ERA OR HERA? HORIZON EUROPE WITHOUT THE FULL PARTICIPATION OF THE UK? OR HOW BRITISH UNIVERSITIES HELP TO ENHANCE THE QUALITY OF PROJECT PROPOSALS AND THE SUCCESS RATE OF COUNTRIES IN FPS

ERA NEBO HERA? PROGRAM HORIZONT EVROPA BEZ PLNOHODNOTNÉ ÚČASTI UK? ANEB JAK BRITSKÉ UNIVERZITY POMÁHAJÍ ZVYŠOVAT KVALITU PROJEKTOVÝCH NÁVRHŮ A ÚSPĚŠNOST ZEMÍ V RÁMCOVÝCH PROGRAMECH

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Abstract: The paper consists of two parts. The first part of the article concerns a brief description of the current situation regarding the Association of the United Kingdom of Great Britain and Northern Ireland on the Horizon Europe programme. In the second part of the article, it analyzes how British universities help to improve the quality of submitted project proposals and how the cooperation of EU countries with the TOP 15 British universities affects their success rate in the FPs.

Abstrakt: Příspěvek skládá ze dvou částí. První část článku se týká stručného popisu současné situace ohledně asociace Spojeného království Velké Británie a Severního Irska k programu Horizont Evropa. Ve druhé části článku analyzuje, jak britské univerzity pomáhají zvyšovat kvalitu předkládaných projektových návrhů a jak spolupráce zemí EU s TOP 15 britskými univerzitami ovlivňuje jejich úspěšnost v rámcových programech.

INTRODUCTION

Ensuring the participation of the United Kingdom of Great Britain and Northern Ireland (hereinafter, the „UK“) in the Framework Programmes (‚FP‘ or ‚FPs‘) has been the subject of attention since the country voted to leave the EU in 2016 (so-called Brexit). After the British referendum on 23.06.2016, which legitimized the UK‘s withdrawal from the EU, we warned in our journal ECHO [1], in connection with Brexit and the possible restriction of the participation of British institutions in FP Horizon 2020, against the idea that the uni¬versities of Oxford, Cambridge and London (Imperial College of Science, Technology and Medicine) and other British scientific institutions would no longer be part of the ERA (European Research Area), whose existence is significantly supported precisely by the FPs. This idea seemed absurd at the time, especially in connection with the hitherto large and fundamental participation of British institutions in FPs. Our colleague Vladimír Albrecht said at the time that if the participation of research teams from the UK were to be restricted, it would be HERA (Handicapped European Research Area) rather than ERA (European Research Area) [1]. Fortunately, the situation turned out well at that time and the UK was able to continue to participate in the H2020 programme without major restrictions even after Brexit.

Unfortunately, at the time of writing this article (early July 2022), it is still unclear what the participation of this key European country in the ongoing Horizon Europe programme will look like. In 2021, as part of the Brexit deal, the EU and the UK concluded an agreement on the continuation of cooperation under Horizon Europe – the Trade and Cooperation Agreement between the EU and the UK (hereinafter, the „ Agreement“). However, its ratification was halted by political problems relating to the „Northern Ireland Protocol“[1], due to which the European Commission (EC) ultimately refused to ratify the Agreement [2].

At least since autumn 2021, there have been concerns that the British government will give up hope of associating its country with Horizon Europe due to delays on the part of the EC. Of course, even without an Association Agreement, the UK, like any other country in the world, can defray the costs of its participation in Horizon Europe (participation in project consortia, industrial and research partnerships) from its own resources [3]. In this case, the UK would have

the status of a third country and the UK institutions would not have the possibility to coordinate HE programme projects or be host institutions for dealing with ERC grants. A guarantee scheme has been adopted in the UK to cover the costs of UK participants who have received Horizon Europe grants, which are expected to be signed by the end of December 2022. The question remains, however, whether this system of alternative financing would work in practice (author's note: the UK NCP and the delegates of the Horizon Europe Programme Committee are assured during the negotiations that it will) and whether this national financial guarantee would also be extended for the following period [2, 3, 4].

ALTERNATIVE TO HORIZON EUROPE IN THE UK – "PLAN B"

The British government has stated that, if an association agreement with the EU is not reached, it will create its own £15 billion (US$18.7 billion) research programme, which will compete to some extent with Horizon Europe. This alternative to Horizon Europe in the UK has been named 'Plan B'. However, the details of its operation and implementation are not yet entirely clear*. Plan B is supposed to have a greater share of funds available for small and medium-sized enterprises and the implementation of innovative solutions, with the fact that there will be a diversion of research cooperation from the EU. Plan B is seen as an opportunity to strengthen UK research collaboration with India, China and the Asia-Pacific region. An even greater emphasis is placed on scientific research activities with the USA, which is the UK's largest collaborator, and on broader scientific and research ties with Commonwealth countries [2].

THE ATTITUDE OF BRITISH UNIVERSITIES

The document Changes and Choices [5], which was the basis for the creation of Plan B, does not assume that this British alternative would be some kind of copy of the Horizon Europe programme. „If the Government decides not to associate with Horizon Europe because the terms of association do not deliver sufficient benefit to the UK, then we are not convinced that a persuasive case can be made for sizeable levels of public spending on activities that replicate, line by line, EU research and innovation arrangements in the UK." [5]. This fact could cause major problems for some UK universities and departments, as many of them have become dependent on EU funding [2]. For this reason, British universities have called for an urgent solution to the dispute over UK's access to the EU research and innovation programme Horizon Europe. Representatives of British universities also expressed concern that researchers from the EU would not involve British scientists in their projects [6]. Non-participation in the FP is also perceived as a big obstacle to the attractiveness of the UK as a destination for researchers [7]. A large number of British scientists fear that this situation would mean their real exclusion from the Horizon Europe programme.

THE STICK TO SCIENCE CAMPAIGN

In response to this unhappy state and the delayed development of association agreements with Switzerland and the UK, an initiative was created, or the Stick to Science campaign of the European research community (more than 5,600 major research funders/carriers, umbrella organisations, individual researchers, entrepreneurs and innovators), that calls for open and barrier-free collaboration between European research and innovation actors. The initiative aims for an accelerated association of Switzerland and the UK to FP Horizon Europe, which is held back by political barriers that have nothing to do with science. At the heart of the campaign is the need to address serious global challenges (e.g. mitigating pandemics, the impacts of climate change and addressing food security) through collaboration in science and innovation across geographic boundaries. The signatories of the campaign call on the EU, the UK and Switzerland to speedily conclude association agreements so that both countries can contribute scientifically and financially to the strengthening of the Horizon Europe programme and to a truly open, inclusive and excellence-based European Research Area [8].

DECLINE IN UK PARTICIPATION IN HORIZON EUROPE

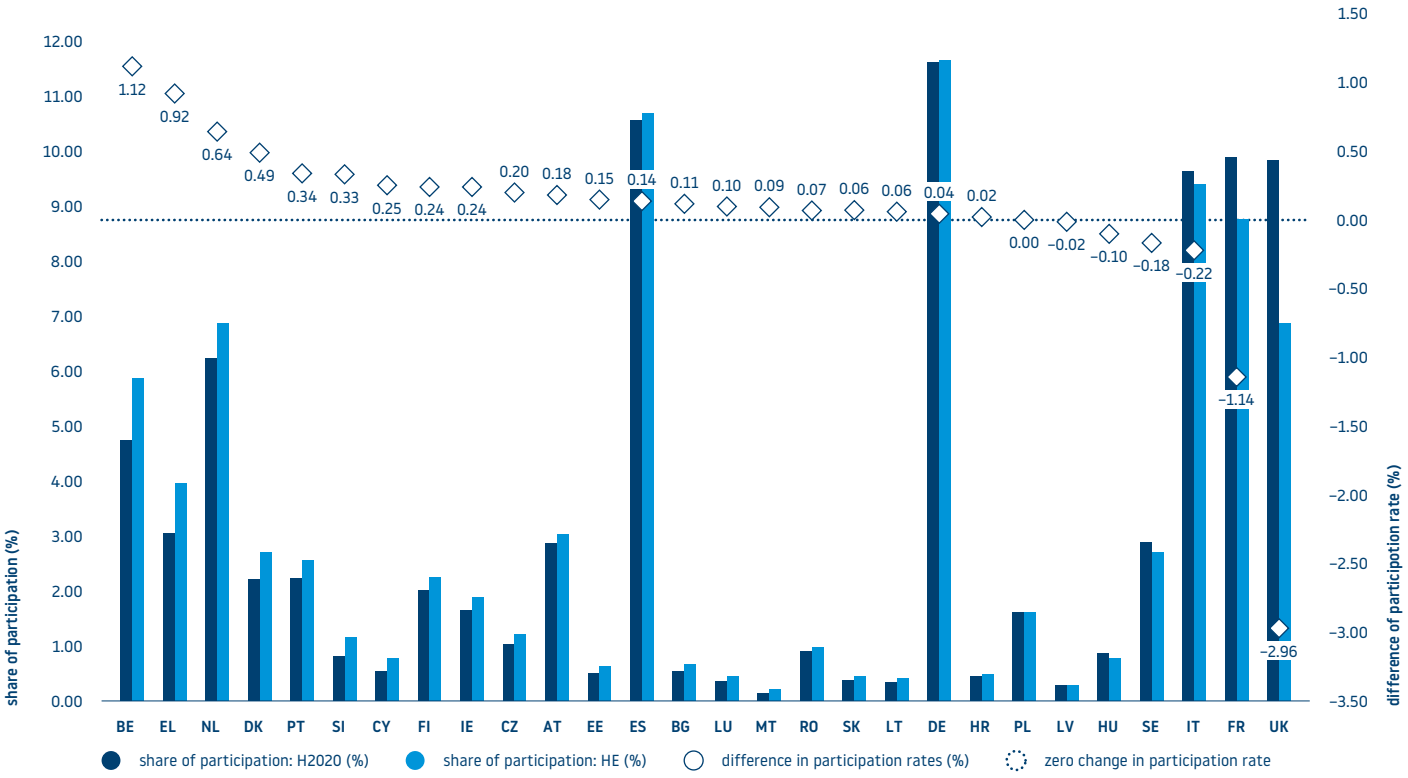
Uncertainty about the UK's association with Horizon Europe is beginning to show with the UK's much smaller participation in the programme. The UK dropped to seventh place among participants in the Horizon Europe programme, while it was third in the previous Horizon 2020 programme [2]. The decrease in the participation of the UK is very clearly visible when comparing the share of individual EU countries in the Horizon 2020 and Horizon Europe programmes. In Horizon Europe, the share of British institutions' participation has fallen the most of all the countries monitored. The difference in the share of participation reached almost 3% for the UK.

Obviously, this decrease in the participation of the UK at the beginning of the HE programme is certainly expected in the light of the above facts, i.e. in the context of the still unresolved relationship between the UK and the ongoing FP. It is clear that this decline in the UK's participation in the FP is not desirable. It is not just that the UK has made a significant scientific and financial contribution to the EU FPs in recent years, as evidenced by a number of analytical documents monitoring participation in FPs. The main point is that the UK is one of the most frequent partners in the implementation of scientific projects for many European countries. Let us recall that for NMS[2], the possibility to cooperate with excellent British institutions in the FP can be considered a "soft" form of spreading excellence. Unlike the Spreading excellence and widening participation in H2020 programme, in which only a small number of NMS institutions could participate, this soft form of spreading excellence is accessible to thousands of NMS teams and institutions [9].

TOP 15 BRITISH UNIVERSITIES

FPs are the world's largest programmes focused on international cooperation in research and innovation. These programmes offer a range of opportunities for research institutions and scientific teams from less performing countries to collaborate with scientific teams and workplaces from globally important European institutions. An evergreen of political and professional debates in recent years has been the expansion of the participation of new Member States (NMS) in FPs, whose presence in the FPs is still found to be insufficient or even low – e.g. [12]. One way in which this problem can be partially solved is to increase the success rate of research institutions and scientific teams from NMS (and more broadly from the so-called "Widening"[3] countries) by increasing the quality of the project proposals they themselves submit or participate in. This can be achieved by cooperating with top excellent teams from the so-called TOP institutions. This set of problems has been analysed in detail in previous years – e.g. [9, 13]. A number of British universities undoubtedly belong among the world's leading European institutions. The lower involvement of excellent British institutions (universities) in FPs for the above reasons can also affect the participation and success rate of research institutions and scientific teams from many other European countries. A low success rate (the 'Success rate trap') of project proposals was analysed as one of the motivational barriers when submitting project proposals to FPs, especially in the case of NMS [12].

FIGURE 1: SHARE OF EU AND UK PARTICIPATION IN THE HORIZON 2020 AND HORIZON EUROPE PROGRAMMES



Note: The share of participation of a given country in both FPs is calculated as the proportion of participation of the given country in the given FP, to all participations in the FP. A country's share of FP participation is represented in a bar figure. The dot plot expresses the difference of shares in both FPs.
Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

Thus, in connection with the possible and increasingly real limitation of the participation of research institutions from the UK, we want to analyze in this paper the benefits of cooperation with teams from the "TOP 15" British universities (TOP 15 HES UK), i.e. those that received the highest financial support from the European Commission for the solution of projects of the H2020 programme (according to data from the e-Corda database from May 2022 [10]). We define the most successful British universities in the H2020 programme – the so-called TOP 15 HES UK – as the universities from the UK that claimed the highest financial support from the H2020 programme budget in the H2020 programme compared to other UK universities. A list of these universities is given in Table 1. There can be no doubt that these are important research institutions or universities from the point of view of the UK, Europe and the world. With the exception of the University of Exeter, all of these universities are among the TOP 100 universities in the world according to the QS[4] World University Rankings 2022. The fact that they are important institutions also in the context of the FP can also be inferred from the achieved participation indicators achieved by these institutions in Horizon 2020. The TOP 15 HES UK participate in projects in the H2020 programme, the total cost of which represents 20% of all total costs incurred in solving all projects of this FP. The participation of these prestigious British universities reaches 35% of the participation of all institutions and research teams from the UK and 45% of the financial support claimed by the investigators of the H2020 programme projects from the UK. It should not be overlooked that at these universities, as host institutions, more than 1,000 ERC grant investigators, i.e. 13% of all ERC grant investigators in Horizon 2020, have found the conditions for their cutting-edge research. The Universities of Oxford and Cambridge have long been perceived by the public as a standard of scientific quality and research excellence.

TABLE 1: TOP 15 UK UNIVERSITIES IN THE H2020 PROGRAMME (TOP 15 HES UK)

H2020 TOP 15 HES UK	H2020 EC Contribution (€)	H2020 Participations
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	484 932 574,34	748
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	522 352 980,71	720
UNIVERSITY COLLEGE LONDON	415 276 398,44	653
IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	323 889 441,57	547
THE UNIVERSITY OF EDINBURGH	272 336 953,42	406
THE UNIVERSITY OF MANCHESTER	216 336 427,58	354
THE UNIVERSITY OF BIRMINGHAM	147 561 290,67	328
UNIVERSITY OF BRISTOL	167 563 211,52	295
UNIVERSITY OF LEEDS	137 579 589,56	290
THE UNIVERSITY OF SHEFFIELD	119 782 548,05	250
KING'S COLLEGE LONDON	168 604 897,35	246
UNIVERSITY OF GLASGOW	131 792 826,16	227
THE UNIVERSITY OF EXETER	124 558 878,92	210
THE UNIVERSITY OF WARWICK	115 324 463,34	201
UNIVERSITY OF SOUTHAMPTON	128 432 479,95	200

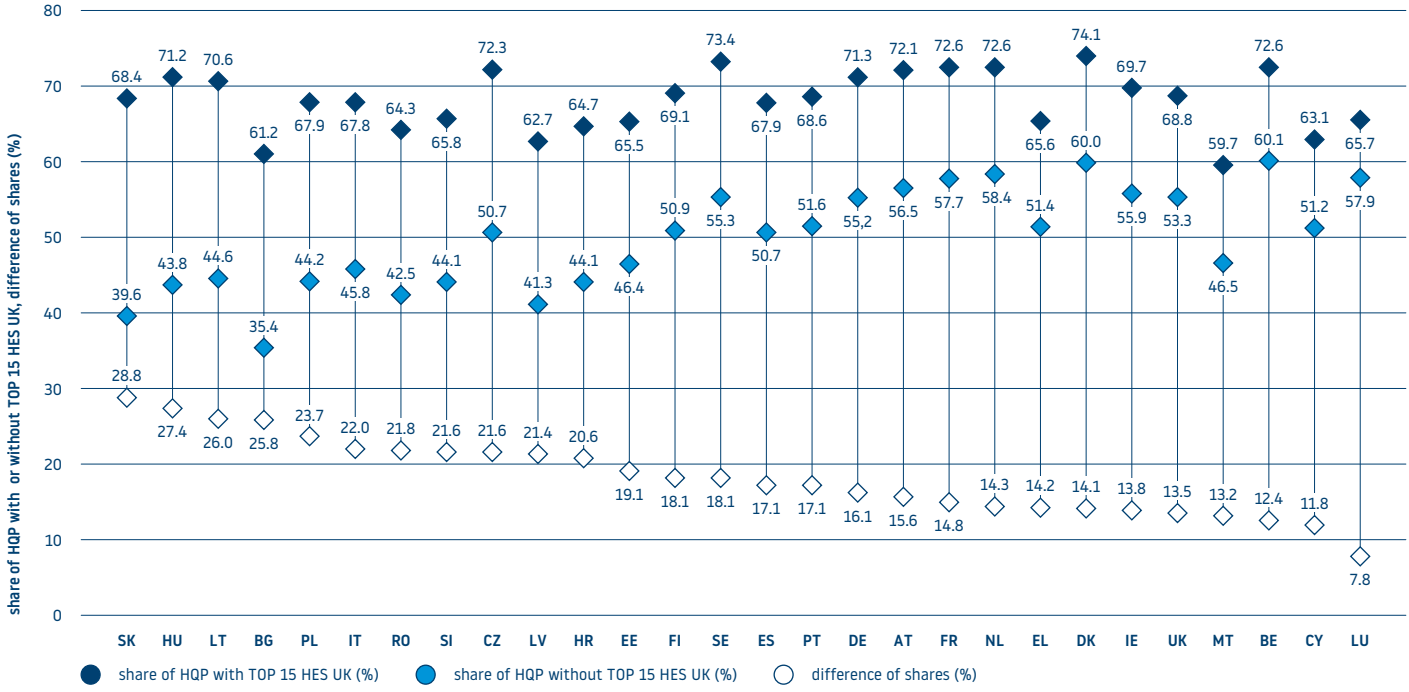
Note: For the purposes of this article, the TOP15 HES UK universities belong to the group that claimed the highest financial support from the H2020 budget in the H2020 programme compared to other British universities. Only data for beneficiaries of Horizon 2020 funds are included in the table.
Data source: H2020 e-CORDA 05/2022 [10], own data processing

COOPERATION WITH TOP 15 BRITISH UNIVERSITIES INCREASES THE QUALITY OF PROJECT PROPOSALS AND THE SUCCESS RATE OF EU STATES IN FPS

The preparation of project proposals in cooperation with TOP 15 HES UK significantly increases their chances of implementation and obtaining a contribution from the FP budget. It is obvious that, regardless of which EU member country is concerned, project proposals prepared in cooperation with TOP 15 HES UK significantly increase their quality. The highest increase in the quality of project proposals, i.e. the largest increase in the share of high-quality project proposals (HQP)[5] submitted to the Horizon 2020 programme in cooperation with TOP 15 HES UK is manifested in NMS. For 11 of them, this increase in the proportion of HQPs created in consortia of which at least one of the UK's excellent universities is a member is between 20 and 30%.

ject proposals in the Horizon 2020 and Horizon Europe programmes are recorded. For instance, the Czech Republic had a success rate of 21.2% for project proposals prepared in cooperation with TOP 15 HES UK and only 14.9% for those without cooperation with TOP 15 HES UK The ratio of these success rates is 1.4. It can therefore be said that the success rate of project proposals in the Horizon 2020 programme with the participation of Czech research teams was 40% better when Czech researchers cooperated with TOP 15 HES UK than when project proposals were produced without these top institutions. The success rate ratios of project proposals are calculated in Table 2, as already mentioned, for two FPs – the Horizon 2020 programme and the Horizon Europe programme and for all EU countries, including the UK, which was considered an EU member state until the end of the H2020 programme. The overall view of the groups of EU-15 and EU-13 states indicates that a more significant difference between the success rates of project proposals in cooperation with or without TOP institutions was manifested in both monitored FPs for the EU-13 states, where the difference in success rate was 50%.

FIGURE 2: SHARE OF FULLY ELIGIBLE HIGH QUALITY PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON 2020

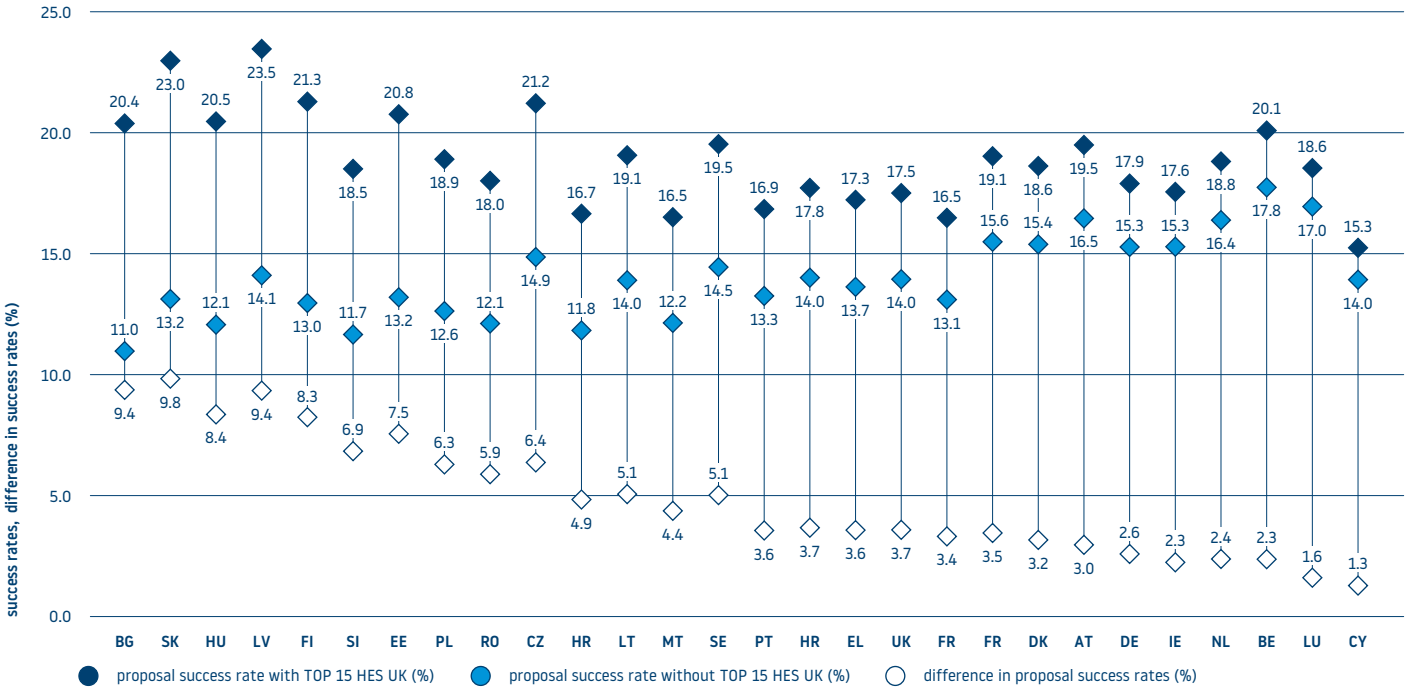


The light blue points show the share of High-quality proposals (HQP)5, which the given EU and UK country achieved without cooperation with TOP 15 HES UK. The dark blue points show the proportion of HQPs that were prepared together with the TOP 15 HES UK teams. The white points represent the difference of HQP shares.
Note: 5High-quality project proposals – (HQP) are fully eligible project proposals that have reached the threshold value in the Peer Review Evaluation process – that is, they have been classified in the "Above threshold" category. The HQP share is calculated as the proportion of fully eligible project proposals classified as "Above threshold" to all fully eligible project proposals.
Data source: H2020 e-CORDA 05/2022 [10], own data processing

Cooperation with the TOP 15 HES UK increases not only the quality of submitted project proposals, but also of course their success rate. Figures 3 and 4 present the success rates of project proposals6 of EU states in the Horizon 2020 and Horizon Europe programmes achieved in cooperation with TOP 15 HES UK and without cooperation with these excellent research institutions. In analogy to the previous case, it is clear that the presence of leading British universities increases the success rate of project proposals for almost all EU countries. The order of the states in the graphs is not very important in this analysis. More important is the fact that the chance to receive funds from the FP budget increases significantly by tens of percent in almost all EU states when cooperating with TOP 15 HES UK. A more accurate assessment of the importance of cooperating with the TOP 15 HES UK universities is offered in Table 2, in which the success rates of pro-

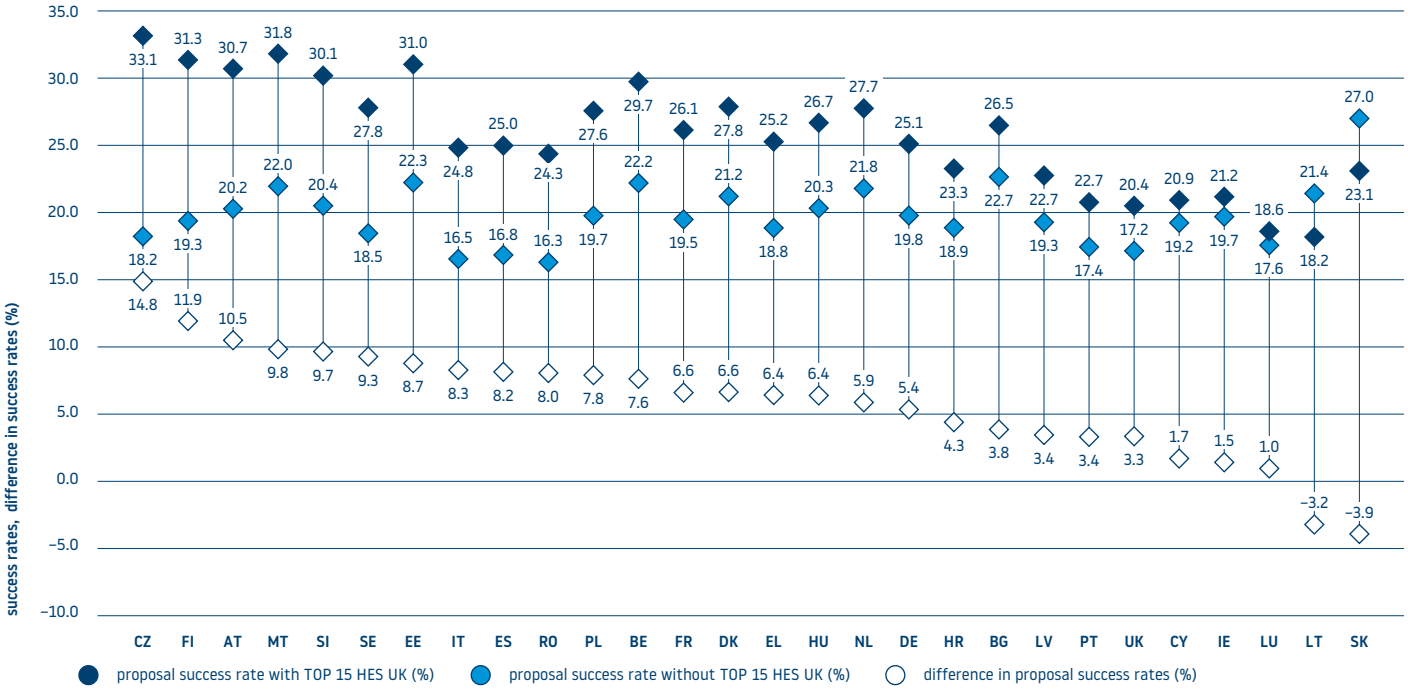
The balance of success rates of project proposals for the EU-15 and EU-13 states is provided with an even greater degree of precision in Table 3, where we analyze the overall success rate of the project proposals of the EU-15 and EU-13 states in cases where the project proposals were prepared with or without TOP 15 HES UK in the three basic pillars of the Horizon 2020 programme. Here, too, it can be seen that cooperation with excellent research institutions is very beneficial for the EU-13 states, and moreover increases their success in FPs more than for the EU-15 states. On the other hand, it should be mentioned that research teams from EU-15 countries cooperate with TOP 15 HES UK more often than research institutions from EU-13 countries.

FIGURE 3: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON 2020 IN EU AND UK COUNTRIES



The dark blue points represent the success rate of project proposals prepared in cooperation with TOP 15 HES UK, and the light blue points pertain to proposals prepared without TOP 15 HES UK. The white points represent the difference in project success. rates.
Note: [6] the success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state.
Data source: H2020 e-CORDA 05/2022 [10], own data processing

FIGURE 4: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON EUROPE 2020 IN EU COUNTRIES AND IN UK



The dark blue points represent the success rate of project proposals prepared in cooperation with TOP 15 HES UK, and the light blue points pertain to proposals prepared without TOP 15 HES UK. The white points represent the difference in project success. rates.
Note: [6] the success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state.
Data source: H2020 e-CORDA 05/2022 [11], own data processing

TABLE 2: INCREASING THE SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH THE TOP 15 HES UK IN THE HORIZON 2020 AND HORIZON EUROPE PROGRAMMES IN EU COUNTRIES AND IN UK

country	status	increasing of proposal success rate in H2020	increasing of proposal success rate in HE	country	status	increasing of proposal success rate in H2020	increasing of proposal success rate in HE
FI	EU-15	1,6	1,6	CZ	EU-13	1,4	1,8
IT	EU-15	1,4	1,5	SI	EU-13	1,6	1,5
SE	EU-15	1,3	1,5	BG	EU-13	1,9	1,2
ES	EU-15	1,3	1,5	HU	EU-13	1,7	1,3
AT	EU-15	1,2	1,5	RO	EU-13	1,5	1,5
EL	EU-15	1,3	1,3	EE	EU-13	1,6	1,4
FR	EU-15	1,2	1,3	PL	EU-13	1,5	1,4
DK	EU-15	1,2	1,3	LV	EU-13	1,7	1,2
BE	EU-15	1,1	1,3	MT	EU-13	1,4	1,4
PT	EU-15	1,3	1,2	SK	EU-13	1,7	0,9
UK*	EU-15	1,3	1,2	HR	EU-13	1,3	1,2
DE	EU-15	1,2	1,3	LT	EU-13	1,4	0,8
NL	EU-15	1,1	1,3	CY	EU-13	1,1	1,1
IE	EU-15	1,1	1,1	**OVERALL INCREASING**	**EU-15**	**1,4**	**1,3**
LU	EU-15	1,1	1,1		**EU-13**	**1,5**	**1,5**
					EU	**1,5**	**1,3**

The increase in the success rate of project proposals prepared in cooperation with TOP HES UK is calculated as a share of the success rate of project proposals prepared in cooperation with TOP 15 HES UK and without TOP 15 HES UK in the Horizon H2020 programme or the Horizon Europe programme.
Note: *The UK was considered an EU member state until the end of the Horizon 2020 programme; for more details – see the notes at the end of the text of the article.
Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

TABLE 3: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK, SUMMARY INCREASE OF THE SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK IN THE THREE MAIN PILLARS OF THE HORIZON 2020 PROGRAMME IN THE GROUPS OF EU-13 STATES (NMS) AND EU-15 STATES (OMS).

EU-13 (NMS) H2020 Pillar	**proposal success rate with TOP 15 HES UK (%)**	**proposal success rate without TOP 15 HES UK (%)**	difference in proposal success rates (%)	**increasing of proposal success rate in H2020**	share of project proposals with TOP 15 HES UK (%)
Excellent Science	**13,4**	**10,1**	3,3	**1,3**	16,8
Industrial Leadership	**17,7**	**10,8**	6,9	**1,6**	7,5
Societal Challenges	**18,7**	**12,1**	6,6	**1,5**	10,6

EU-15 (OMS) H2020 Pillar	**proposal success rate with TOP 15 HES UK (%)**	**proposal success rate without TOP 15 HES UK (%)**	difference in proposal success rates (%)	**increasing of proposal success rate in H2020**	share of project proposals with TOP 15 HES UK (%)
Excellent Science	**15,6**	**13,6**	2,0	**1,1**	29,2
Industrial Leadership	**21,5**	**17,2**	4,3	**1,2**	12,7
Societal Challenges	**23,7**	**18,2**	5,5	**1,3**	16,2

The increase in the success rate of project proposals prepared in cooperation with TOP HES UK is calculated as a share of the success rate of project proposals prepared in cooperation with TOP 15 HES UK and without TOP 15 HES UK in the three main pillars of the Horizon H2020 programme for the EU-15 and EU-13 groups of states.
Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

CONCLUSION

We have shown that there is a relatively small group of top UK universities participating in projects that are allocated 1/5 of the costs of all Horizon 2020 projects. Project proposals prepared in cooperation with these excellent British universities increase the success rate of almost all EU countries. The increase in the success rate and quality of project proposals is particularly evident in the NMS, which is key for these countries, because it is precisely in the context of the NMS that the low success rate of project proposals is often mentioned as a significant barrier to the expansion of their participation in international research and cooperation programmes such as FPs. Needless to say, preparing project proposals in cooperation with TOP 15 HES UK really pays off, as it reduces the cost of preparation invested in projects that do not pass the rigorous expert evaluation introduced in the FP. For these reasons at least, it seems important to keep British universities and other institutions in a dignified mode for participation in FPs. At the moment (early July 2022), however, there are still warning signs that the disagreements over the post-Brexit setting of scientific cooperation between the EU and the British government will not be transformed into the desired association agreement, which would

guarantee the British institutions a further significant role in the Horizon Europe programme and sufficient funds to implement the research plans. Although it is not just about funding in relation to FPs, this issue is at stake because, as it turns out, the release of British national resources to a sufficient extent, which should have been used in the joint Horizon Europe programme or in an alternative scheme, such as the so-called 'Plan B', is at risk due to internal political disputes and problems. Moreover, national funds can hardly be compared to those raised by British institutions from the FPs budget [14].

The professional public considers Horizon Europe to be the largest international science funding programme in the world, bringing together researchers from industry and academia, and its projects range from fundamental research to solving problems such as combating climate change and trying to find cures for debilitating diseases [6]. On the contrary, the direction of British grant support leads to purposeful utilitarianism, with research funding in the UK increasingly moving away from fundamental research towards applied research, which raises serious concerns for many British scientists.

Years ago, our colleague Vladimír Albrecht asked himself: "Isn't the 'European added value' of FPs due precisely to the fact that European institutions (including the Czech ones, of course) can cooperate with globally important British institutions without cumbersome bilateral negotiations?" The answer is, unequivocally yes! While there is a tendency in the UK to bet on non-European global research cooperation outside Horizon Europe, this will be extremely difficult as non-European actors also intend to participate in Horizon Europe. "Horizon is where the party's at," says Martin Smith, head of the policy lab at Wellcome, a biomedical-research funder in London. "To try and build something independently of that will be extremely difficult." [7]. Although growing fears constantly persist that the UK will not fully participate in the Horizon Europe programme, we would like to express the hope that the UK's efforts for European cooperation in the field of research and innovation will continue and that the willingness to recruit British partners to the solving consortia of European projects will not be significantly impaired.

NOTES

[1] The "Protocol on Ireland and Northern Ireland" problem: The UK government and the European Commission continue to disagree on how to approach, economically and politically, the border between Northern Ireland and the Republic of Ireland, which is part of the EU.

[2] **EU-15: old member states (OMS)**, i.e. states that formed the EU until 30.04.2004, **EU-13**: new **member states (NMS)** – EU states that joined the EU on 30.04.2004 and later The United Kingdom of Great Britain and Northern Ireland – UK became a third country on 1 February 2020 under the EU-UK Withdrawal Agreement, which declared that UK-domiciled legal entities continued to be fully eligible to participation and fund raising from the Horizon 2020 programme until its end in 2020. For this reason, the UK is considered an EU Member State in the e-CORDA database for Horizon 2020 and is reported as such in all statistical surveys.

[3] **Widening countries** – in Horizon Europe, "widening countries" are defined as countries with a low intensity of R&I. These are: Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, and Slovenia, countries associated to Horizon Europe which are Albania, Armenia, Bosnia and Herzegovina, Faeroe Islands, Georgia, Kosovo, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Tunisia, Turkey, Ukraine, and EU outermost regions - Guadeloupe, French Guiana, Martinique, Réunion, Mayotte Saint-Martin, The Azores, Madeira, Canary Islands.

[4] **QS World University Rankings** – The QS World University Rankings is a university ranking in which universities are ranked in six categories (or indicators) that effectively capture university performance. In more detail: *https://www.topuniversities.com/qs-world-university-rankings/methodology*

[5] **High quality project proposals** – (HQP) are fully eligible project proposals that have reached the threshold value in the Peer Review Evaluation process – that is, they have been classified in the "Above threshold" category. The HQP share is calculated as the proportion of fully eligible project proposals classified as "Above threshold" to all fully eligible project proposals.

[6] The success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state. The Full Eligible Project Proposal: is a project proposal with a completed evaluation process that has demonstrated formal correctness (eligibility) according to the H2020 (HE) rules and has passed the entire evaluation process, i.e. the process of expert assessment of its quality (peer review evaluation).

* **Author's note:** At the end of July 2022, the UK has released long-awaited details of its „Plan B" alternative to Horizon Europe, including a rival to the European Research Council (ERC) and continued support for its researchers to join Horizon consortia. The most significant pledge is a promise to fund all UK participants in Horizon Europe consortia where grant agreements are signed before 31 March 2025. Even if the UK isn't associated to Horizon Europe, UK researchers can still join these consortia if they bring their own money, although they can't coordinate them. So this should enable UK researchers to join around two thirds of Horizon calls, even if association doesn't happen [15]. However, despite all the plans, nothing is certain due to the unstable political situation in the UK. On the contrary, it is almost certain that refusing to associate the UK with Horizon Europe would be a mistake. Without the UK's full association, Horizon Europe may become less competitive, which could impact on the excellence and prestige of EU grants.

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