Science & Research at HEIs

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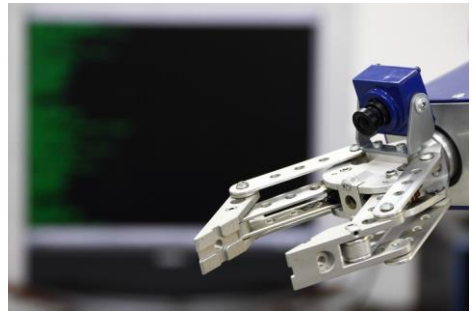
Content

1. Science & Research Ecosystem in SR



Law no. 172/2005 Coll. on the Organization of State Support for Research & Development …

Section 7 Sector Structure of Research & Development

- Legal entities and natural persons - entrepreneurs carrying out R&D are included in these sectors for statistical purposes:
  a) **State Sector** (Slovak Academy of Sciences [in the process of transition into Sector of public research institutions] and legal entities carrying out R&D established by the central authorities of the state administration),
  b) **Sector of Public Research Institutions**,
  c) **HEIs Sector** (public, state and private HEIs and legal entities established by them to carry out R&D),
  d) **NGO Sector** (civil associations, non-profit organizations, associations of legal entities carrying out R&D),
  e) **Business sector** (entrepreneurs that, as part of their business activities, also carry out R&D).

Characteristics of the Science and Research Ecosystem in Slovakia:

1. Fragmentation of the science, research and innovation administration and management system;
2. Lack of coordination between ministries and executive agencies;
3. Absence of a comprehensive long-term research and innovation strategy;
4. From the point of view of international comparison, lagging behind in the financing of science and research (belongs to the lowest within the EU);
5. Significantly fewer employees work in the science and research sector than in comparable countries.

Consequences e. g.:

a) lagging behind and negative development in the number of patents per GDP,

b) low success rate in EU framework programs (Horizon 2020).

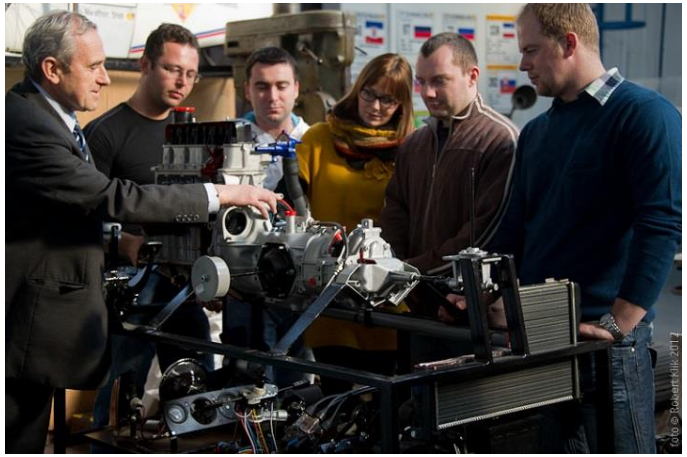
First positive aspects: growth in the number of scientific publications and the number of citations per 1,000 inhabitants, in terms of the ratio of invested resources and the number of outputs, the Slovak Republic is above the average of EU countries.

Sources: MŠVVaŠ SR (2021), s. 8 a NKÚ SR (2018), s. 45

HEIs in the Science & Research Ecosystem in SR

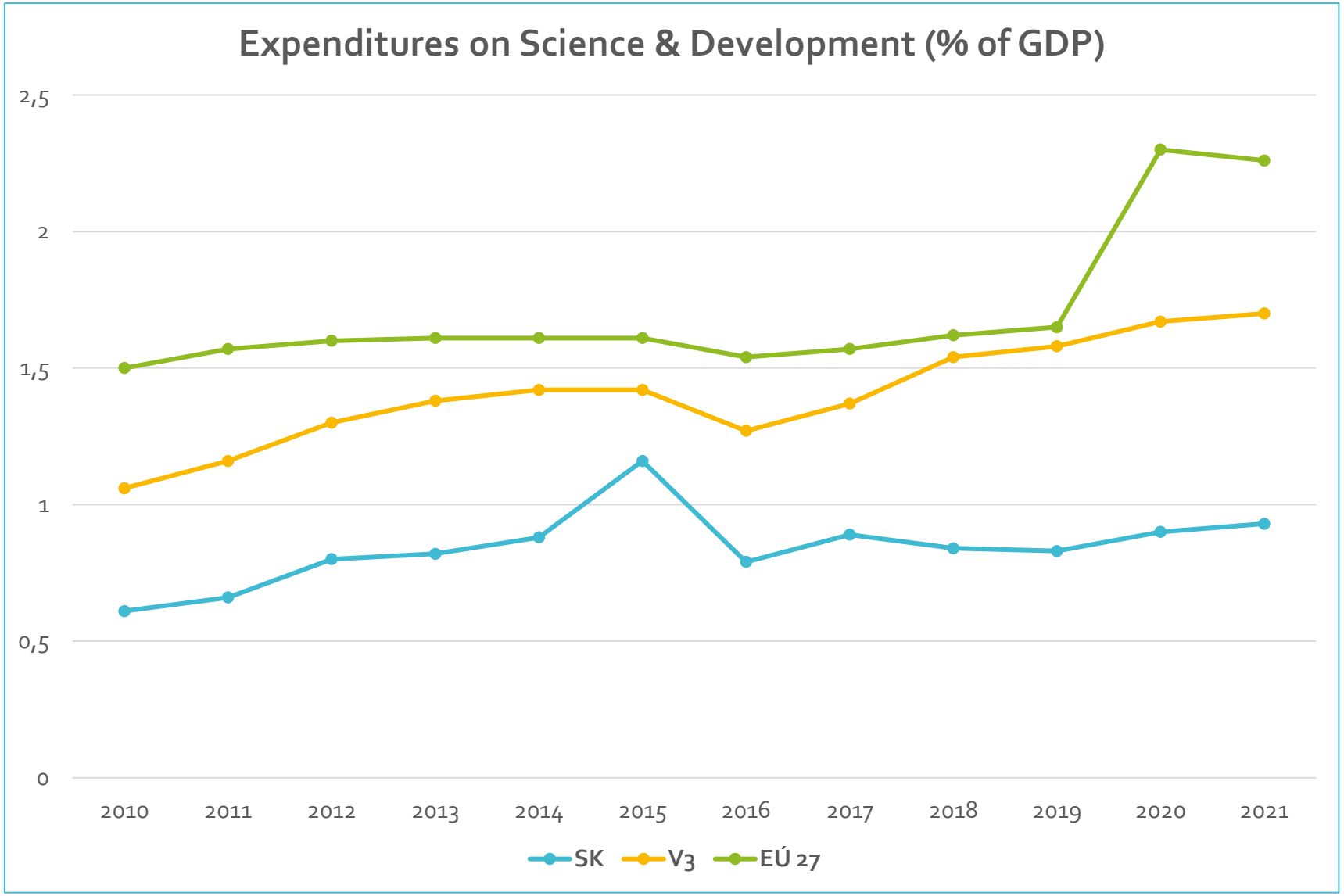
- **20 public, 3 state and 10 private HEIs.**
- Legal entities established by HEIs carrying out research and development: ESI Funds – OP Research & Development and Schemes for Support of Research & Development (state aid scheme):
  - **7 Scientific Parks:**
    - University Science Park for Biochemistry Bratislava,
    - University science Park of Comenius University in Bratislava,
    - Medical University Science Park in Košice (MediPark, Košice),
    - University Science Park of University of Žilina in Žilina,
    - TECHNICOM University Science Park (UVP TECHNICOM, Košice),
    - University Science Park STU Bratislava and
    - CAMBO University Science Park (Trnava).
  - **7 Research Centres:**
    - Martin Centre for Biomedicine,
    - AgroBioTech Research Centre (Nitra),
    - Research Centre of University of Žilina in Žilina,
    - Centre for applied research of new materials and technology transfer,
    - ALEGRO Research Centre (Bratislava),
    - Research centre of progressive materials and technologies for current applications PROMATECH (Košice) and
    - BioMed Martin.
  - Aim: to create an ecosystem for the transfer of technologies and innovations, the implementation of R&D projects, the search for and support of innovative ideas, the provision of support and an incubation environment for start-up companies and spin offs.
  - Bonus: digital innovation HUBs and European digital innovation centres

2. Science & Research Funding



Sources of Science & Research Funding

- Institutional support
  - operation and development of science and research infrastructure,
  - Scientific grant agency MŠVVaŠ SR (VEGA),
  - Cultural and educational grant agency MŠVVaŠ SR (KEGA),
  - incentives,
  - support of top teams - excellent workplaces and excellent teams.
- Slovak Research and Development Agency („APVV“)
- Foreign grant schemes – Horizon 2020, Horizon Europe and etc.
- European Structural and Investment Funds (ESI Funds)
- Recovery Plan (Recovery and Sustainability Fund, Components 8 and 9)



Source: EUROSTAT

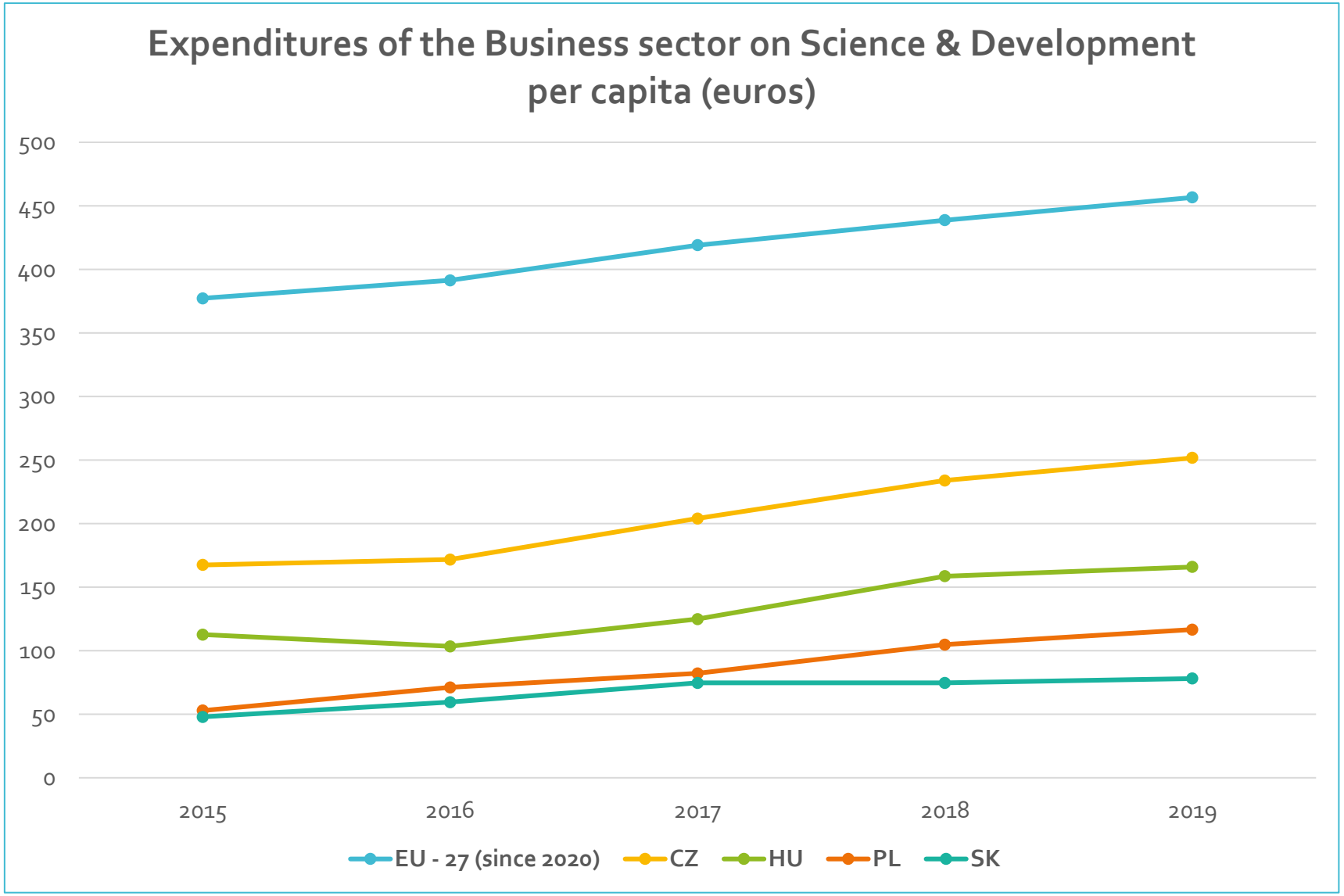
Note: Structure of 0.89 % of GDP in 2017: 55 % from the private sector and 45 % from the public sector.

Expenditures on Science & Technology

in thousands €	2020 S	2021 S	2022 R	2022 OS	2023 N	2024 N	2025 N
Total expenditures on Science & Technology	**492 096**	**513 825**	**478 117**	**577 004**	**563 056**	**430 889**	**425 689**
Science & Technology in MŠVVaŠ SR from state budget*	252 241	259 105	248 029	252 644	259 574	265 285	265 285
EU funds and co-funding from state budget in MŠVVaŠ SR **	72 934	72 137	121 550	180 663	132 400	0	0
SAS including public research institutions	92 897	84 211	84 055	90 681	125 283	117 991	114 295
Departmental science	74 024	98 371	24 483	53 016	45 799	47 613	46 110

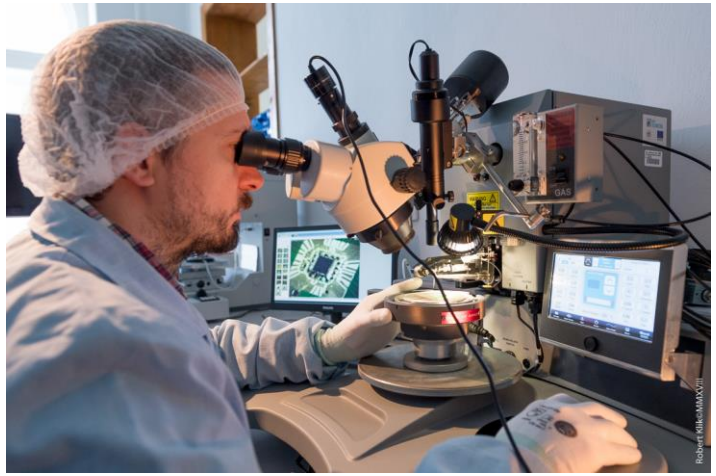
** including HE Science*
*** including expeditures of ESI Funds and co-funding for public HEIs*

Source: Ministry of Finance of the SR (2022). Rozpočet verejnej správy na roky 2023 až 2025, Hlavná kniha, s. 108

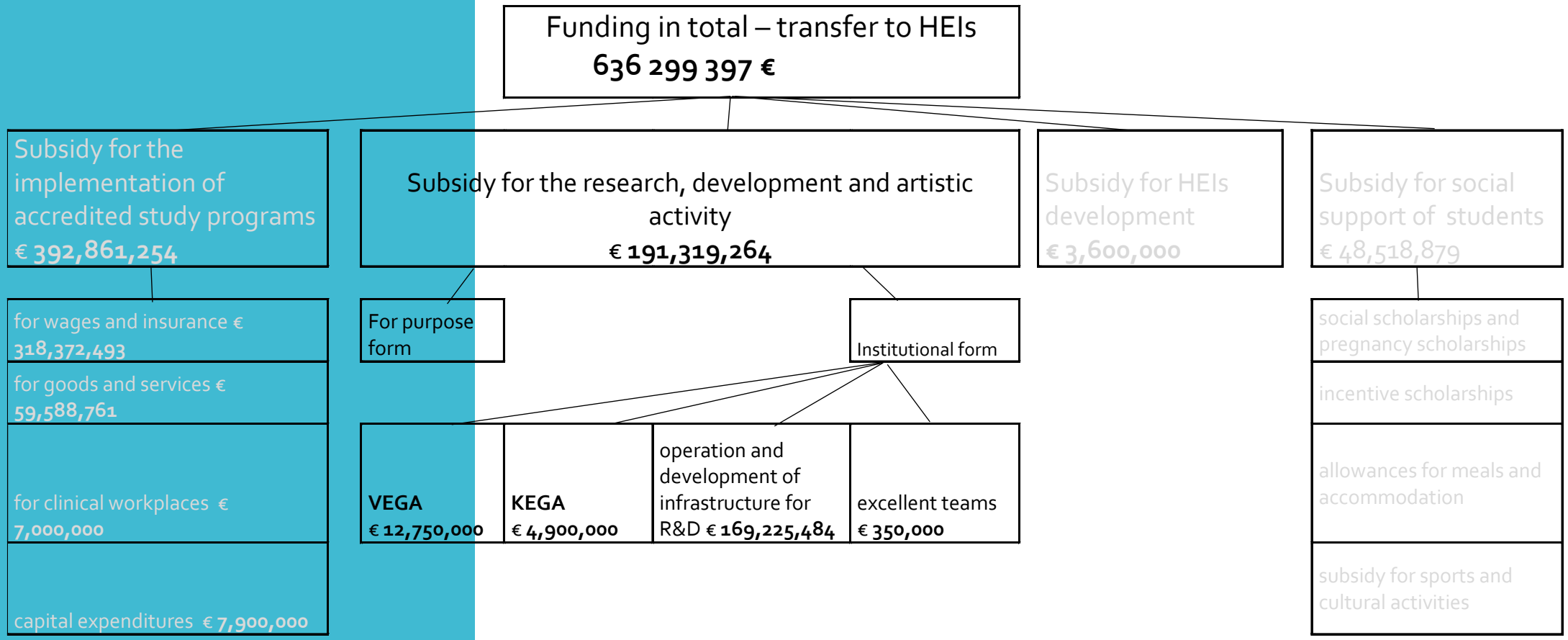


Source: MŠVVaŠ SR (2021)

3. Science, Research, Artistic and other Creative Activity at HEIs in SR



Institutional Support, 2023



Note: the basic operating subsidy for each public HEI is € 120,000.

Source: Rozpis dotácií zo štátneho rozpočtu verejným vysokým školám na rok 2023

- **Central register of publication activity (CREPČ) -** information system of public administration, which records data on the outputs of publication activity and feedback from employees of universities, employees of public research institutions and doctoral students of universities. It serves to ensure statistical research, budgetary purposes, presentation of publication activity and as a basis for periodic evaluation purposes.
- **Central register of artistic activity (CREUČ) -** information system of public administration, in which data on the outputs of artistic activity and responses to outputs are recorded by employees of universities, ensuring the teaching of a subject that includes artistic activity and university students enrolled in a third-level study programs, which contain artistic activity. It serves to ensure statistical research, budgetary purposes, evaluation and presentation of the artistic activity of the university.

https://cms.crepc.sk/

4. Trends in Science & Research in SR

ESFRI

Recovery and Resilience Plan of the Slovak Republic

1.

Component 9: More effective management and strengthening of funding for science, research and innovation

Aim: to improve the state of research and development and the innovation potential of the SR through fundamental reforms and strengthening of funding.

Priority: strengthen and professionalize the supra-ministerial coordination of research and innovation policy.

Success indicators:

a) increasing the rate of investment in research and development and

b) a shift upwards in European Innovation Scoreboard to the level of the European Union average by 2030.

Specific aims:

- allocation of all public expenditures on research, development and innovation, which are allocated competitively, in accordance with the principles of value for money,
- stimulation of private participation in research, development and innovation measured through an increase in private expenditures on research and development to 0.6 % of GDP (2024) with total expenditure of 1.2 % of GDP.

Component 9 is tightly connected to component 17 *Digital Slovakia*, component 8 *Increasing the quality of Slovak HEIs* and component 10 *Attracting and retaining talent*.

Recovery and Resilience Plan of the Slovak Republic

2.

Reforms

Reform 1: Reform of management, evaluation and support of science, research and innovation

Reform 2: Reform of the organization and funding of public research institutions, especially the Slovak Academy of Sciences

Investments

Investment 1: Support of international cooperation and involvement in Horizon Europe and European Institute of Innovation and Technology

Investment 2: Support for the cooperation of companies, the academic sector and research and development organizations

Investment 3: Excellent science

Investment 4: Research and innovation for the decarbonisation of the economy

Investment 5: Research and innovation for the digitization of the economy

Investment 6: Financial instruments to support innovation

Investment 7: IT support of the unified research and development grant system

Estimated costs: € 633.2 million from the Recovery and Resilience Support Fund

National strategy for open science for the years 2021-2028

- Approved by the Slovak government on June 9, 2021.
- Presents the basic theses of open science, describes the situation in the field of open science in Europe, analyzes the initial situation in Slovakia, defines interested groups and strategic areas for promoting the principles of open science in Slovakia.
- The essence is to make available the outputs of publicly funded research - publications and data - in a digital format without restrictions or with minimal restrictions, using public licenses.
- The objectives of the strategy will gradually be fulfilled by the two-year action plans. The first was the **Action Plan for Open Science for the years 2021-2022**. Currently in the evaluation phase. More should follow.

ESFRI Roadmap - SK VI 2020 – 2030

- A key document in the research infrastructure, which monitors the development and the current state of significant public and private research infrastructure in the SR, but also its connection to the economy, domains of intelligent specialization, international cooperation in the context of ESFRI and Horizon Europe.
- It mainly monitors the existing infrastructure built from public resources, while the building of other necessary technical infrastructure focused on industrial research and experimental development with the active participation of the private sector is one of the key steps to transform the results and outputs of basic research into practice.
- It informs about the environment of research infrastructures at the national and international level, identifies established international research infrastructures in which the SR is an observer or member and also indicates prepared ESFRI projects in which the SR is significantly involved.
- It frames the system of assessment, monitoring, management and financing of research infrastructures of the SR and establishes a vision and specific measures for the development of research infrastructure in the next period.

Slovak Space Policy

- Slovakia participates in space activities on an international scale within the framework of the European Union and the European Space Agency.
- Space research and space exploitation represent a cutting-edge area of sophisticated technology development in a variety of industries, including the production of advanced materials, biotechnology, information and communication systems, as well as environmental change monitoring. The SR has rich experience and traditions in space activities.
- From October 13, 2022, **Slovakia is an associate member of ESA**.
- Possibilities of studying in the field of SPACE in Slovakia:
  - Fields of study: astronomy, astrophysics, space physics, physical engineering at FMFI UK in Bratislave, UPJŠ in Košice.
  - At LF TUKE the Aviation and Space Engineering Program is offered.
  - FEI STU offers new Study Program Space engineering.

Thank you for your attention

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