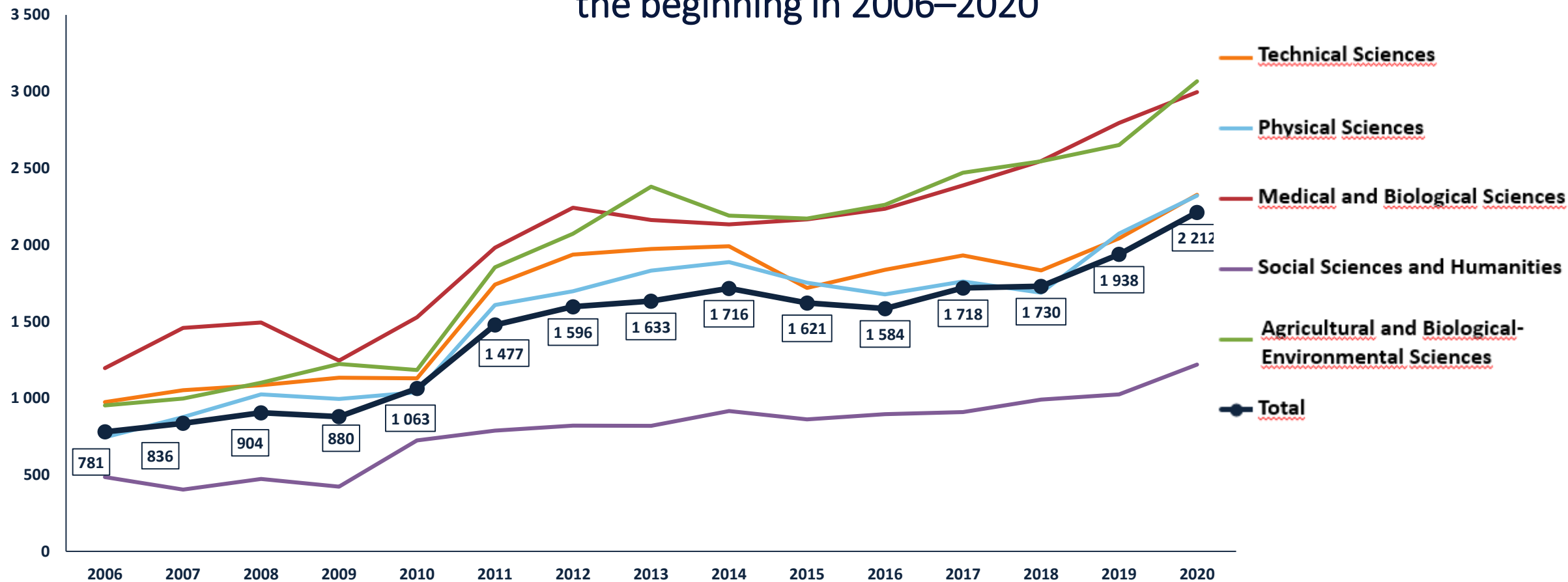
Success rate, 2006–2020





Standard projects

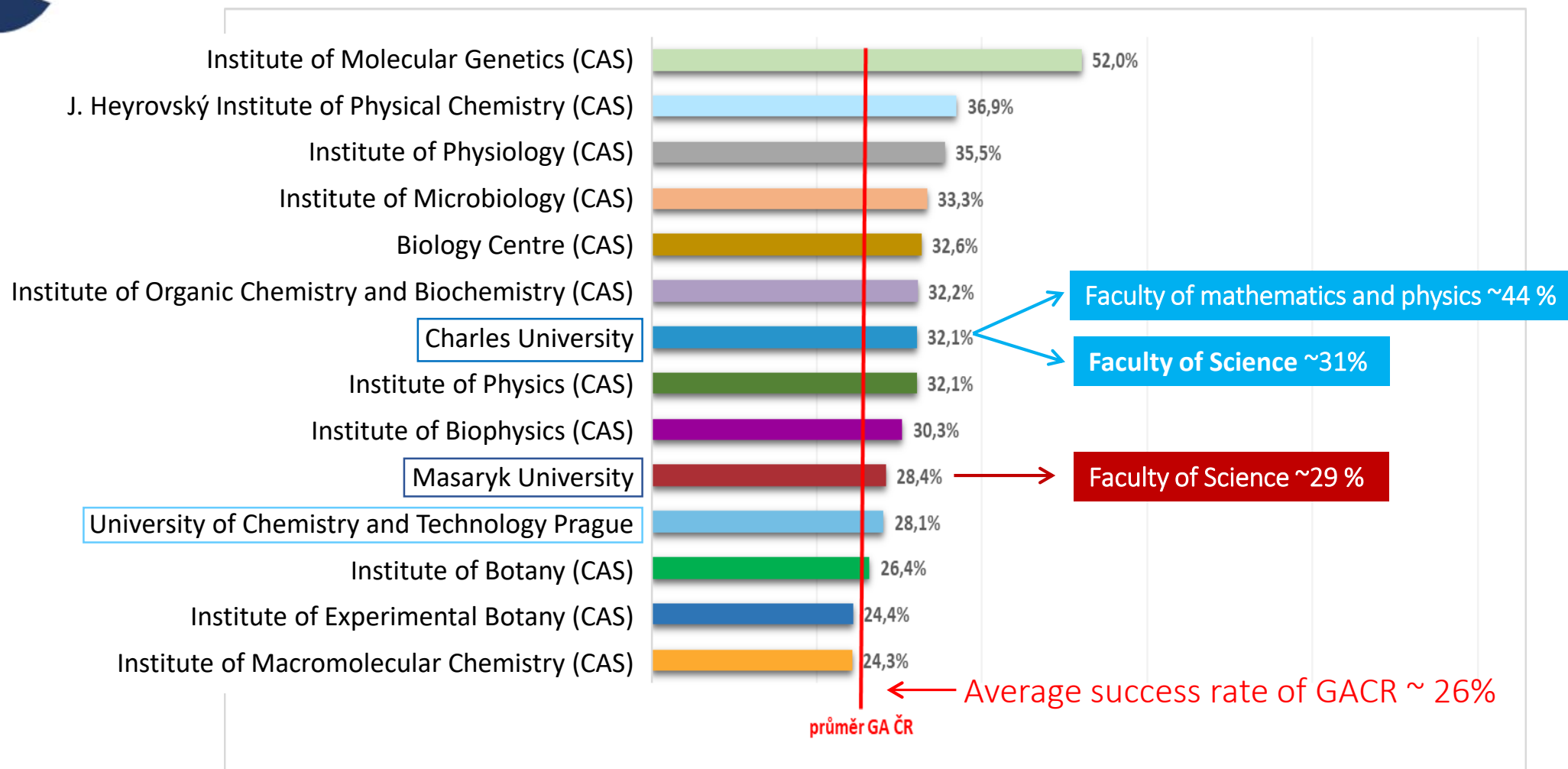
Development of average costs for the first year of the funded standard projects with the beginning in 2006–2020





Success rate of institutions

Success of institutions with more than 100 evaluated project proposals from all public tenders with the beginning in 2014–2018





Numbers of evaluated projects – Mathematics

Standard		Junior		International		JUNIOR STAR		EXPRO EX1		LA
2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2021
27	26	12	0	6	4	0	31	12	14	6

Maximal values in panels are in Technical Sciences (149), Medical Sciences (102) and Social Sciences and Humanities (95)

Minimal numbers has Computer Science panel P202 – (23) and Mathematics panel P201 (36)

EXPRO – this year – 123 applications,

JUNIOR STAR – this year – 355 applications (expected success rate will be approx. 7%!!!)



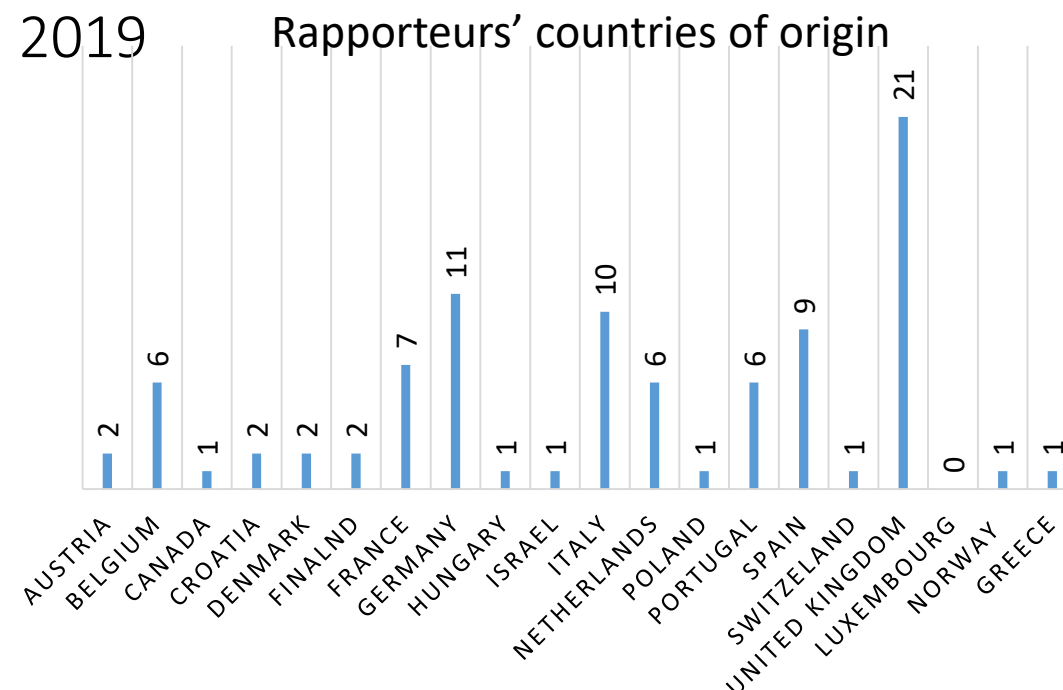
Three years of EXPRO projects

- **EXPRO – aim on excellence in international comparison**, obligation to submit an ERC project within 6 years from the beginning
- International panels established in 2018 – panelists selected by a foreign agency → Science Connect (former ESF), Strasbourg
- 91 panelists evaluated the projects in 2019



	PROPOSALS	FUNDED	SUCCESS RATE
2018	184	36	19.5%
2019	133	22	16,5%
2020	123		

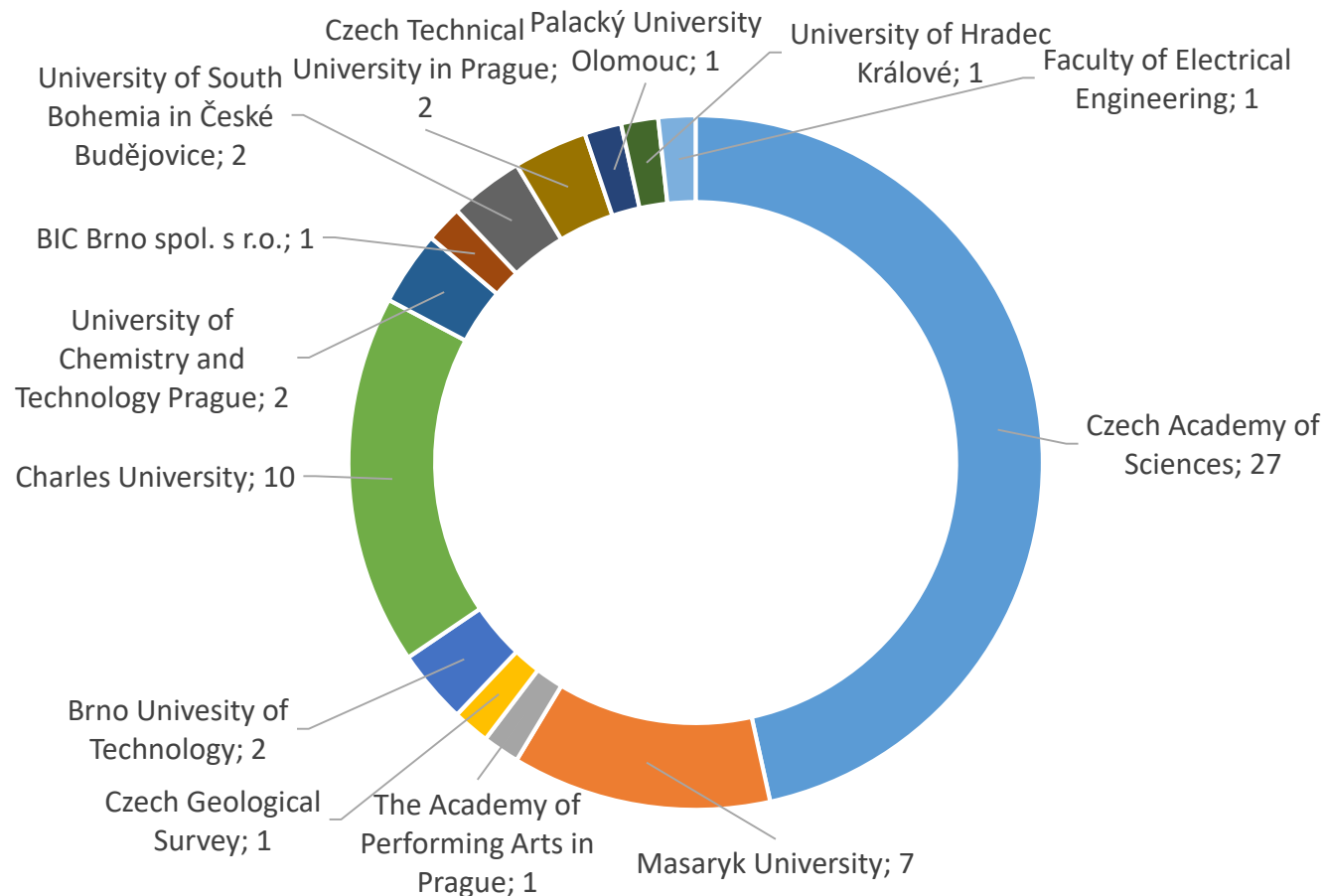
- After 2020 calls will be launched only in even years





EXPRO: 2019–2020 – 58 projects in total

Funded EXPRO projects – institutions



CAS: 27
Charles University: 10
Masaryk University Brno: 7

In 2019 21 projects in EX1
8 mathematics – 1 obtained
In 2020 12 projects in EX1
4 mathematics – 2 obtained

Average costs for standard project ~ 2.1 mil. CZK/year

Average costs for EXPRO ~ 8.5–10 mil. CZK/year



Finances for EXPRO:

- 2019 ~ 545 mil.CZK
- 2020 ~ 238 mil. CZK
- 2021 ~ 66 mil.CZK -> 8 projects????

„Of course, the situation has dramatically changed after he received EXPRO!”



We are preparing...

POSTDOC Individual Fellowship

The aim is to support mobility and gain of international experience

- Three-year projects for individual applicants up to 4 years after doctoral graduation, emphasis on excellence
- The obligation to spend 2 years during the project implementation in a selected foreign institution – paid by GACR
- For applicants who have completed their studies abroad, a three-year stay at a Czech institution – paid by the GACR
- ~ 40 projects

Approved by the government in December 2019, but in the medium-term outlook of the budget for 2021 the financing of these projects was not expected, the call will be announced next year



Extraordinary measures operations of GACR related to COVID-19



New evaluation process schedule

- Deadline for proposals moved from 7 April to 4 May
- Tender is closed on the original term (1 November for EXPRO and JUNIOR STAR projects and 1 December for standard and bilateral projects)
 - ○ Evaluation process is shorter by the month
 - Less time to acquire external evaluators



On-line meetings possibility

- New equipment in GACR for video-conferences
- Flexible choice between in-person and on-line meetings



Lead Agency principle calls related to COVID-19



Der Wissenschaftsfonds.

CALL URGENT FUNDING SARS-COV-2

- Proposals until 30 September 2020
- Expected project start in autumn
- Projects in cooperation with the Austrian scientific team

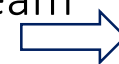
-
- Topics related to COVID-19
 - All fields of basic research
 - Proposals evaluated continuously



FONDO NAZIONALE SVIZZERO
PER LA RICERCA SCIENTIFICA

CALL NRP 78 „COVID-19“

- Proposals until 25 May 2020
- Expected project start between August and October
- Projects in cooperation with the Swiss scientific team



0 proposals from CZ



Extraordinary measures for beneficiaries & proponents related to COVID-19



BUDGET

- The possibility of using unused funds in the next years
- Transfers between basic structure items up to 100,000 CZK without a request



ELIGIBLE COSTS

- Mandatory tests for COVID-19 when traveling abroad
- Expenses for postponed or cancelled events & research stays/business trips
- Telecommunication services
- Necessary investments



WORK CAPACITY

- Increasing the limit for changing the total work capacity of a team up to 35 % without a request
- Reducing the limit of minimum workload on a request – EXPRO



DATES

- Certificate of completion of doctoral studies (until 15 December) – JUNIOR STAR



How GACR fulfils its role as a provider of targeted support?



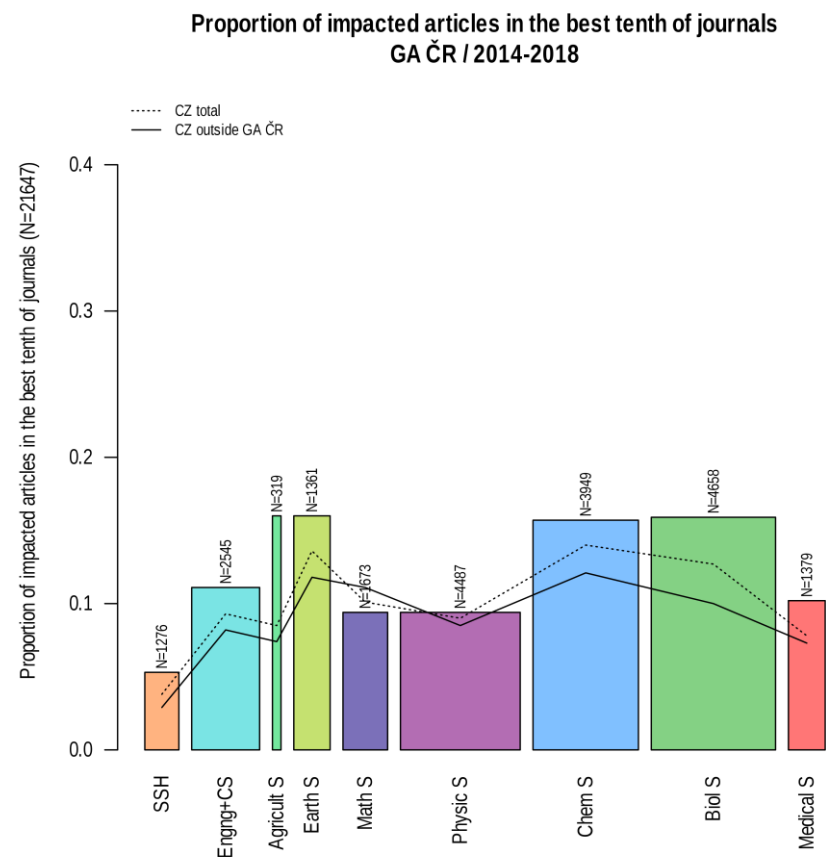
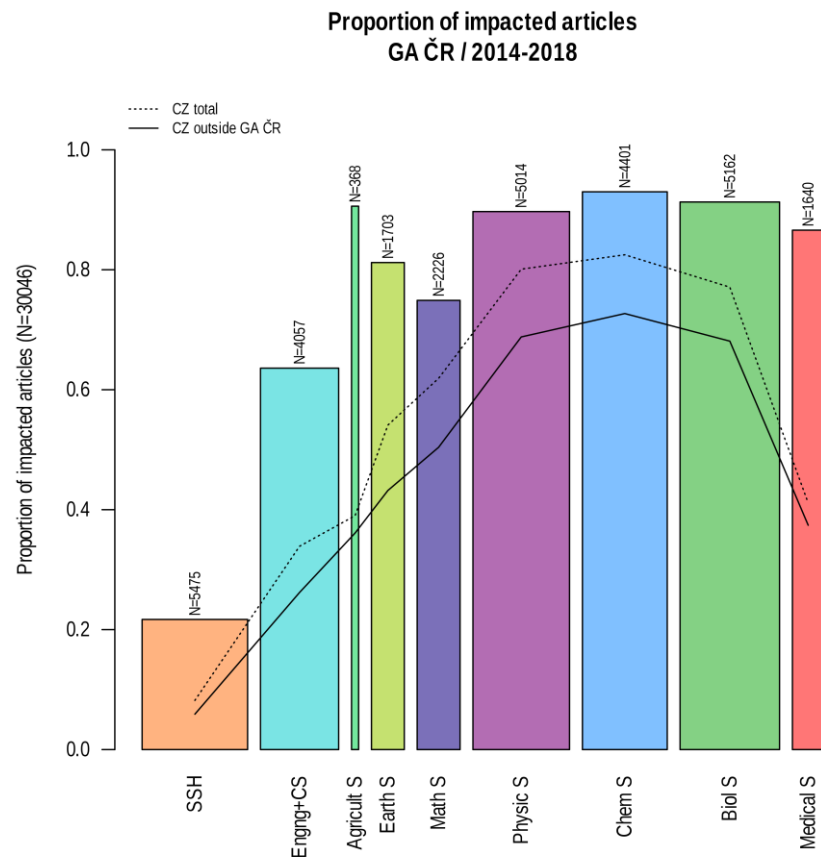
How GACR fulfils its role?

Basic measurable parameters are e.g.:

- Bibliometric analysis of project outputs from last years
- Impact to success in other prestigious competitions (e.g. ERC...) (as outlook)
-?



Bibliometric analysis of results 2014–2018

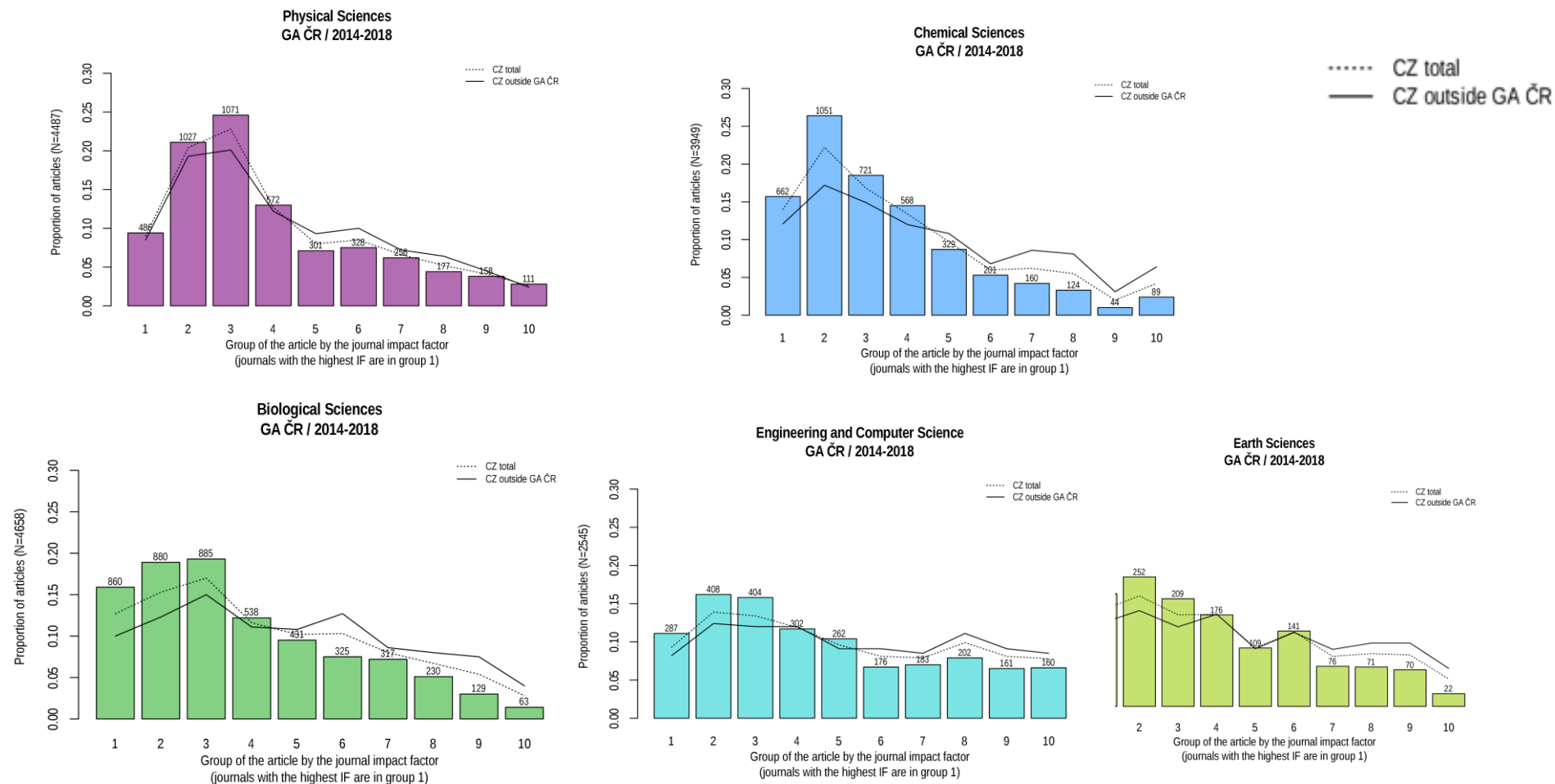


The quality of publications created with the support of the GACR exceeds the national average in the vast majority of fields



How GACR fulfils its role as a provider of targeted support?

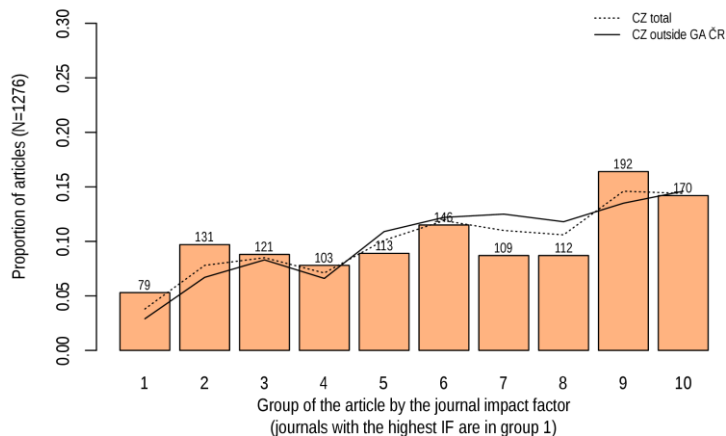
Analysis based on 30,046 publications of which 3,107 were funded by GACR (2014–2018)



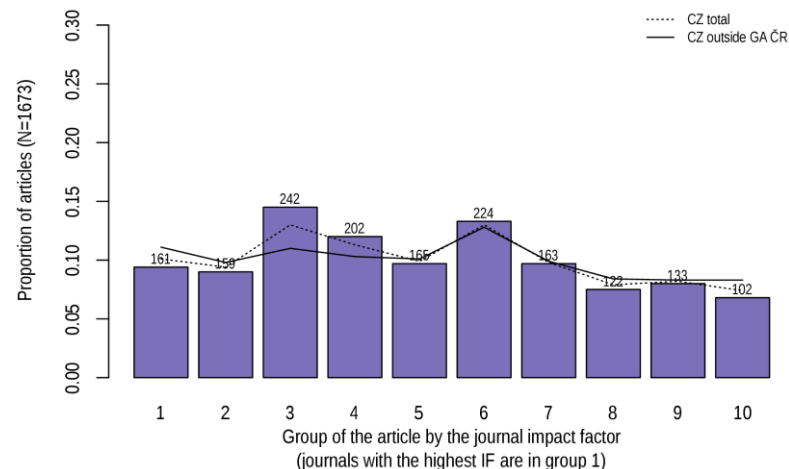


How GACR fulfills its role as a provider of targeted support?

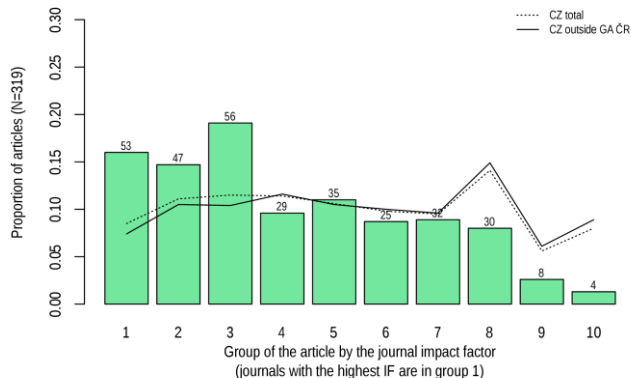
Social Sciences and Humanities
GA ČR / 2014-2018



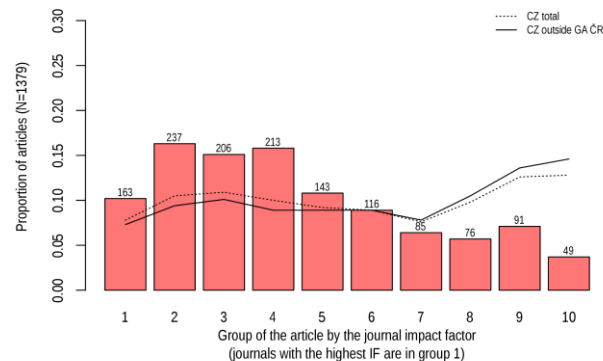
Mathematics
GA ČR / 2014-2018



Agricultural Sciences
GA ČR / 2014-2018



Medical Sciences
GA ČR / 2014-2018





Number of dedications of Highly Cited Papers from Czech Republic according to the grant provider

Highly Cited Papers

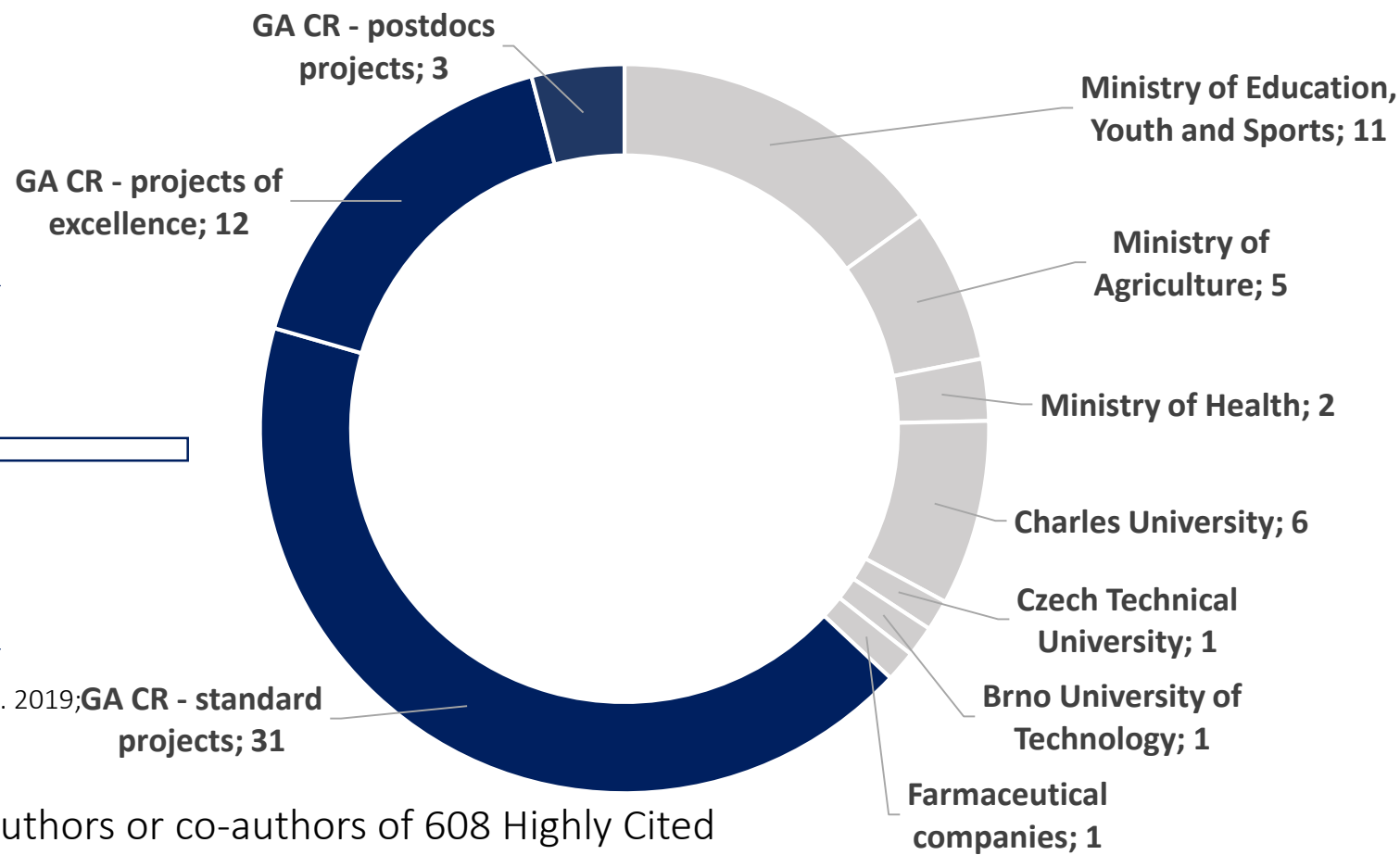
- 1% of the most cited (in the given field)
- Highly prestigious

46 of 73

dedications to GACR

- articles from 2016–2018; in Highly Cited Papers on 1. 10. 2019; submitted from Czech institution

Scientists from Czech Institutions were authors or co-authors of 608 Highly Cited Papers from which 73 were sent from Czech Institution





Highly Cited Papers

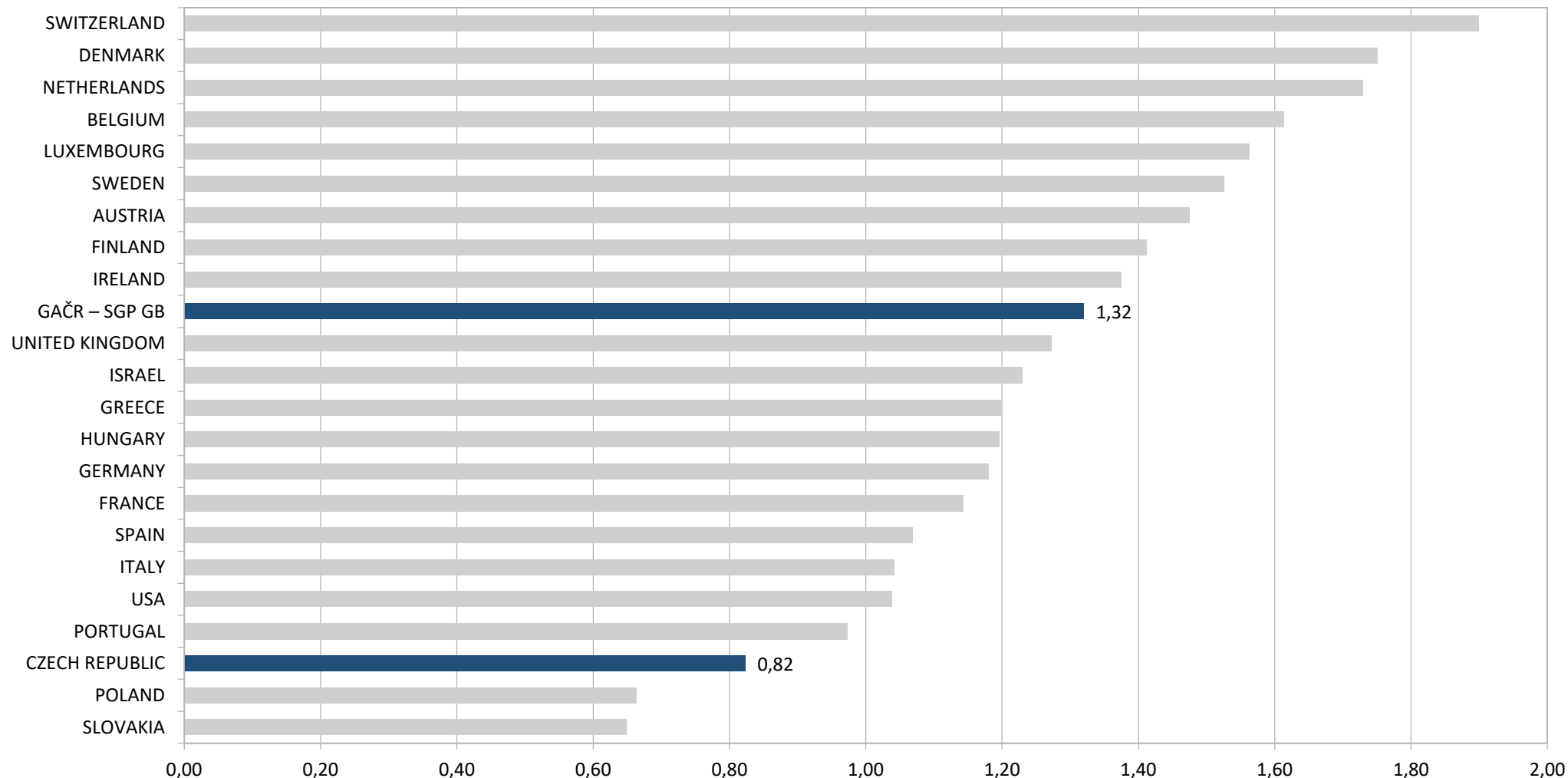
SGP – excellence projects 2012-2018

- 61 highly cited papers in total
- From the implementation of **17 projects**
- **1,32%** of all papers from SGP in WoS is **highly cited**

(values are valid for February 2020)



% HIGHLY CITED PAPERS (2012-2018)





Thank you for your
attention!

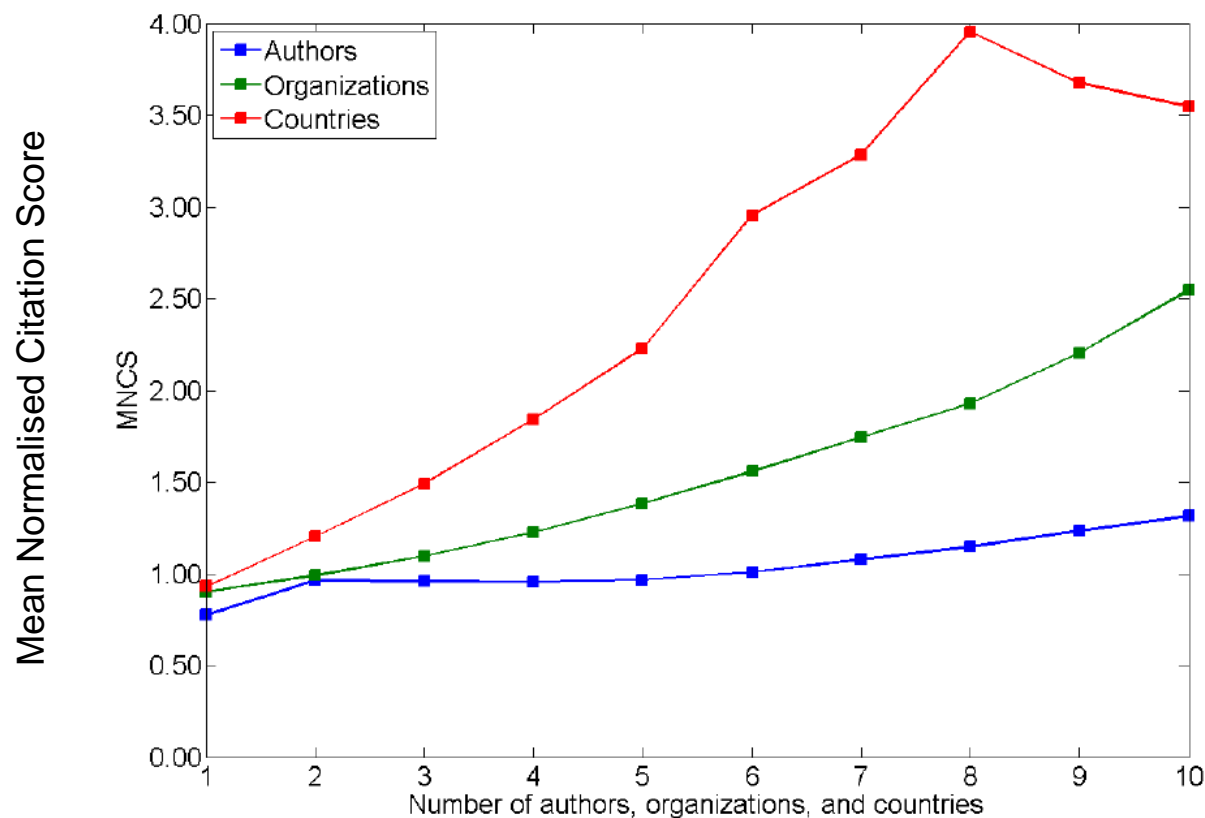
RNDr. Alice Valkárová, DrSc.



Cooperation

Citation advantage of collaborative publications

Without self-citations, MNCS – publication is cited MNCS times more than the average number of citations in the field



1980–2010 all articles, reviews,
WoS database, without self-
citations
Source: CWTS Leiden