

O financování vědy

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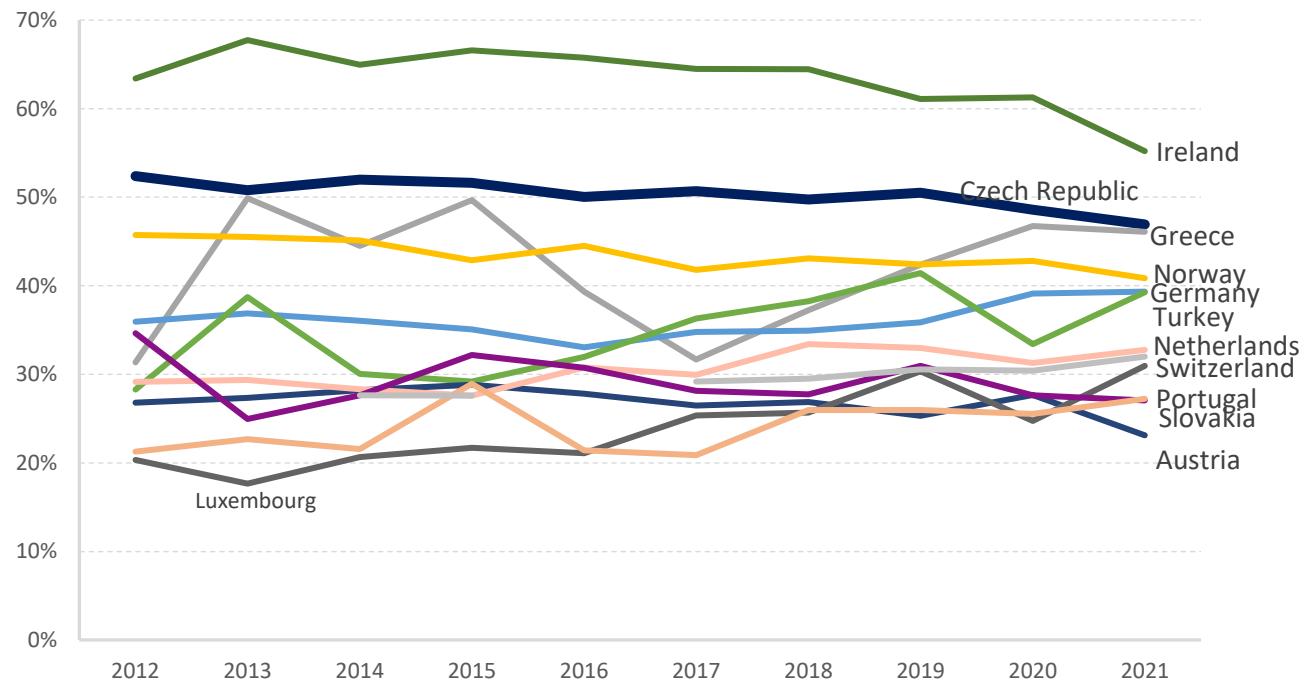
V zásadě 2 schémata:

- Institucionální podpora
- Účelová podpora

Významními poskytovateli účelové podpory v základním výzkumu v ČR jsou Grantová agentura ČR (GAČR), Technologická agentura (TAČR) a MŠMT

SHARE OF TARGETED SUPPORT TO R&D IN SELECTED EUROPEAN COUNTRIES

- Share of targeted funds is ~ 50%
- These data show that targeted support plays an important role in the Czech Republic



Source:
Eurostat

- Směřování k zvýšení kvality a relevance řešených výzkumných témat
- Cesta k zajištění alespoň minimálního standardu kvality
- Poskytnutí zpětné vazby vědcům, tj. otestování jejich nápadů znalými (většinou zahraničními) oponenty
- Posílení důvěry veřejnosti v to, že je podporován výzkum, který je kvalitní a má smysl
- Prostředky se dostanou bezprostředně řešitelům, žádné „ztráty“ cestou k nim

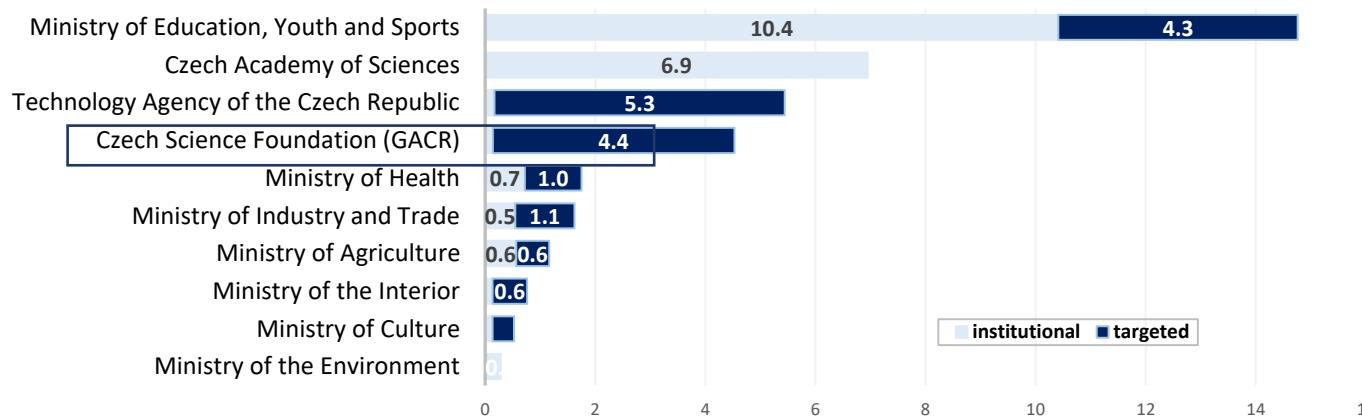
Nevýhody účelového financování

- Spoléhání se na účelové financování může vést k podpoře krátkodobých projektů s malým rizikem místo k podpoře dlouhodobějších vizí s významným rizikem ale excelentními výsledky
- Hodnotitelé mohou mít tendenci podporovat „main stream“
- Psaní projektů zatěžuje časově navrhovatele a agenda kolem hodnocení a výběru projektů zatěžuje finančně státní rozpočet
- Vědci a instituce mají ztížené plánování svého výzkumu, protože jejich dlouhodobější budoucnost je nejistá

RESEARCH FUNDING IN THE CZECH REPUBLIC 2017–2021

	2017	2018	2019	2020	2021
Ministry of Education, Youth and Sports	42,5%	42,8%	38,9%	39,7%	38,5%
Czech Academy of Sciences	17,1%	16,8%	16,6%	17,5%	18,1%
Czech Science Foundation (GACR)	13,4%	12,1%	11,9%	11,8%	11,8%
Technology Agency of the Czech Republic	9,5%	8,6%	11,8%	13,3%	14,2%
Ministry of Industry and Trade	3,6%	5,0%	7,0%	4,6%	4,2%
Ministry of Health	5,2%	5,5%	4,8%	4,3%	4,6%
Ministry of Agriculture	2,9%	2,6%	2,7%	2,6%	3,0%
Ministry of the Interior	2,1%	1,9%	2,1%	1,7%	2,0%
Ministry of Culture	1,3%	1,8%	1,6%	1,6%	1,4%
Ministry of Defence	1,6%	1,5%	1,3%	1,5%	0,6%
Other	0,9%	1,3%	1,3%	1,4%	1,5%

Actual state budget expenditures on research, development and innovation in the Czech Republic by main providers in 2021 (in billions of CZK)

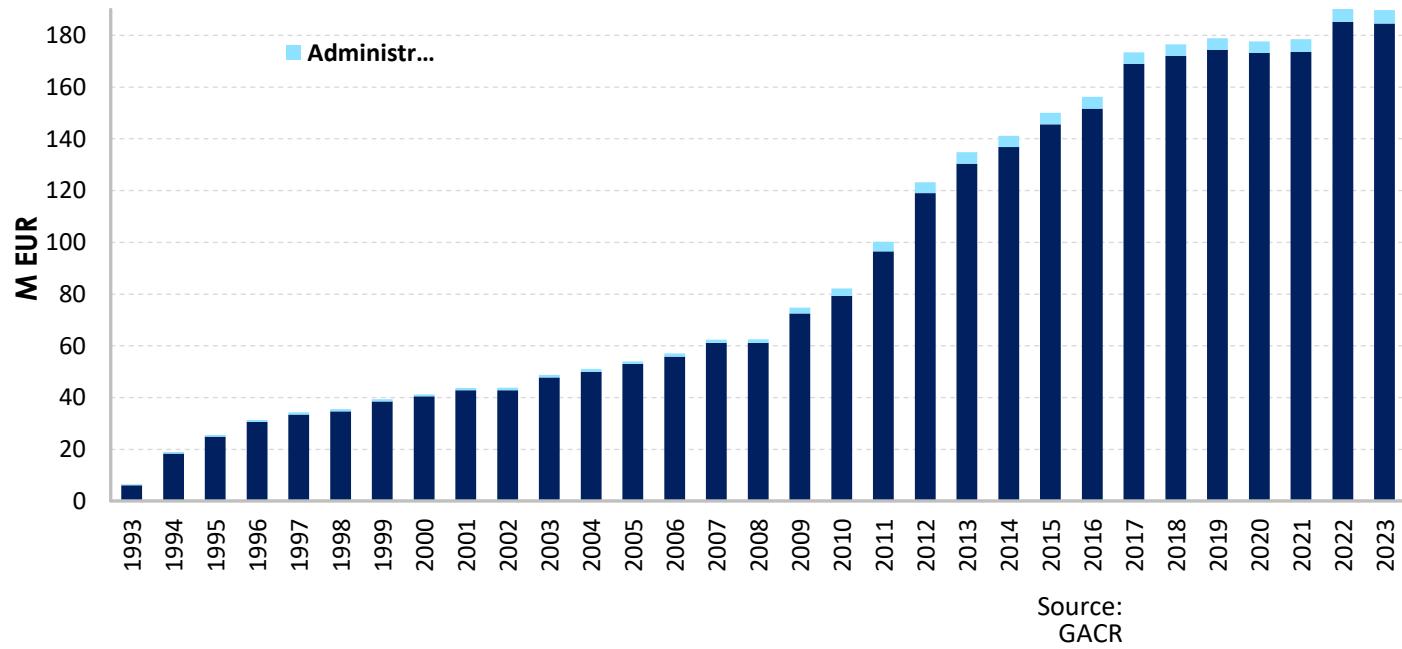


Source:
RVVI / R&D Council

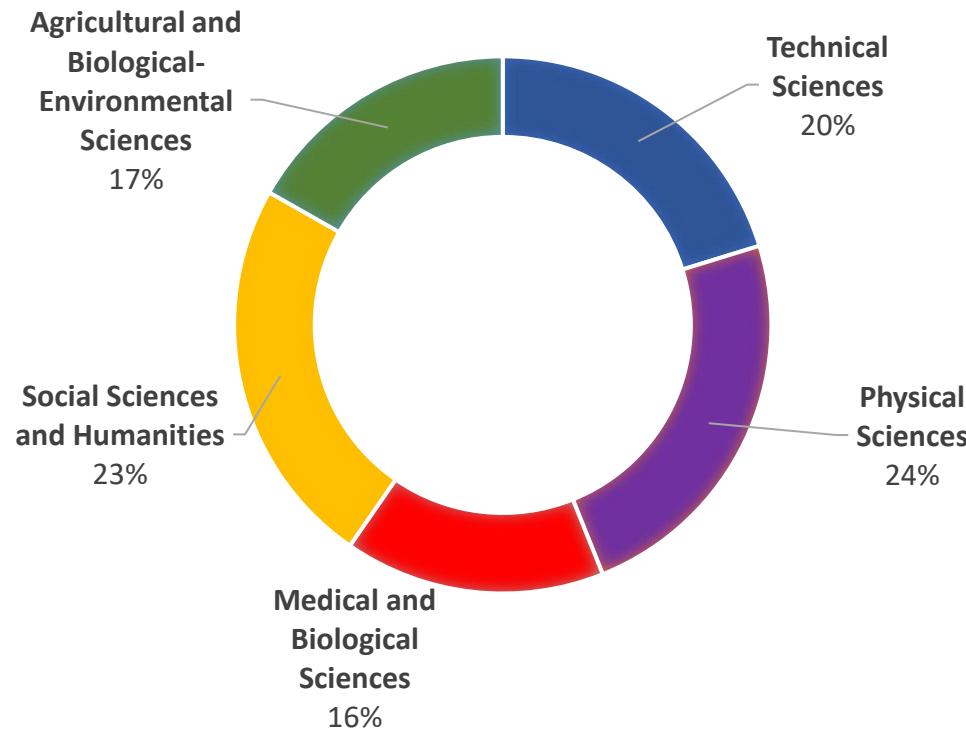
TOTAL BUDGET 1993-2023

- Budget for 2023 – approx. 4.7 bn. CZK
- Institutional budget/total budget ~ 2.7 %

- 1993: 0.2 bn. CZK
- 2003: 1.2 bn. CZK
- 2013: 3.3 bn. CZK

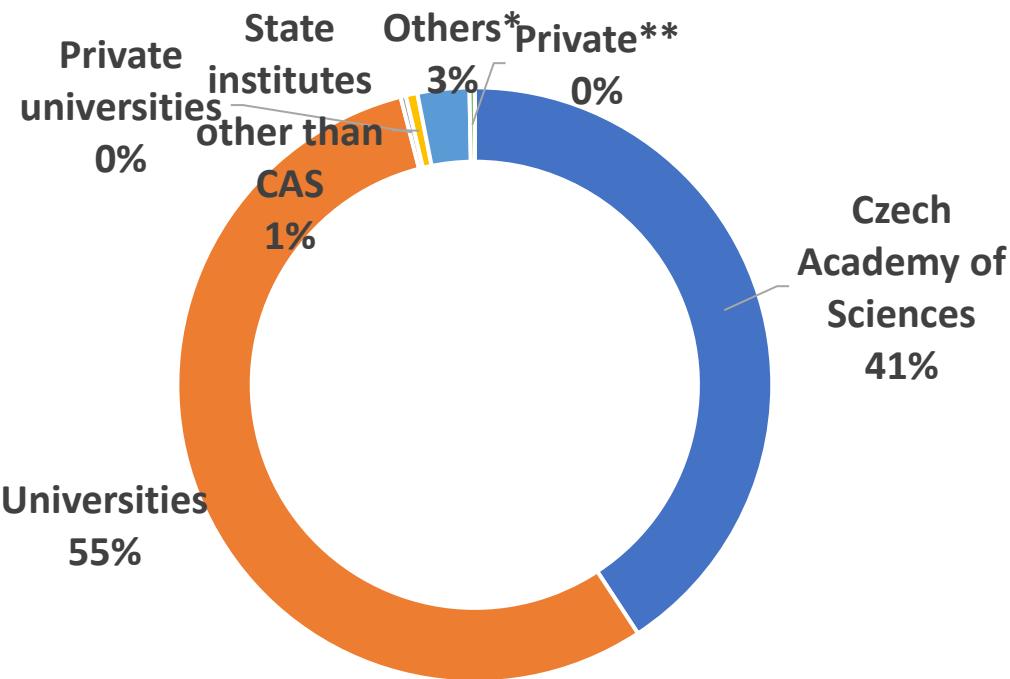


SHARE OF DISCIPLINES IN SINGLE PROJECT FUNDING (in %, 2022)



Source:
GACR

SUPPORTED PROJECTS & INSTITUTIONS

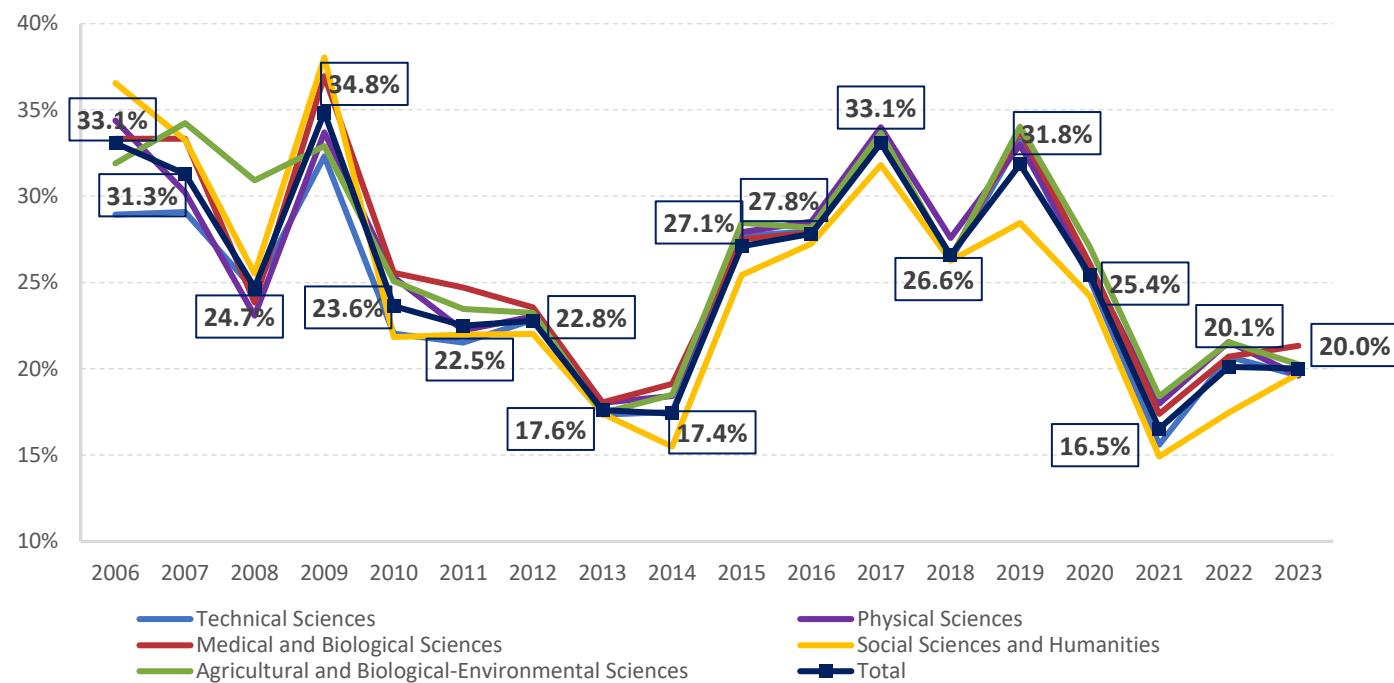


* Others: hospitals, libraries, museums, subsidised organisation, associations, galleries, foundations, organizational units of the state

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

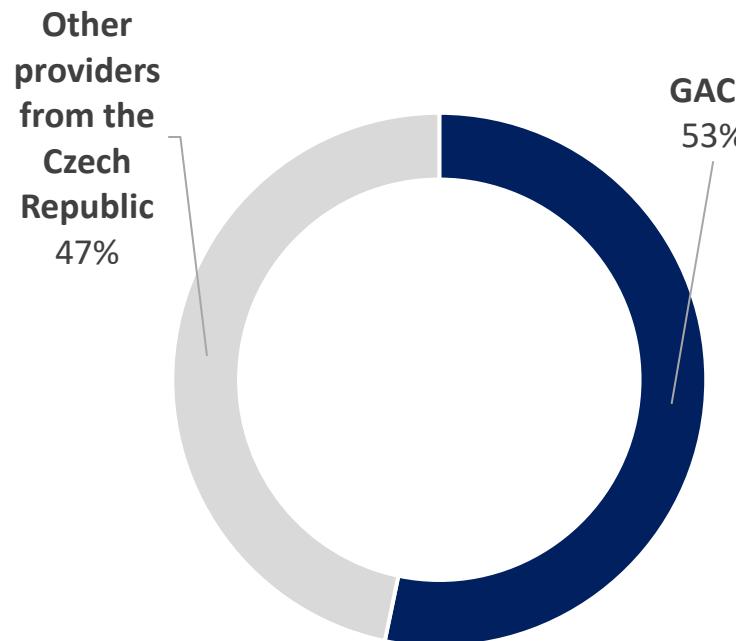
Source:
GACR

STANDARD PROJECTS – SHARE OF FUNDED PROJECT PROPOSALS



Source:
GACR

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

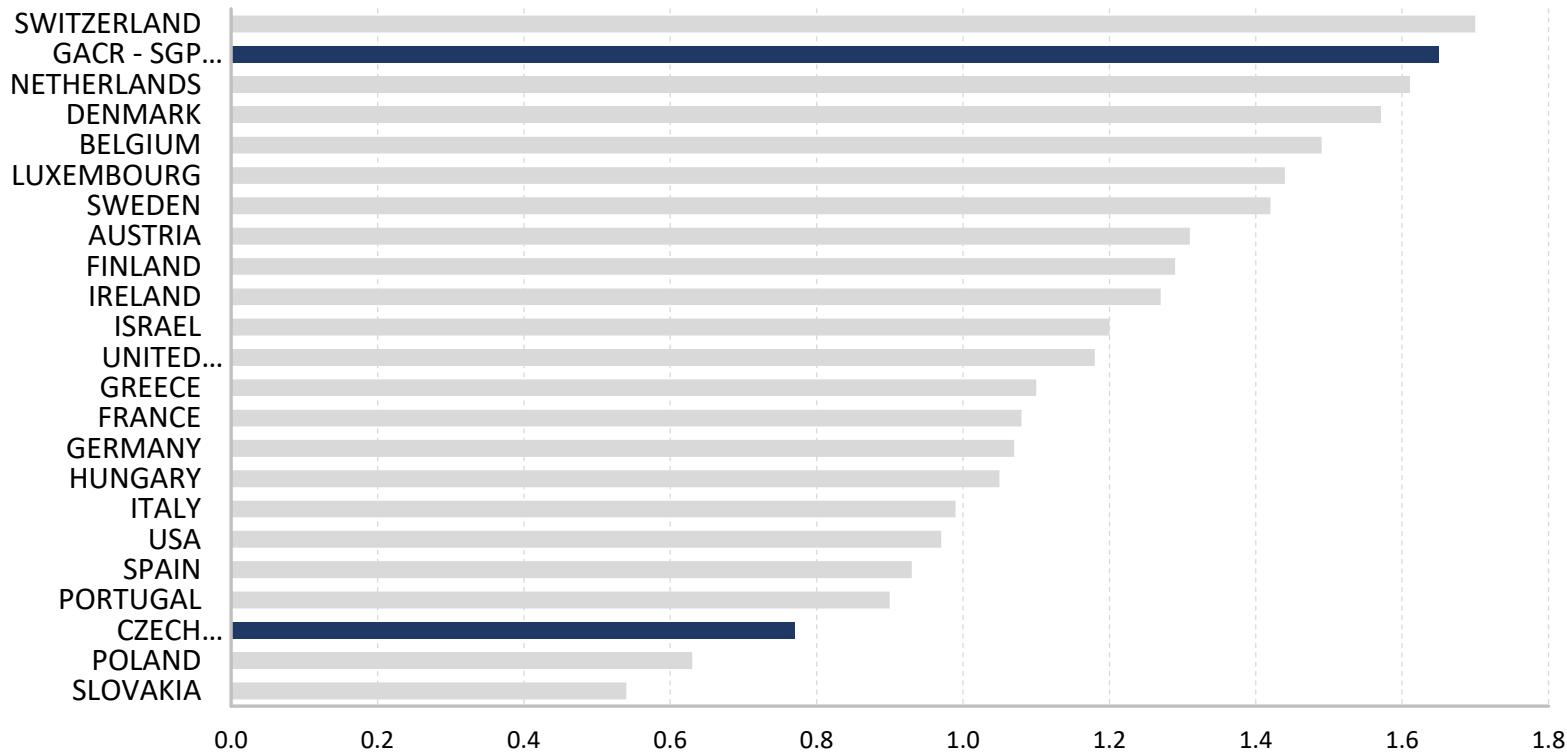
187 of 351

dedications to GACR

▪ articles from 2012–2022; in Highly Cited Papers on December 2022

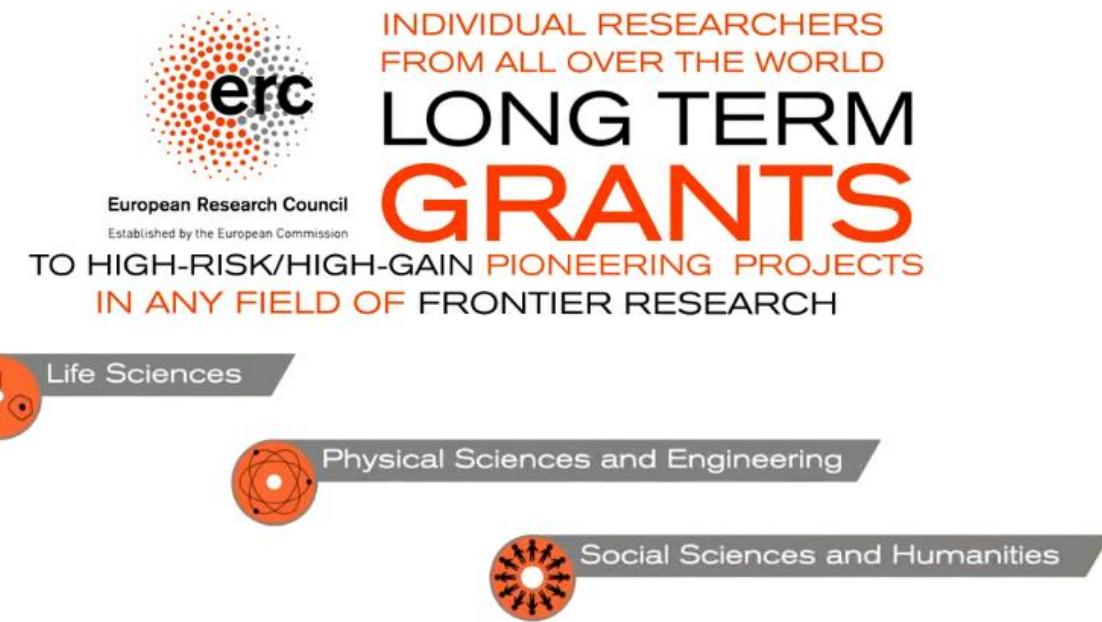
Source:
GACR, InCites

% HIGHLY CITED PAPERS



Source:
GACR, InCites

ERC Basics



The European Research Council (ERC) logo consists of a circular arrangement of dots in shades of red, orange, and grey, with the letters "erc" in white lowercase in the center. Below the logo, the text reads: "European Research Council" and "Established by the European Commission". To the right of the logo, the text "INDIVIDUAL RESEARCHERS FROM ALL OVER THE WORLD" is in orange, followed by "LONG TERM GRANTS" in large black and orange letters. Below this, in smaller orange text, is "TO HIGH-RISK/HIGH-GAIN PIONEERING PROJECTS IN ANY FIELD OF FRONTIER RESEARCH". At the bottom, three categories are listed with corresponding icons: "Life Sciences" (orange circle with three smaller circles), "Physical Sciences and Engineering" (orange circle with a central atom-like symbol), and "Social Sciences and Humanities" (orange circle with radiating arrows).

Why Should one Apply for an ERC grant?

- Research topic of own choice, with a team of own choice
- True financial autonomy for 5 years
- Negotiate with the host institution the best conditions of work
- Attract top team members (EU and non-EU) and collaborators
- Portability of grants within Europe
- Attract additional funding

ERC Grant Schemes



Starting Grant

Up to €1.5 million + up to €1 million

Duration: up to 5 years

2-7 years of experience after PhD



Consolidator Grant

Up to €2 million + up to €1 million

Duration: up to 5 years

7-12 years of experience after PhD



Advanced Grant

Up to €2.5 million + up to €1 million

Duration: up to 5 years

An excellent scientific track record of
recognized achievements in the last 10 years

ERC Grant Schemes



Synergy grant

Size of the grant: €10 million + up to €4 million

Duration: up to 6 years

2 to 4 researchers and their research groups
(one researcher can be based outside EU/AC)



Proof of Concept

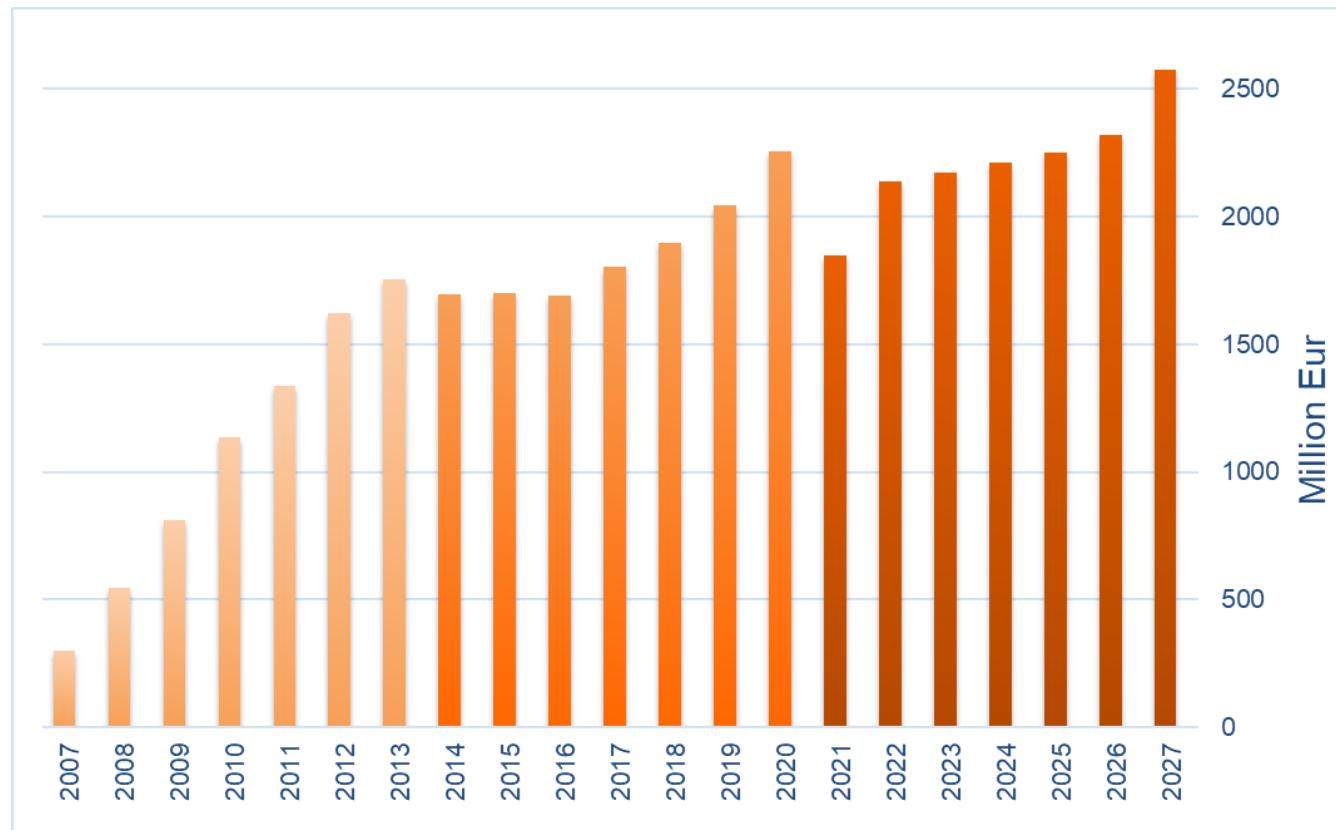
Size of the grant: €150 000

Duration: up to 18 months

Demonstrate that the idea funded by the original

ERC grant has innovation potential and significant economic or societal benefits

ERC Budget 2007 – 2027: EUR 36.5 billion



ERC in Figures



Over **12,000** top researchers funded since the ERC creation in 2007



Over **80,000** researchers and other professionals employed in ERC research teams



Over **2,200** patents and other IPR applications generated by ERC funding



Over **400** start-ups identified as founded or co-founded by ERC grantees



Over **200,000** articles from ERC projects published in scientific journals



Over **900** research institutions hosting ERC grantees – universities, public or private research centres in the EU or Associated Countries

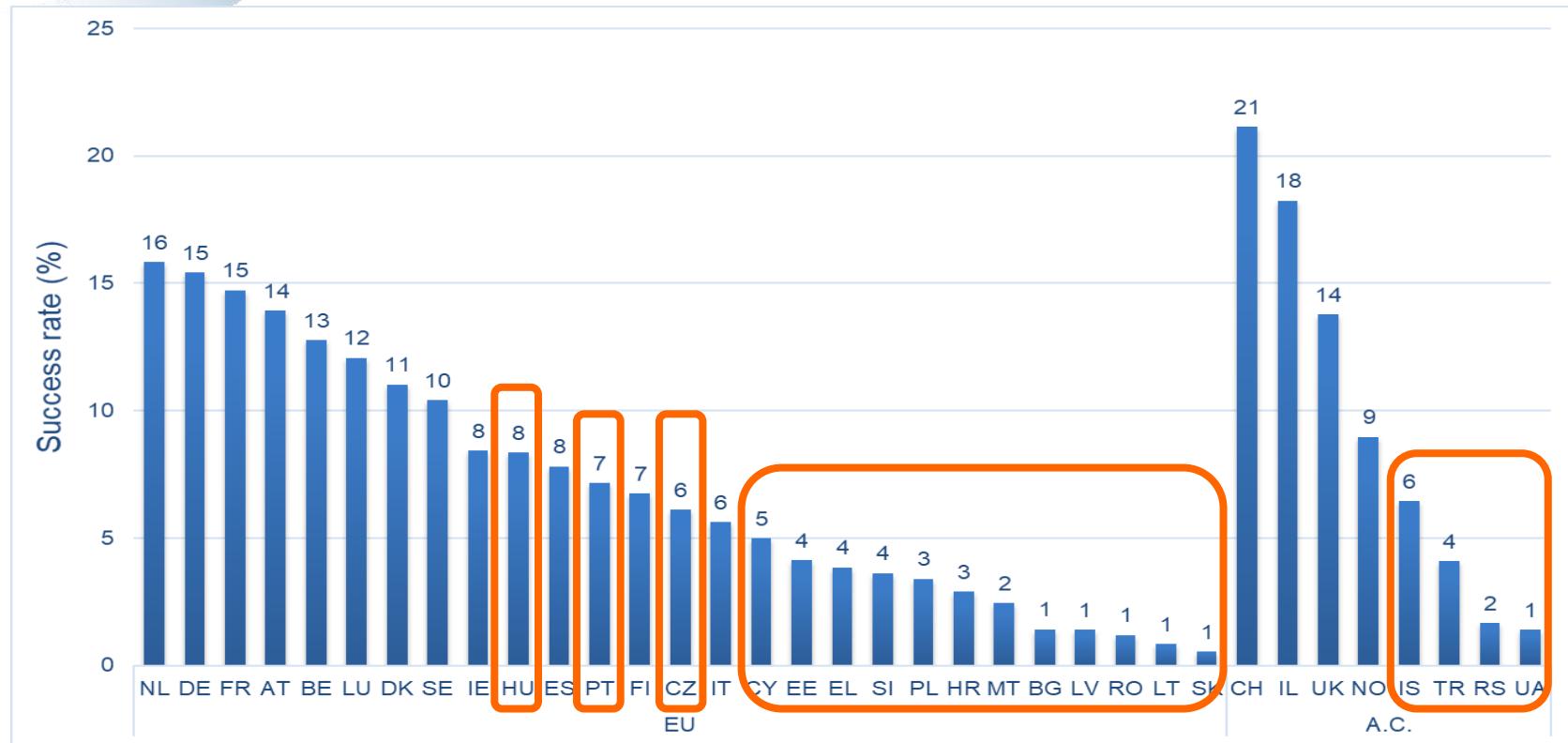


88 nationalities of grant holders

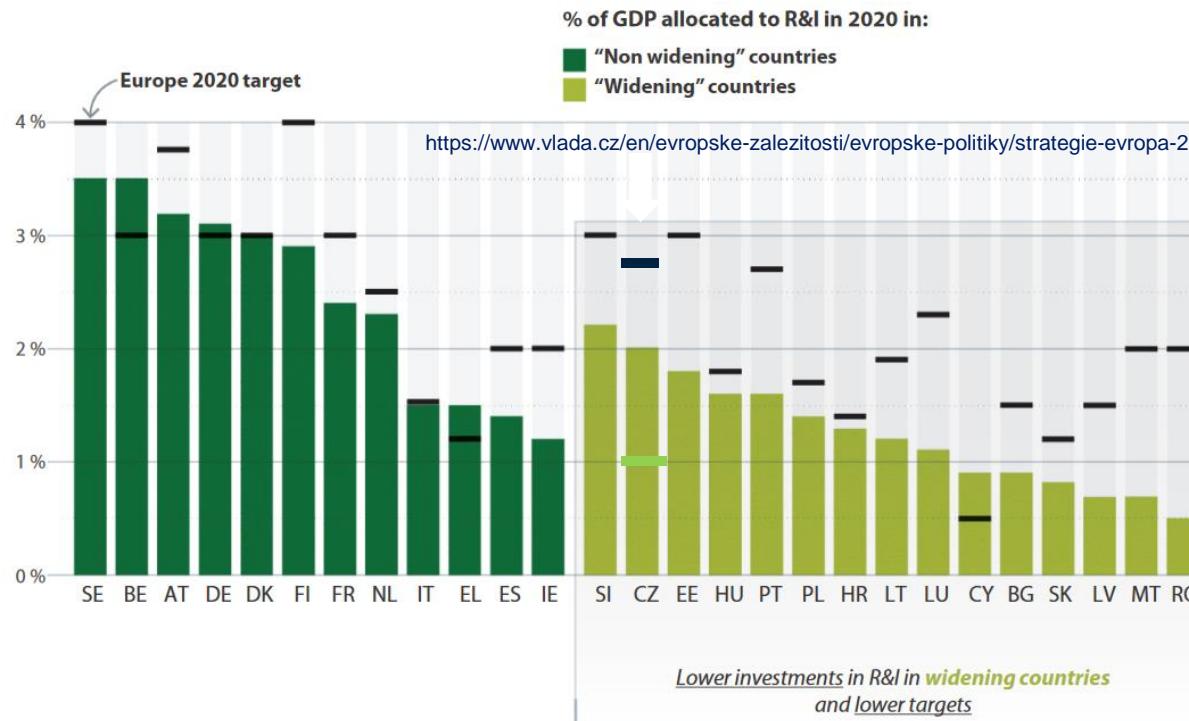


12 Nobel Prizes, **6** Fields Medals, **11** Wolf Prizes and other prizes awarded to ERC grantees

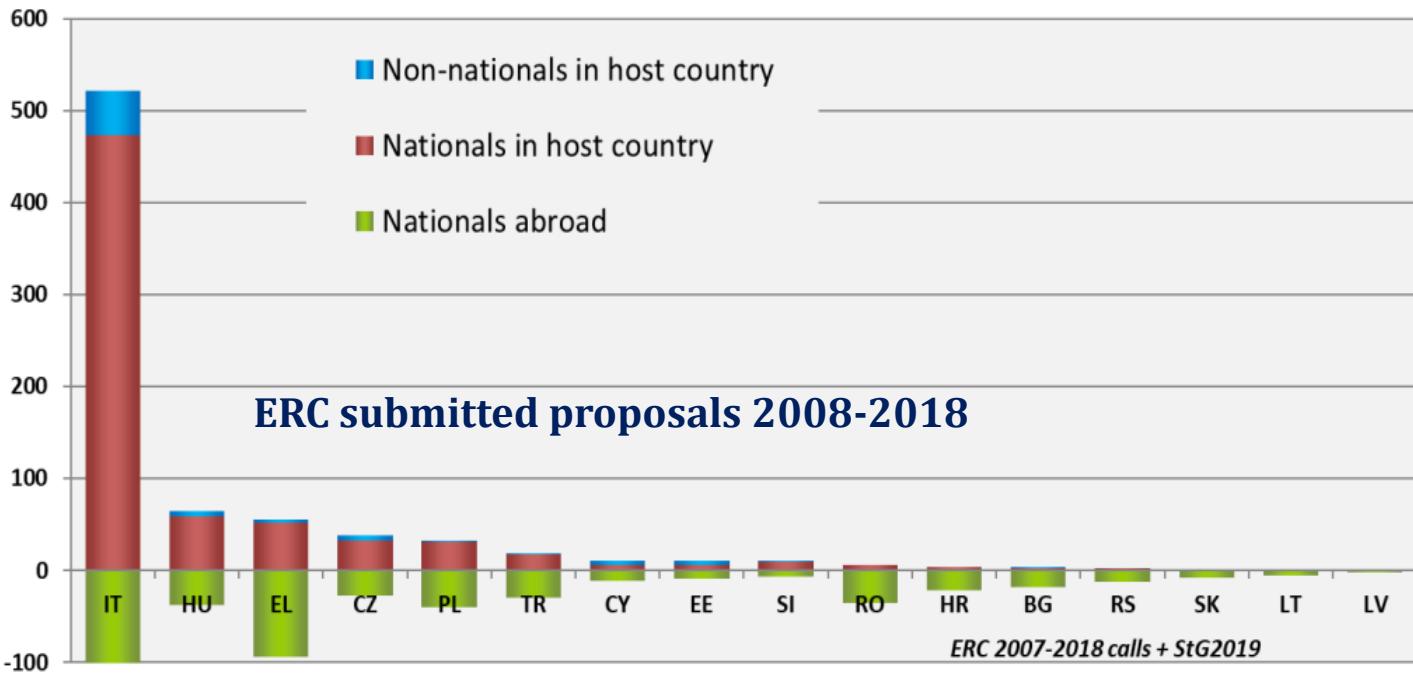
Status quo: Success Rates by Country of HI (2007-2021)



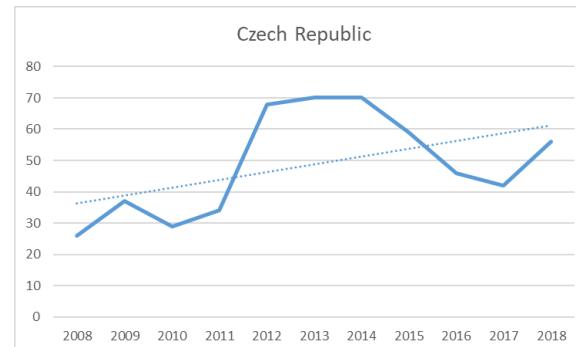
National R&I Investments as % of GDP



Source: ECA, based on Eurostat data for actual figures, Europe 2020 Strategy for targets.

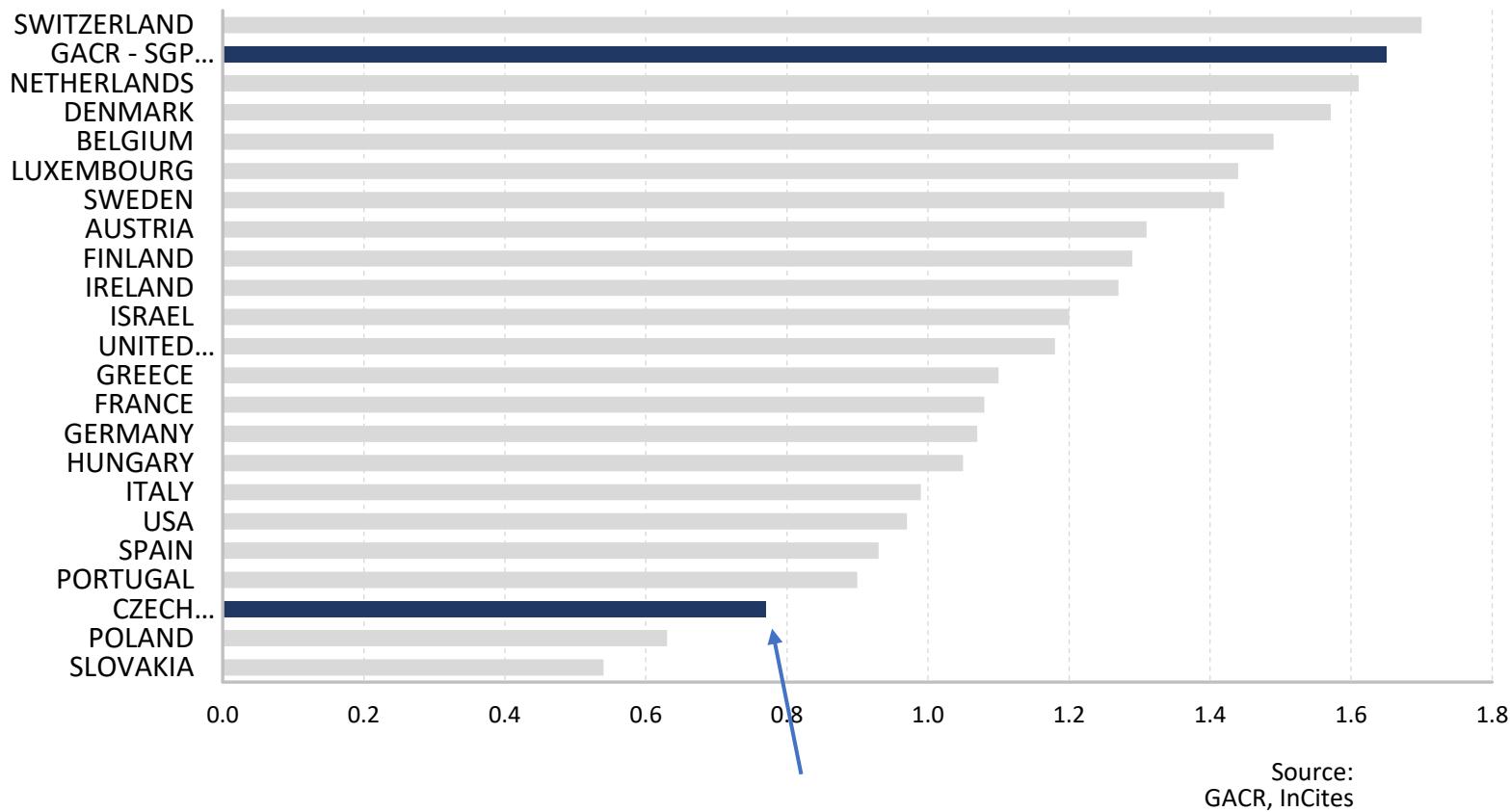


ERC submitted proposals 2008-2018



Shanghai Ranking		ERC calls Horizon 2020			Shanghai Ranking		ERC calls Horizon 2020		
		Evaluated	Funded	Success rate			Evaluated	Funded	Success rate
1-100 University of Cambridge		1097	242	22%	501-600	Palacky University Olomouc,CZ	19	1	5%
1-100 University College London		964	171	18%	501-600	University of Ljubljana,SI	43	4	9%
1-100 Swiss Federal Institute of Technology		585	175	30%	501-600	Eotvos Lorand University,HU	36	3	8%
1-100 University of Copenhagen		829	96	12%	501-600	Polytechnic University of Turin, IT	106	6	6%
1-100 University of Paris Sud		75	13	17%	501-600	University of Essex, UK	28	2	7%
1-100 Heidelberg University		232	41	18%	501-600	University of Hannover, DE	36	4	11%
1-100 Utrecht University		636	84	13%	501-600	University of Tampere, FI	41	1	2%
1-100 Stockholm University		308	34	11%	501-600	University of Siena, IT	38	1	3%
1-100 KU Leuven		738	90	12%	601-700	Vilnius University,LT	20	1	5%
101-200 Aix Marseille		128	9	7%	601-700	Masaryk University Brno,CZ	31	3	10%
101-200 Cardiff University		295	20	7%	601-700	University of Szeged,HU	15	1	7%
101-200 Norwegian University of Science and Technology		187	10	5%	601-700	University of Cyprus,CY	57	2	4%
101-200 Weizmann Institute of Science		444	154	35%	601-700	Grenoble Institute of Technology, FR	12	1	8%
101-200 University Grenoble Alpes		46	10	22%	601-700	National Technical University of Athens, EL	27	0	0%
101-200 VU University Amsterdam		181	23	13%	601-700	Polytechnic University of Catalonia, ES	69	8	12%
101-200 Sapienza University of Rome		484	34	7%	601-700	University of Portsmouth, UK	29	2	7%
101-200 Trinity College Dublin		348	37	11%	601-700	University of L'Aquila, IT	23	0	0%
201-300 Charles University Prague,CZ		63	8	13%	701-800	Adam Mickiewicz University in Poznan,PL	21	0	0%
201-300 Durham University, UK		146	15	10%	701-800	Babes-Bolyai University (UBB), RO	25	1	4%
201-300 Maastricht University, NL		107	11	10%	701-800	Medical University of Warsaw,PL	3	1	33%
201-300 Polytechnic Institute of Milan, IT		154	15	10%	701-800	Czech Technical University of Prague,CZ	26	2	8%
201-300 University of Liege, BE		83	9	11%	701-800	International Institute of Molecular and Cell Biology (PAS),PL	3	0	0%
301-400 Jagiellonian University,PL		56	3	5%	701-800	University of Luxembourg, LU	39	9	23%
301-400, University of Tartu,EE		55	3	5%	701-800	University of Poitiers, FR	4	0	0%
301-400 Pompeu Fabra University, ES		152	20	13%	701-800	Liverpool John Moore University, UK	26	2	8%
301-400 Eindhoven University of Technology		111	21	19%	701-800	Second University of Naples, IT	10	0	0%
301-400 University College Dublin		144	11	8%	701-800	University of Crete, EL	19	0	0%
301-400 University of Naples Federico II		140	7	5%	801-900	Budapest University of Technology and Economics,HU	15	0	0%
401-500 University of Zagreb - Faculty of Science,HR		15	0	0%	801-900	Manchester Metropolitan University, UK	1	0	0%
401-500 University of Warsaw,PL		73	7	10%	801-900	Orebro University, SE	3	0	0%
401-500 Bar-Ilan University, IL		126	12	10%	801-900	University of Alicante, ES	33	0	0%
401-500 Aristotle University Thessaloniki, EL		53	3	6%	901-1000	Semmelweis University,HU	8	0	0%
401-500 New University of Lisbon, PT		30	2	7%	901-1000	Sofia University,BG	7	0	0%
401-500 University of Seville, ES		55	7	13%	901-1000	University of Bucharest,RO	8	0	0%
401-500 University of Bath, UK		78	4	5%	901-1000	National Polytechnic Institute of Toulouse, FR	0	0	0%
401-500 University of Genoa		61	4	7%	901-1000	Roma Tre University, IT	40	1	3%
					901-1000	University of Hull, UK	20	1	5%
					901-1000	University of Thessaly, EL	7	0	0%

% HIGHLY CITED PAPERS



Number of ERC grants versus number of highly cited papers (2012-2018)



Conclusion: Number of submitted projects does not match the number of highly cited papers