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Abstract

In 2022, citing the erosion of transparency and academic freedom in Hungary, the Council of the European Union suspended research related EU funding and exchange programmes to Hungarian universities run by newly established public interest trusts. There has been unceasing debate between the EU and Hungary since then, while the recent initial hearings of the universities' appeals in the Court of Justice of the European Union suggest that lasting suspension will be the outcome. Here we summarize a comprehensive survey that reveals a troubling landscape for the Hungarian academic and research communities as a consequence of the ban. Particularly alarming is the pronounced impact on early career researchers, not just from institutions directly affected by the suspension but, strikingly, from those still eligible for funding. The findings of the survey underscore a pervasive uncertainty among non-Hungarian EU consortia leaders about whether to engage with Hungarian universities and research institutes at all. This climate of doubt may well result in detrimental effects on the international stature of Hungarian research, hinting at long-lasting impediments to the country's scientific competitiveness on the European stage.

Context and Research Design

On 15 December 2022, based upon the proposal of the European Commission, the Council of the European Union decided that “*no legal commitments shall be entered into with any public interest trust established on the basis of the Hungarian Act IX of 2021 or any entity maintained by such a public interest trust*” established in Hungary in 2021 to manage 21 universities (1). A major concern behind the suspension and the related political debate is the fear that the transformation of these previously public universities represented a reduction in their transparency and an erosion of academic freedom in the country (2, 3). At the time of writing, the Commission and Hungary have been unable to agree on a resolution of this issue, despite the fact that until it is resolved, internationally competitive scholars will remain ineligible to receive EU grants. Furthermore, the hearings of the appeals of six universities began at the Court of Justice of the European Union in April 2024, and these may well result in prolonged legal battles (4). Here we intend to demonstrate that the suspension and the ongoing debate has had and will continue to have a strong negative impact on the Hungarian early career academic community.

As a direct consequence of the suspension, students and employees of affected universities cannot receive financial support from most European collaborative grants. Due to the lack of appropriate communication, many researchers were also excluded from European projects (5). This unique situation has a direct impact on most of Hungarian academia, a community which – similarly to its counterparts in other EU accession countries – relies extensively on collaboration with EU partners and EU funding (6,7). Moreover, the suspension could ruin the overall reputation of Hungarian science and lower the participation rate of all Hungarian researchers in European projects. This was seen as being particularly likely to affect early career researchers, as international co-operation is of critical importance regarding their future opportunities (8).

To understand the impact of the ban on early career scientists, a survey was conducted in the 45-year-old or younger cohort of researchers and university affiliates, out of which this analysis focuses on the 31-45 years old cohort holding a PhD. The survey was performed in collaboration with the Hungarian Young Academy from 22 January to 14 February 2024, that is, more than one year after the suspension had entered into force. The HUN-REN Centre for Social Sciences served as institutional host and conducted the ethical review of the survey in advance (approval number: 1-FOIG/18-3/2024). In the following, we will analyse the responses of 524 individuals between the ages of 31 to 45 years who have a PhD, representing 15.06 percent of our target population. These observations are weighted by the distribution of age, gender, and discipline of the Hungarian Academy of Sciences cohort investigated.

Results

We have found that around 40 percent of Hungarian early career researchers have experienced the negative consequences of the EU funds' suspension (Table 1). As one might expect, the exclusion from application opportunities has hit those researchers more heavily who submitted EU grant proposals prior to the suspension. At the same time, the difference between those who have affiliations at suspended universities only and those who have at least a part-time affiliation elsewhere is much smaller and less significant (Table 1). These results, in fact, suggest that besides its direct impact on suspended universities, the ban has had an indirect impact on universities and research institutes that have not been officially excluded.

Table 1. Negative experience of early career Hungarian researchers related to the exclusion, by affiliation and with earlier applications to EU funds. Percentage of respondents.

		Number of respondents	Negative impact	Significance
Submitted at least one EU grant proposal in the past three years.	yes	249	54.3 %	$Chi^2 (1, 524) = 42.977$ $p = 0.000$
	no	275	26.1 %	
Works only for a suspended university.	yes	203	46.4 %	$Chi^2 (1, 524) = 6.415$ $p = 0.011$
	no	321	35.1 %	
Total		524	39.5 %	

A pair of personal experiences offered by the respondents confirms these findings. *“Although the university is state maintained, we, as Hungarian researchers, are poorly regarded abroad. People tend to generalize”*, noted a male chemist in the 31-35 age group who works at a university that is not excluded from the EU funds. International collaborators and their agencies might find it uncertain to write a proposal with Hungarian researchers even if the universities of the latter are actually eligible for such funds. *“Partners in several countries have indicated that their national education ministries have ‘spoken’ to the leadership of certain faculties advising against cooperation with Hungarian universities”*, observed a male mathematician in the 36-40 age group who works at a public university eligible for funds.

To better grasp the extent of the negative impact, we requested respondents to check specific effects on a list, such as exclusion from ongoing projects or from planned consortia (the original questionnaire items are presented in Table S2). Direct questions aimed to identify whether the respondent experienced a given negative consequence of the suspension related to a project at a banned university or to a project elsewhere. We also asked general questions about the long-term impact and effect on communication with international partners. The ratio of respondents experiencing these negative impacts is given according to previous application activity and affiliation at banned-versus-eligible universities or research institutes (Fig. 1).

Almost 9 percent of respondents active in EU grant applications reported that international partners wanted to exclude them from already running consortia even though their institution was not de jure affected by the suspension, but then these researchers were able to convince their partners that exclusion from the consortium was not necessary. However, in the complete sample, 2 percent of respondents who work for institutions not suspended were excluded from projects for which international grants had already been awarded, while the ratio of researchers excluded from running projects due to the suspension of their university was 5 percent. A similar situation can be observed in terms of planned projects, with the difference that exclusion rates are higher. Around 4 percent of respondents were excluded from applications even though their institutes were not subject to the exclusion, while the ratio of excluded researchers at suspended universities was 10 percent.

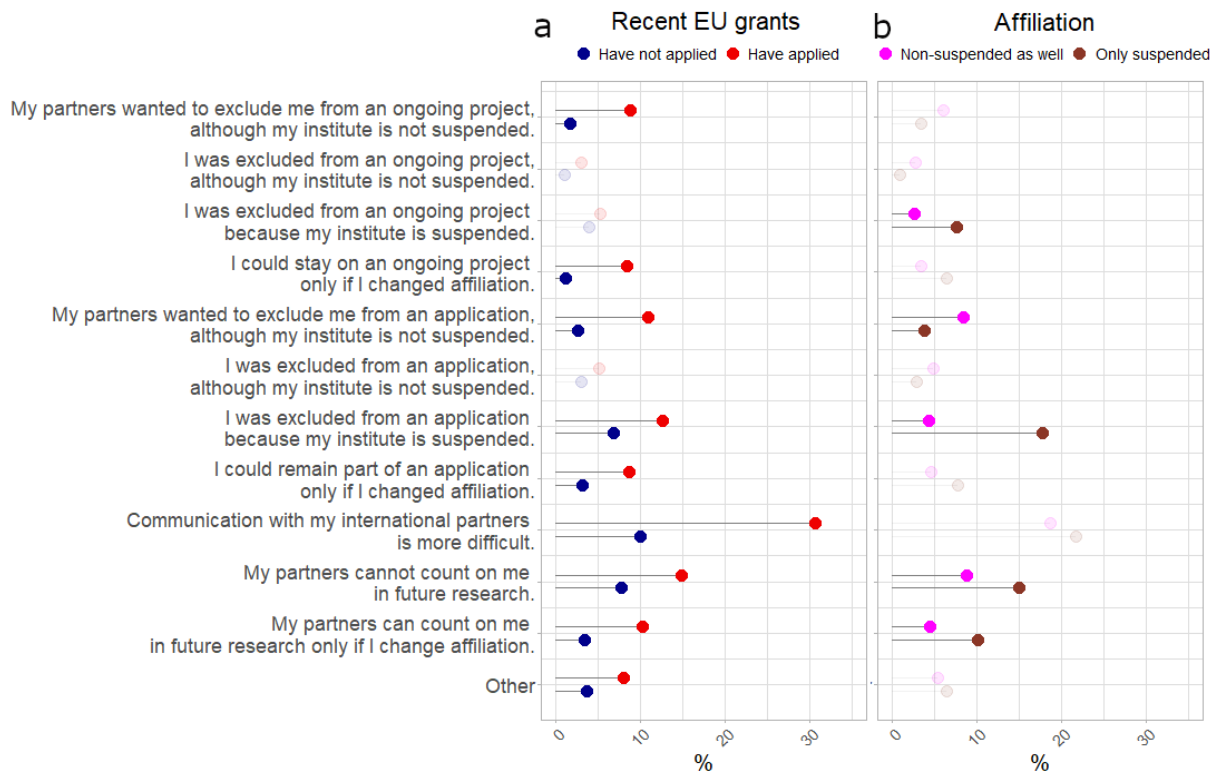


Fig1. Impact of exclusion from EU research funds on Hungarian early career researchers. Percentages of respondents broken down into researchers who have or have not submitted a European Union funded grant proposal in the past 3 years (a), and into researchers who have an affiliation only at an excluded university or at non-excluded institutions (as well) (b). Transparent markers denote that the given values are not significantly different in the various categories ($p \geq 0.05$). χ^2 and p values are presented in Table S1.

In order to stay in a collaboration, consortium leaders often ask Hungarian researchers to move their projects to another affiliation – if available – one that is not suspended, or simply to change jobs. However, 20 percent of the respondents reported that communication with international partners had become more difficult. This tendency is stronger for respondents who have applied for EU grants in the past 3 years (31%) but does not differ between those working only at restricted universities and those who have at least one other affiliation as well.

The uncertainties of including Hungarian partners may well have a long-term effect on Hungarian science as a whole. “We are currently consortium partners in a HORIZON EU project. During a personal meeting, the consortium leader expressed to me their doubts about whether they can count on me for future research”, lamented a female researcher in earth sciences in the 36-40 age group who works for a university not suspended. 15 percent of respondents at suspended universities report informal signals from foreign colleagues and partners concerning the difficulties in the former counting on them in future projects, while this ratio is almost 9 percent for those researchers who have at least a part-time job in non-suspended institutions in Hungary. The risks of having Hungarian researchers on board are increasing in Europe, and are manifest not only in Erasmus or Horizon programmes but can impact other EU-based grants as well. According to a male biologist in the 36-40 age group, “In cases involving EU funds not affected by the suspension (various Interreg schemes), they are still hesitant to apply with us because they have received informal signals from their national funders that having a Hungarian partner could be a disadvantage during the evaluation process.”

Summary

The long-term impact on Hungarian academic life caused by the suspension of universities from the Erasmus and Horizon programmes is difficult to predict. The Hungarian government has launched national programmes to compensate for the loss of EU grants (9). In parallel, there have been recent demonstrations at state-run universities that are not suspended, where faculty staff deem wages unacceptable and unsustainable (10,11). At the same time, our data clearly indicate that early career researchers have realized that the restrictions will not only mean limited access to funding, but also the weakening of their research networks, the isolation of the Hungarian scientific community, and reduced training opportunities – all of which are seen as essential for maintaining competitiveness and high-quality research. To mitigate these negative effects, 16 percent of respondents have already considered changing their affiliation or seeking additional affiliations within Hungary while 25 percent of them have already started or are planning to start looking for jobs abroad. Consequently, the country might lose those researchers who have been active in integrating Hungarian science into European networks (12).

Taken together, these findings highlight that the international reputation of Hungarian science has been dealt a body-blow by the suspension. The exclusion of Hungarian researchers and professors from Erasmus and Horizon funding may have a wider impact than the suspension itself suggests: although not all universities have been shut out from these programs, the measure seems to have sent serious shock waves through the entire research and innovation ecosystem in Hungary.

The previous exclusion of universities in the United Kingdom from the Horizon programme and their successful reintegration subsequently (13,14) gives us hope that the present situation may come to an end and the destructive effect on Hungarian science can still be minimized. Certainly, maintaining a dialogue between the parties involved to resolve the situation is urgent, but in the meantime, the voice of the international scientific community could be of extreme importance in demanding the reintegration of the representatives of Hungarian science (15,16). Such a reintegration would be a boon to the European Research Area and enhance the competitiveness of European research on the global scale as well (17,18).

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Appendix

Legal background

The legal basis for the Decision is *Regulation (EU, EURATOM) 2020/2092 on a general regime of conditionality for the protection of the Union budget* (hereinafter: Regulation). According to Article 2 of the Decision, 55% of the budgetary commitments approved under i) the Environmental and Energy Efficiency Operational Programme Plus; ii) the Integrated Transport Operational Programme Plus; and iii) Territorial and Settlement Development Operational Programme Plus apply to them. In particular, the second part of the Article cited underlines that *“no legal commitments shall be entered into with any public interest trust established on the basis of Hungarian Act IX of 2021 or any entity maintained by such a public interest trust”* with immediate effect. Hungarian Act IX of 2021 established public interest trusts, mostly for the management of universities. Appendix I of Hungarian Act IX of 2021 lists 21 universities (by name) which shall be managed by public interest trusts. Therefore, upon Article 2 of the Decision, no legal commitments shall be entered into between the budget of the European Union and the 21 public interest trust-based universities affected. Pursuant to Paragraph 65 of the Preamble to the Decision, the Commission shall continue monitoring the situation in Hungary, and in the case of any development in the implementation of the remedial measures proposed by Hungary, they shall be swiftly assessed by the European Commission. Upon a positive assessment, the European Commission shall submit to the Council without delay the necessary proposals for the lifting of the measures under Article 7 of Regulation (EU, Euratom) 2020/2092 provided that the conditions for their adoption are no longer sustained.

Table S1. Significance tests

		Significance by recent EU grants	Significance by affiliation
1	My partners wanted to exclude me from an ongoing project, although my institute is not restricted.	$Chi^2(1, 524) = 13.166, p = .000$	$Chi^2(1, 524) = 1.970, p = .160$
2	I was excluded from an ongoing project, although my institute is not restricted.	$Chi^2(1, 524) = 2.066, p = .151$	$Chi^2(1, 524) = 2.001, p = .157$
3	I was excluded from an ongoing project because my institute is restricted.	$Chi^2(1, 524) = .446, p = .504$	$Chi^2(1, 524) = 5.983, p = .014$
4	I could stay in an ongoing project only if I changed affiliation.	$Chi^2(1, 524) = 16.047, p = .000$	$Chi^2(1, 524) = 2.522, p = .112$
5	My partners wanted to exclude me from an application, although my institute is not restricted.	$Chi^2(1, 524) = 13.198, p = .000$	$Chi^2(1, 524) = 4.076, p = .043$
6	I was excluded from an application, although my institute is not restricted.	$Chi^2(1, 524) = 1.792, p = .181$	$Chi^2(1, 524) = 1.273, p = .259$
7	I was excluded from an application because my institute is restricted.	$Chi^2(1, 524) = 4.648, p = .031$	$Chi^2(1, 524) = 25.764, p = .000$
8	I could stay in an application only if I changed affiliation.	$Chi^2(1, 524) = 7.201, p = .007$	$Chi^2(1, 524) = 2.301, p = .129$
9	Communication with my international partners is more difficult.	$Chi^2(1, 524) = 36.053, p = .000$	$Chi^2(1, 524) = .696, p = .404$
10	My partners cannot count on me in future research.	$Chi^2(1, 524) = 6.849, p = .009$	$Chi^2(1, 524) = 4.633, p = .031$
11	My partners can count on me in future research only if I change affiliation.	$Chi^2(1, 524) = 10.618, p = .001$	$Chi^2(1, 524) = 7.002, p = .008$
12	Other	$Chi^2(1, 524) = 4.634, p = .031$	$Chi^2(1, 524) = .274, p = .601$

Details of the *Chi-square* tests of Figure 1. Degrees of freedom, number of cases, *Chi-square* values, and *p*-values.

Table S2. The original questionnaire items

1	In the case of a grant that we had won, the partners had already indicated that they could not count on me and wanted to exclude me because of the situation whereas my institution was not affected by the suspension of funds. I finally managed to make them understand that my institution was not affected by the suspension of funds and the project could go on.
2	In the case of a grant that we had won, the partners had indicated that they could not count on me, and they excluded me because of the situation whereas my institution was not affected by the suspension of funds.
3	In the case of a grant that we had won, the partners had indicated that they could not count on me, and they excluded me because of the situation, as my institution is affected by the suspension of funds.
4	In the case of a grant that we had won, the partners have already indicated that because of the situation they can only count on me if I look for another affiliation/institutional link.
5	In the case of a proposal that we were planning to submit, the partners had already indicated that they could not count on me and wanted to exclude me because of the situation whereas my institution was not affected by the suspension of funds. I finally managed to make them understand that my institution was not affected by the suspension of funds and the project could go on.
6	In the case of a proposal that we were planning to submit, the partners had indicated that they could not count on me, and they excluded me because of the situation whereas my institution was not affected by the suspension of funds.
7	In the case of a proposal that we were planning to submit, the partners have indicated that they cannot count on me and excluded me because of the situation, as my institution is affected by the suspension of funds.
8	In the case of a proposal that I was planning to submit, partners have already indicated that they can only count on me if I look for another affiliation/institutional link.
9	Communication with my international partners is more difficult because of the situation.
10	My informal, loose research networks have indicated that they cannot count on me for future research because of the situation that has arisen.
11	My informal, loose research networks have indicated that because of the situation they can only count on me for future research if I look for another affiliation/institutional link.
12	Other, namely:
