How to Silence Researchers?
Evidence from Illiberal Policies in Hungary *

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Abstract

We explore how contemporary attacks against academic freedom have detrimental effects on innovation, focusing on academic research in Hungary after the election of Viktor Orbán in 2010. Using rich national research repositories and international bibliometric data, we show that academics' trajectories diverge sharply depending on their perceived political alignment towards the government. Academics perceived as politically non-aligned experience a large decrease in their productivity and quality of their work. We explain this loss through the shrinking networks and declining influence of these authors. Targeted academics respond strongly, including by leaving the country and expressing dissent against the government. We show that academics self-censor in their academic work. Finally, individual-level cross-country comparisons allow us to estimate the broader effects of declining academic freedom: Hungarian researchers increasingly reallocate their publication efforts toward lower-ranked national-language journals and are more likely to leave the country altogether.

Keywords: Academia, Hungary, Illiberalism, Innovation, Scientific productivity

JEL codes: I20, I23, J24, N14, O38

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1 Introduction

Since the fall of the Soviet Union, the dominant view in political science was that the liberal democratic model would expand and prevail. One of the contradictions caused by this "end of History" (Fukuyama, 1989) in the West consists in the rising electoral base of far-right parties that question key elements of liberal democracy, from the rule of law to impartiality of the State regarding elections and protections for minorities. In order to describe the type of policies that such parties conduct when they come into power, Zakaria (1997) popularised the term "illiberal democracies", in order to describe regimes that, once in power, restrict civil liberties despite holding free elections.

A defining feature of such regimes is the pressure they exert on both minorities and institutional elites, such as intellectuals, journalists, and members of the judiciary. Academic freedom thus often becomes a primary target in this context. However, a long-standing argument holds that civic liberties and freedom foster scientific research and innovation by protecting the creation and circulation of ideas (Mokyr, 2017, 2018). This paper aims to examine the consequences of illiberal policies and rising political pressure on innovation, with a particular focus on the mechanisms through which academia and researchers are affected.

The last two decades have witnessed the rise of several regimes that have been characterised as "illiberal democracies" or as undergoing democratic backsliding. The term "illiberal", however, partly ceased to function as a pejorative label used by critics in 2014, when it was openly embraced by Viktor Orbán, who served as Prime Minister of Hungary from 2010 until May 2026. The case of Hungary during this period thus represents a quasi-natural experiment that allows us to measure the consequences of political pressure in a contemporary global framework. The Hungarian case matters beyond its borders. Several right-wing and far-right leaders around the world have explicitly presented Orbán's governance as a model. Other governments have implemented restrictions similar to those implemented by Orbán after his election. For instance, in the United States, the second Trump administration has cut funding to universities and research projects on the grounds of misalignment with the political positions of the Republican party. Given the rise of references to Orbán's governance by populist parties in most democracies, from France to Germany, Israel or India, with a discourse directly praising the new Hungarian State, it is crucial to understand its consequences on science.

To understand how the Hungarian governments targeted science, one must distinguish two dimensions of academic freedom. The first is the "freedom to question and test and develop new ideas without undue harassment or interference" (Russell, 2002), i.e., research freedom at the individual level. While speeches from Viktor Orbán and articles by the State-aligned press appear to show such pressures, both for economic reasons and for explicitly political justifications, the law does not directly address this dimension. However, the successive Orbán governments have passed a number of laws that undermine the second aspect of academic freedom, which we define as the right to institutional autonomy for universities. We

study in this paper how both the rising political pressure and the repression against academic institutions have impacted academia in Hungary.

Our analysis is organised around narrower and complementary research questions. First, how does political pressure affect the productivity of researchers targeted by the government? Second, how do researchers respond when targeted by political threats? We draw explicitly on the *Exit, Voice, and Loyalty* framework from Hirschman (1972), adapted to the academic freedom backsliding, in which scholars facing political pressure may choose to adopt different strategies. Finally, what is the overall impact of illiberal policies on innovation, beyond the researchers and fields that are direct political targets?

To answer these questions, we use rich bibliometric data that allow us to measure scientific outcomes for researchers based in Central European countries. Our primary dataset is constructed from national bibliometric repositories from several Central-Eastern European countries, including Hungary, which we harmonise to create a comprehensive dataset representing the universe of scientific publications and researchers across the region. In addition, we rely on OpenAlex, an international, centralised database with detailed information on co-authorship networks and institutional affiliations, which allows us to analyse outcomes that cannot be observed in the national data, in particular international collaborations and researcher mobility. From these two types of sources, we construct a broad author-year level panel dataset dating back to 1990, allowing us to track academic outcomes over several decades.

We address our first research question by studying whether researchers are differentially affected by their perceived political positions, within Hungary. We categorise researchers based on their belonging or closeness to groups with a political alignment perceived as supportive of, neutral toward, or opposed to the illiberal governments, based on pre-2010 information or affiliation of researchers. We find that researchers who are perceived as politically non-aligned experience a significant drop in their total number of publications, as well as in the number of publications they publish in top journals. These findings are consistent between researchers who are perceived as political opponents because they belong to a specific group and those who are perceived as non-aligned researchers because of the topics they work on. We investigate the mechanisms through which this drop in academic productivity might occur. We find suggestive evidence that this productivity decline is not only due to funding cuts, but likely due to the negative impact on researchers' network and a loss of influence. Conversely, researchers that are perceived as supportive of the regime do not experience the same decrease in their productivity. All these effects intensify through the years and successive mandates of Viktor Orbán, suggesting that the stronger the pressure on researchers becomes and the longer it lasts, the higher the consequences on their performance. We show that not only individuals at the core of the non-aligned researchers network are impacted, though the effect fades away when the distance with clearly identified political opponents increases.

Second, we use the *Exit, Voice, and Loyalty* (Hirschman, 1972) framework and demonstrate that politically targeted researchers implement strong behavioural responses to political pressure. They are more likely to leave Hungary and to obtain affiliations abroad. We also analyse the content of publications

in our database and show that these researchers are more likely to "voice" – that is, to publicly express dissent – compared to researchers who are not perceived as political opponents. Finally, we examine research direction by comparing the trajectories of scholars researching politicised subjects, for instance in gender studies. We find evidence of self-censorship behaviour: researchers diverge from their previous research topics without being totally *loyal* to the illiberal government, shifting away from their previous research without clearly adopting the guidelines of the government.

Finally, we compare trends of Hungarian researchers to those in other similarly sized Central-Eastern European countries – specifically, Slovenia and Croatia. Using matching procedures and a difference-in-differences strategy, we compare author-level outcomes across countries. We show that surprisingly, the main conjoined effect of the university reforms and political regression is an increase in the number of publications, but exclusively in Hungarian. In the period from 2010 to 2020, researchers based in Hungary publish 13% more publications per year compared to researchers based in other Central Europe countries. We demonstrate that Hungarian researchers face an isolation phenomenon, characterised by a decoupling between "national" collaborations and "international" collaborations. Additionally, the perceived quality of Hungarian research also appears to suffer as publications in top journals decrease by about 60% at the end of the period. The number of Hungarian co-authors for Hungarian authors also increases compared to the number of Slovenian or Croatian co-authors for Slovenian and Croatian authors. Using this track record, we find that authors identified as working in Hungary prior to 2010 are 1.3 percentage points more likely not to publish in Hungary for several continuous years after 2010. Their publications with international co-authors also fall by over 25%. We believe that these results show that rather than a loss of aggregate productivity, the impact of illiberalism in Hungary is a relative retreat of research into the country itself, from which emigration is the main alternative.

Our work contributes to several parts of the literature. The strand of the literature in economics of innovation closest to this paper consists of recent works that focus on the impact of political shifts on innovation. A first part of this literature especially focuses on the political pressures that are exerted on academics. Acemoglu et al. (2022) show that, through shifts at the head of the university, Communist Party leaders in China exert pressure on universities, significantly changing research direction. Jia et al. (2022) and Aghion et al. (2024) show to what extent respectively US and Chinese academia have been impacted by US sanctions. From a historical perspective, political conflicts have also had a large impact on the academic performance of researchers, for instance due to the First World War (Iaria et al., 2018), the Second World War and the Nazi regime (Waldinger, 2012; Moser et al., 2014; Waldinger, 2016; Becker et al., 2024), and during Mao's Cultural Revolution when researchers were showing their disapproval of the leader's ideological line (Kung and Wang, 2021). Hager et al. (2026) additionally show the importance of academic freedom and democratic institutions in shaping innovation in the long-run. Our paper contributes to this literature in the following ways. First, rather than an authoritarian dictatorship, we focus on a more recently appeared type of repression in the shape of illiberal democracy.

Second, we attempt to extend the analysis of innovation costs of political repression from a small treated group to the entire population of researchers within a country. One work closely related to ours is the one of Rohner et al. (2026), who find that economists strongly respond to the political threats on funding after the publication by the U.S. government of a list of undesirable words in 2025. Our analysis explores the effects of illiberalism over a longer time horizon and across a wider set of domains. Additionally, our work also gives an empirical application of the Hirschman (1972) framework in a contemporary political context. We identify strong reaction of researchers, which we are capable of measuring and quantifying precisely in our setting. We show evidence of new types of behaviour for scientists, such as expressing dissent and self-censorship.

We also contribute to the growing literature on the costs of political engagement for researchers. Aside from research about trust in science and political opinion (Cologna et al., 2025), our work is closely related to Alabrese et al. (2024), in which the authors quantify the cost in credibility incurred by researchers who publicise their political opinions online. Here, we quantify the productivity costs for researchers whose political opinions are known offline.

We also draw from the wider literature related to location choices and migration of innovators in order to assess the effect of the regime on migration behaviour. A large strand of the literature focuses on the impact of migration to the country or university of arrival (Borjas and Doran, 2012; Moser and San, 2020; Lerner et al., 2023). The literature has also examined the determinants of migration from the country of origin, including women's rights (Nejad and Young, 2014), rising taxes (Akcigit et al., 2016), productivity incentives (Akcigit et al., 2017) or network connections (Choudhury et al., 2023). A related body of work has instead considered gains for both sides, in particular for the country of origin, through knowledge or productivity diffusion (Bahar et al., 2022; Batista et al., 2025; Prato, 2025). Our paper is at the intersection of these last two strands: we attempt to quantify both the political determinants of emigration and its detrimental effects on growth, similar to the work of Dewitte et al. (2022) on the global effect of the Inquisition on science on Europe, for contemporary Central European countries.

We use measurement methods and concepts of productivity from a broad literature in economics of innovation, focusing on external determinants of researcher productivity (Azoulay et al., 2011; Aghion et al., 2023; Carayol et al., 2023). In particular, Azoulay et al. (2010) analyse the impact of losing a star co-author on publication quantity and quality; we look at another type of adverse shock, using similar methods. This literature extends beyond economics, and we rely on methods and measurements devised to evaluate academic outcomes in the scientometrics literature (Kronegger et al., 2011).

Our paper also builds on the political and administrative science literature characterising illiberal democracy. The term first appeared in the literature to describe developments in South-East Asia (Bell et al., 1995) before it started being used more widely after the publication of Zakaria (1997). In the Hungarian context, we expand on the precise qualitative description of regime change (Bankuti et al., 2012a; Boda et al., 2015; Halmai, 2018; Buzogány, 2020) and academic freedom constraints (Kováts,

2015; Kováts and Rónay, 2021; Kováts et al., 2024).

Finally, our paper relates to the emerging field of meta-analyses in bibliometrics along two dimensions. Our work contributes to understand to which degree and under which conditions researchers are comparable across countries, following Kwiek (2016), who showed that European top researchers are comparable. Our paper shows that while the premise of this research is right, political choices in a researcher's country of work may have lasting impacts on their careers that make them systematically different from researchers in countries in which such choices have not been made. Moreover, we contribute to the emerging union of the literatures pertaining to the analysis and evaluation of respectively international databases (Boyack et al., 2014) and national research information systems, in particular for Central Europe (Hladík and Renisio, n.d.). While our paper is not the first to compare trends in global and national systems (van Leeuwen et al., 2016; Háló and Demeter, 2023), it is the first to perform the analysis across all disciplines as well as the first to compare, at the level both of researchers and publications, the overlap between national and international databases across different countries, allowing us to better understand the advantages and shortcomings of both types of data. We make a contribution to this literature by using both types of data at once, combining an international and centralised database with several national, decentralised databases. This second type of data is more precise regarding national publications and author profiles. In particular, this allows us to consider social sciences and humanities in our analysis. Usually, due to poor coverage in worldwide databases, these disciplines are often excluded as a whole from scientometric papers. Our inclusion of social sciences and humanities has direct applications to the problem at hand, given that these disciplines are typically the primary targets of anti-intellectualist speech. This use of different databases also helps us ensure that we consider not only the full universe of researchers for the countries included in our study, but also the entire set of articles, in particular those that are not written in English. Moreover, our process to match entities between different databases is replicable and can be applied to other Current Research Information Systems and international databases.

The remaining of the paper is organised as follows. Section 2 describes the political and academic context of Hungary after Viktor Orbán's election of 2010. In Section 3, we detail our data collection work and define the variables we use in the analysis. Section 4 details the empirical strategy we implement. Section 5 presents our first set of results, explaining to what extent and how political pressure affects scientific outcomes for researchers in Hungary. Section 6 presents our second set of results, investigating the behavioural response of scientists to political threats. Section 7 presents our results regarding the global impact of illiberal policies on researchers. Section 8 finally concludes.

2 Political Context, Illiberalism and Threats to Academic Freedom

During the general election of April 2010, Viktor Orbán's party, the Fiatal Demokraták Szövetsége (*Alliance of Young Democrats*, Fidesz), unexpectedly obtained a supermajority, receiving 53% of the vote

and 68% of the seats in Parliament, defeating the incumbent socialist majority. These electoral results marked a turning point in Hungary's modern political history. At the time of the election, Fidesz proposed a right-wing and conservative program aimed at creating a "new social contract for the country." The party's large electoral victory was interpreted by its leaders as a general rejection of liberal values by the Hungarian people, opening the way for structural changes in the state's organization to reflect new conservative values (Pap, 2017). Viktor Orbán, as leader of Fidesz, became Prime Minister of Hungary in May 2010. His government quickly began implementing reforms aligned with what he described as "non-liberal" principles[1].

According to several international organizations and NGOs, there are multiple dimensions through which post-2010 governments have facilitated Hungary's transition from a "liberal" to an "illiberal" democracy[2]. A new Fundamental Law is promulgated on April 25, 2011, which weakens several components of the system of checks and balances that previously limited governmental power. In several independent authorities (in particular the judiciary and the media authority), the Parliament dismissed existing leadership and replaced it with party affiliates, while expanding the authority's powers and making their removal procedures significantly more restrictive (Bankuti et al., 2012b). More generally, since the 2014 general elections, Hungary's electoral process has been characterized as "free but unfair" (Bíró-Nagy, 2017), particularly due to restrictions on political advertising that have created unequal conditions for electoral competitors[3]. For instance, Kelemen (2017) highlights the chilling effect of Article 81 of Act CLXXXV on Media (2010), which grants regulators broad discretionary authority to sanction journalists whose content is deemed not "balanced, accurate, thorough, objective, and responsible". The European Commission for Democracy through Law has similarly criticized this law as overly broad and discretionary[4].

Throughout all of the steps towards illiberalism, academic freedom in particular was increasingly targeted through different means. While its state had been constant since the fall of the Eastern Bloc, Hungary experienced a sharp decline in academic freedom after 2010[5]. In this paper, we consider that academic freedom has two dimensions. First, we use the researcher-centric definition given by Russell (2002), who defines it as the "freedom to question and test and develop new ideas without undue ha-

[1] In the Hungarian context, the term "illiberal" used to describe Viktor Orbán's policies is not a pejorative label only employed by political opponents as can be the case in other European countries but rather as a self-description. This became especially evident after July 2014, when Viktor Orbán explicitly described his governance model as an "illiberal democracy" in a famous public speech. See Viktor Orbán's Speech at the 25th Bálványos Summer Free University and Student Camp.

[2] Human Rights Watch or Amnesty International consistently report on threats to the rule of law in Hungary and the threats to democratic institutions.

[3] See the OSCE / ODIHR Limited Election Observation Mission report.

[4] Opinion No. 798/2015 of the Venice Commission.

[5] This is particularly striking when considering the Academic Freedom Index (AFI) developed by V-Dem for Hungary. While it is constant between 1991 and 2010 at 0.95, it drops to 0.63 already in 2011 and keeps declining down to 0.3 in 2022, the lowest level among all the members of the European Union. See Figure A.1.1 and Figure A.1.2.

rassment or interference". In addition, we also consider a university-centric definition, from a historical perspective, in which we define academic freedom as the institutional right to autonomy for academic institutions. While we can consider the first dimension to be continuously threatened since 2010, this section focuses on three salient reforms during which the second was breached, all linked to electoral cycles. First, while the new Act on Higher Education in 2011[6] was already a major turning point, it was replaced in 2014 by another method of control of universities through a new position, still appointed directly by the Prime Minister. Chancellors have the responsibility of managing the university's financial resources, which undermines the power of rectors and allows the State to maintain a certain level of control over the university's choices. Moreover, up to a third of the appointed chancellors have a connection to the ruling party (Kováts, 2015). Although this position was somewhat mitigated by the introduction of a supervisory board to which both the rector and the chancellor belonged in 2015, its introduction led to an outcry in public universities, as it amply limits the power of rectors and muddies the line between university management and the government (Rónay, 2018). This process was furthered by the introduction of consistories in 2015, financial boards in which four out of five members were named by the government. Secondly, as part of the campaign leading up to the 2018 legislative elections, the Central European University (CEU), founded and funded by billionaire George Soros, was targeted as early as late 2017. This led to a legal battle that forced the university to permanently relocate to Vienna in 2019. Directors and more generally all professors affiliated to the University were accused of being both agents of external forces and of "social degeneracy", especially due to the existence of gender studies classes (Enyedi, 2018). The final and largest changes imposed on public higher education by the government have been the "regime change" started in 2018, when the Budapest University of Economic Sciences, now called Corvinus University Budapest, became owned by a public interest foundation. This model was then applied to twenty other public universities comprising the majority of university students in the country until 2022. While this seems to relax the State constraints on universities, the boards of these public interest universities comprise many Fidesz-aligned trustees (Szent-Iványi and Tétényi, 2022), meaning that up to a third of these trustees are Fidesz politicians, not including others who are supportive of the party (Kováts et al., 2024).

Although organizational reforms have been the primary lever used to undermine academic freedom, the threats to its individual aspect should not be minimized. Reforms have indeed been accompanied by increased pressure on researchers through State-aligned media, which labels government critics as wasteful or politically motivated, rather than driven by science (Kováts and Rónay, 2021). Fidesz and pro-Orbán media have pressured researchers through campaigns that accuse them of collaborating with

[6] Act CCIV of 2011, in which "autonomy" and "freedom" were no longer guaranteed but replaced by the necessity of "the spiritual and intellectual renewal of the nation". Furthermore, university rectors – who are responsible for professor recruitment, formerly elected by their peers, had to be appointed by the Prime Minister.

NGOs or affiliating with institutions perceived as opponents. These campaigns have been particularly aggressive against academics, often using traditional populist rhetoric targeting elites and minorities, for instance in the campaign against Central European University, directed toward scholars and frequently employing antisemitic rhetoric (Jenne et al., 2022)[7]. We provide more details on the political context and the threats to researchers and academic freedom in Appendix A.

3 Academic Data Collection

We conduct our analysis using bibliometric data coming primarily from two types of sources. The first type consists of several national-level databases on research activities, that are specific to each country included in our analysis. The second is OpenAlex, an open-access, world-wide publications database constructed from Microsoft Academic. We combine these sources to build our final datasets.

3.1 Current Research Information Systems

Our first type of data source is an aggregation of several national Current Research Information System (CRIS) databases. These datasets are national-level repositories that document all research activities within a country, typically established in the 2000s as part of a global effort to enhance research transparency. These datasets generally contain either data about researchers and their publications or project-level data, though some are publication-level databases. In addition to Hungary, we also consider several countries from Central-Eastern Europe, specifically Croatia and Slovenia[8] . All of these databases are part of the EuroCRIS initiative, ensuring they comply with similar standards[9], and thus converge to adhering to the Common European Research Information Format, which allows us to exploit these databases together in spite of their idiosyncrasies. Researchers also have some level of control over the information which appears on their profile and the publications that are listed in the repositories[10].

For each source, we download data in the available format and apply a translation and harmonization process in order to be able to append all different datasets into one. We then use the data we collect

[7] Jenne et al. (2022) give the following reason for this "Sorosozás", which they translate as "Soros-bashing": capitalizing on existing antisemitic tropes to compete against the explicit far-right party Jobbik during the general elections campaign of 2018, including antisemitic rhetoric already directed at Soros from the 1990s emanating from Csurka's MDF against which Orbán pushed back at the time. Authors explain that this campaign was instrumental in helping Fidesz secure a third veto-proof majority in 2018. We further link this battle with the ban for all Hungarian universities (but applying only in practice to Eötvös Loránd University) to offer a master's degree in gender studies, considered to be progressive propaganda pushed by George Soros.

[8] We do not consider Poland, due to the fact that the country was led by the right-wing populist Law and Justice party from 2015 to 2020, again with direct reference to Orbán's governance. We also do not consider Austria due to the relocation of the Central European University in Vienna that could create a bias in our estimation. In addition, we exclude Czechia and Slovakia due to incompatibility of the data with panel analysis at the other level.

[9] See `https://eurocris.org/` for more information.

[10] While this gives us confidence in the accuracy of author-level profile information, there could be a selection bias in the publications that indeed appear to be linked to each author. We address this concern with several robustness checks in our results section and in Appendix B.

in order to build panel data, at the author-year level, that accounts for the academic performances of each researcher. In addition to publication-level data, CRIS databases collect extensive author-level information, including full names, fields of research, PhD completion year, and unique identifiers for each author. For authors for whom we have the information, we harmonise the field of research across CRIS data bases[11]. This process results in a large sample of academics from the three countries: in its raw form, the dataset includes information on over 60,000 researchers in Hungary, 40,000 in Slovenia, and 50,000 in Croatia, who entered Academia after 1950. To the best of our knowledge, we are the first to use these CRIS data sources in the science of science and innovation economics literature. These data offer broader, more accurate coverage of research activities in smaller countries, without introducing bias related to researchers' fields or productivity that could occur in international bibliometric data bases. We believe these specificities allow us to precisely identify the effect of political pressures on academic performance. Additionally, these national repositories are mainly used by researchers who are citizens of the countries in which they work. We argue that this nationality-based selection is not an issue for our analysis, as "national" researchers still make up the vast majority of academics in all the countries considered. Moreover, political pressure is likely to have a stronger impact on national researchers, while affecting foreign academics in Hungary differently.

3.2 International Bibliometric Data

The second major data source we use is OpenAlex, an open-access bibliometric database created from Microsoft Academic in 2021. It contains data on 247 million works, 90 million authors, and 60,000 concepts (Priem et al., 2022). We use OpenAlex data for publications from 1990 onward. While Scopus and Web of Science have often been considered more detailed in terms of co-author networks, Microsoft Academic was regarded as one of the most comprehensive databases, particularly for publications not written in English (Visser et al., 2021).

Using both publication-level and author-level data from OpenAlex, and after correcting for some measurement errors[12], we construct a panel of authors active in Hungary and other Central European countries we take into account prior to 2010. This database allows us to create an author-year level panel that includes various measures of research quantity and quality for each author, as well as data on their co-author networks and academic affiliations. While national CRIS databases already provide extensive information on individual researchers' activities, OpenAlex is crucial for capturing *international* outcomes. Specifically, it enables us to track researchers' international mobility through their affiliation

[11] We provide more details on the collection of the data, its harmonization and the construction of our final panel data set in Appendix B

[12] See Appendix B.2.

and their collaborations with foreign researchers who are not included in the national repositories data[13].

To jointly use these data sources, we proceed as follows. First, we normalize publication titles[14] and collect common external identifiers (Digital Object Identifier (DOI) and Scopus identifiers) for publications across all databases, both national repositories and OpenAlex. We then merge the databases pairwise, matching publications based on identifiers, titles, and publication year, keeping only unique matches. These matched publications are then used to link author profiles across databases using author names. Additionally, we perform a second round of matching based on authors' names, affiliations, and research areas. We treat the national databases as the primary source of truth in this process, as they are curated directly by researchers and/or universities, whereas OpenAlex relies on a clustering algorithm to generate author profiles due to its larger scope[15]. Using this method, we for instance match 52,172 author profiles from the Hungarian CRIS to 57,536 OpenAlex profiles and 15,954 profiles from the Slovenian CRIS to 19,432 OpenAlex profiles. We are also able to match 360,155 publications from the Hungarian CRIS and 112,328 from the Slovenian one.

3.3 Measures of Academic Performance and Mobility

3.3.1 Quantity, Quality and Network

The main outcome of interest is the quantity of research that is produced. As baseline outcome of interest, we use the raw number of publications by a given author in a given year. We then subdivide this number depending on the language of the publication. More precisely, we distinguish the number of publications in English from the number of publications in the "national language" of the country[16].

To account for the quality of research outputs, we use the rank of the journal in which an article is published. Specifically, we compute the average journal rank in OpenAlex using the Scopus CiteScore methodology, which is based on citations[17]. Journals are categorized into the following groups: bottom 50%, top 10%, top 5%, and top 1% cited journals. We then count the number of publications per author, per year, in each journal category. This method is particularly useful since citation counts per publication are not consistently available across all CRIS sources. Additionally, citations are only considered within

[13] In national repositories, names of researchers who do not work in the corresponding country often appear in the list of co-authors. They however do not have any unique author ID, and we thus use OpenAlex in order to be sure they are affiliated to a foreign-based institution.

[14] Specifically, we convert titles to lowercase ASCII characters, remove stop-words, and eliminate non-alphanumeric characters.

[15] We give further details on our data analysis and decisions regarding multi-profile authors in OpenAlex in Appendix B.2.

[16] For instance one publication in Hungarian for a Hungarian researcher is counted equivalently to one publication in Slovenian for a Slovenian researcher.

[17] Following James et al. (2018), we compute the journal rank by considering citations received by each journal relative to the total document counts over a four-year window in OpenAlex. This ranking is then merged with each publication in the CRIS data using the ISSN of the publication source. The rank is taken at the field level. We do not use the impact factor provided by OpenAlex due to its limited availability prior to 2012.

national repositories, which makes them primarily a proxy for the influence of research within the national research community, rather than an indicator of overall quality[18].

We further measure the impact of the political shock on researchers' collaboration networks. For this, we count the number of collaborations per researcher per year. We define a collaboration as co-authorship link between two researchers; multiple joint publications within the same year between the same authors are counted as a single collaboration during a given year. We also count the number of new collaborations, defined as first-time co-authorships. For these variables, in OpenAlex, we also distinguish collaborations *within the country* from co-authors that we identify as being from a different country, thus constructing a measure for international collaborations.

3.3.2 Research Direction

We also measure research direction by encoding the titles of researchers' articles using a sentence transformer BERT model trained on a multilingual corpus. Similarly to the method of Arts et al. (2025) for all of OpenAlex, we then compute for each researcher present in all CRIS the average cosine similarity between the titles of the articles published each year and the titles of the articles published in the last year in which she published. We call this measure similarity with past research. We also compute the cosine similarity with the average embedding of political allies and opponents in the current year, either those who work in the same domain (Social Sciences, Health Sciences, etc.), field (Economics, Chemistry, etc.) or subfield (Applied Mathematics, Genetics, etc.) as defined in the OpenAlex classification. We provide more information about these measures in Appendix D.

3.3.3 Researcher Mobility

Finally, we measure researchers' mobility, considering only migration out of their *home* country, defined as the country in which the researcher is listed in the CRIS data or identified through their affiliation in OpenAlex. OpenAlex provides affiliation data for each year an author publishes, allowing us to track their mobility between affiliations. We create the following indicator variables: whether the author has published in their home country that year; whether the author has published outside their home country that year[19]; whether the author has not published in their home country for a specified number of years; and whether the author has stopped publishing in their home country, meaning they are no longer seen in the home country after that year. Additionally, we account for exits from research altogether, measured by whether a researcher leaves academia, based on the last year they published.

[18] Since this variable is available in the Hungarian national repositories, we mainly use it to assess academic influence among peers in Hungary.

[19] For both of these variables, the indicator takes the value 0 if the author has not published that year.

4 Empirical Strategy

4.1 Sample Selection

This paper addresses two distinct aspects of the impact of political pressure on innovation, and we therefore construct two sets of samples. The first focuses on identifying the direct effects of political repression on researchers within Hungary. The second concerns the broader impact of illiberal policies on the state of academia in Hungary, thus comparing Hungarian researchers, who were exposed to illiberal policies, and their counterparts in other Central and Eastern European countries.

4.1.1 Hungarian Scholars and Political Targets

We first focus on differences between researchers within Hungary based on their perceived political alignment. From the raw sample of researchers in the Hungarian CRIS database, we only keep those with at least one publication between 1990 and 2005, and whose entry year falls between 1990 and 2005. Among these researchers, we identify those who could be perceived as politically non-aligned or aligned with the government after the 2010 elections, relying exclusively on authors' individual characteristics measured before 2010[20].

(i) Political Opponents – This sample aims at understanding the trajectory of researchers that we have identified as perceived to be "political opponents" of the regime. We do so based on two different definitions. First we consider all researchers that are affiliated to the Central European University prior to 2010, as members of the CEU have always been identified by conservative politicians and members of the Fidesz as clear opponents of Viktor Orbán. Second, we establish a list of politically involved researchers that collaborate closely with Non-Governmental Organizations that are particularly hostile to Viktor Orbán's policies. In total, the list comprises 440 researchers. All researchers belonging to this political opponents group have been matched to their identifiers both in CRIS data and OpenAlex data by hand[21].

(ii) Non-aligned Topics. While scientists perceived as political opponents have been directly targeted through laws and media action, this is not the case for the vast majority of researchers. Others may still feel that they are indirectly a target of the regime, particularly due to the topics they focus on. We propose here an attempt to capture how working in a field of research negatively perceived by the Fidesz governments could expose an author to a chilling effect. We thus focus on researchers publishing on two types of topics. First, those who work on gender-related issues, a subject that has been demonized in the press, and forcibly excluded from the programs of universities. Gender is also a subject which

[20] For robustness, we consider alternative time windows to define researchers' alignment, restricting the definition to pre-2005 characteristics or extending it to characteristics measured up to 2010.

[21] We provide more details about how these researchers are chosen and how they are matched in all data bases in Appendix C.

spans more than one domain of science: gender and sexual differences have implications not only in social sciences, but also in health sciences and life sciences. Secondly, we define a set of authors working on *sensitive topics*, *ie* on topics that are often heavily politicized, dealing with issues that might go against the government-aligned speech on National History (Deportation, Antisemitism, Roma persecution) or on minorities (refugees, humanitarian crisis, etc.)[22]. We use a list of keywords to understand whether the title of a publication refers to gender and sexual issues or a *sensitive topic*. We consider that researchers with at least 3 publications or more in these topics between 2000 and 2005 are likely to be specialised. We find in total 1,082 researchers working on gender and 890 researchers working on *sensitive topics*[23].

(iii) Political Allies – This sample focuses on researchers who can be considered politically supportive of the regime. We identify these individuals using the membership list of the Batthyány Society of Professors[24], a conservative academic circle closely aligned with Fidesz, and the website of the Mathias Corvinus College, a think-tank closely linked to the regime. We treat membership in these organizations as indicative of being perceived as an ally to the government. This sample is of 171 researchers in our data set.

In summary, we distinguish 4 non-overlapping groups within the full raw sample of Hungarian researchers. On one hand, among non-aligned researchers, there are academics perceived as political opponents *(i)* and researchers working on non-aligned topics *(ii)*. On the other hand, conservative researchers, aligned with the regime and illiberal policies *(iii)* which are further named *Ally* academics. The remaining researchers belong to the *perceived as neutral researchers* group. This final group is the control group of our different politically aligned or non-aligned groups. In other words, we compare the research performance and career trajectories of political opponents and conservative researchers to their neutral counterparts, matched based on similar observable characteristics, namely first year of publication, scientific field and vigintile of total publications over the period 2005-2010. Additionally, we ensure that control researchers are not co-authors of either political opponents or conservative researchers, for instance using the network measures that are described in the following subsection. The final samples have the following compositions: 226 political opponents are compared to 498 neutral researchers, 933 researchers working on gender with 10,667 neutral researchers, 832 researchers working on *sensitive topics* with 10,049 neutral researchers, and 58 researchers loyal to the government with 193 neutral researchers.

Network Analysis

All authors from the former samples are part of fully defined, identifiable groups that are politically aligned. The same reason why our methodology allows us to be certain that they are exposed to the

[22] Refer to Appendix C.2 for the full list.

[23] We also consider for robustness researchers working on *climate change* issues, who are often a target of illiberal governments in other context but less likely to be the case in the Hungarian one.

[24] Founded in 1995 for professors "committed to traditional European social virtues". See here for more detail.

political shock also prevents us from assessing the effect of that shock on other researchers who may diverge from the regime or be aligned with it. Those researchers could be heterogeneously affected in a similar manner, but are not part of structured groups. Furthermore, outcomes of the aforementioned well-defined group may have spillovers on connected researchers. In order to capture these potential effects, we make the assumption that researchers are more likely to work with researchers with whom they are closer to politically, in particular in contexts in which political affiliation becomes more salient. Using these connections, we build a sample of authors *connected* to the samples defined above.

Not all co-authors have relationships with the same depth and interdependence. We thus must take into account the fact that a co-author of a political opponent on a single paper does not have the same exposure to the political shock as a long-term, frequent collaborator. We use the dependence index from Aghion et al. (2024) to measure this proximity:

$$C_i^g = \sum_{\ell \in \mathcal{P}_i} \omega_{i\ell} \cdot \sigma_\ell^g$$

in which C_i^g is the index of proximity between individual i and group g over the 2000-2010 period. For each publication ℓ in the publications $\mathcal{P}_i$ of author i, we compute $\omega_{i\ell}$, the ratio of citations to publication ℓ to the total citations received by author i for all their publications over the period. We then sum all $\omega_{i\ell}$, weighting them by σ_ℓ^g, the share of authors of publication ℓ that belong to group g, i excluded. In other words, C_i^g measures the share of citations for author i that can be attributed to collaborations with group g, weighted by the intensity of these collaborations.

This index only measures the intensity of dependence on the affected groups for direct co-authors. But there is no reason to believe that spillovers or political closeness would stop after the first degree in the network. We therefore expand this definition to also take into account higher degree links between the politically aligned groups and other researchers. Let us define W as the co-authorship matrix, in which $w_{i,j} = \sum_{\ell \in \mathcal{P}_i \cap \mathcal{P}_j} \omega_{i\ell}\omega_{jl}$ measures the strength of collaborations between i and j. We transform this matrix into $\bar{W}$ so that the sum of each row equals 1. Let us also define $\mathbf{c}^g = (C_i^g)_i$ as the vector of direct indices from the first-degree index. We consider that the propagation of the shock across the network decays with a parameter $\lambda = 0.5$, up to the third degree of collaborations[25]. This yields the following continuous index:

$$C_i^{g,\,\text{net}} = C_i^g + \lambda \left(\bar{W}\mathbf{c}^g\right)_i + \lambda^2 \left(\bar{W}^2\mathbf{c}^g\right)_i$$

We provide a simplified example of the co-authorship network in Figure 1, for one researcher belonging to the Central European University, represented by a circled red star. Other researchers from the same

[25]If we considered only the first-degrees co-authorships, then $\lambda = 0$ and $C_i^{g,\,\text{net}} = C_i^g$. Results in the following sections are robust to different values of λ.

group group $g = CEU$ are also represented with a star, and intensity of the value $C_i^{g\,\text{net}}$ is shown in lighter to darker blue. Some researchers that are only connected to group g from another link may have a stronger $C_i^{g\,\text{net}}$ than some first-degree co-authors because more of their citations come from publications with close co-authors of group g. As the different values of $C_i^{g\,\text{net}}$ on the graph show, this dependence is taken into account by our measure. Throughout our analysis, we refer to a researcher as being part of the network of a given group if their value of $C_i^{g,\,\text{net}}$ is strictly above the median of the value in the dataset for this group (*Opponent Network* or *Ally Network* for instance). After removing researchers who belong to both groups, we keep 5,845 members of the *Opponent Network* and 4,529 members of the *Ally Network*. In order to remove selection bias in our regressions, we compute placebo networks made from groups matched from opponents and allies, respectively yielding networks of 10,749 and 6,483. We finally remove all authors who belong to two given networks at the same time and match researchers from each network with researchers from the corresponding control network on the same observables as in the above section. The resulting samples comprise 3,592 members of the *Opponent Network* with 2,544 researchers from the control network for opponents, and 1,899 members of the *Ally Network* with 1,028 researchers from the control network for allies[26].

4.1.2 Hungarian and Central-Eastern European Researchers

In addition to comparing the trajectories of researchers *within Hungary*, we aim in section 7 at measuring the global effect of illiberal policies on academia, performing cross-country author-level comparisons between Hungarian researchers and researchers based in Slovenia and Croatia. Such comparisons between countries are not often performed[27]. We however argue that such comparison is in our case possible, thanks to the quality of the data we use, which allows us to build a precise matching procedure based on author-level characteristics. We start with the same restrictions as above, in all of CRIS data, only keeping those with at least one publication between 1990 and 2005, and whose entry year falls between 1990 and 2005. This yields in total 36,731 Hungarian authors, 15,728 Slovenian researchers and 21,912 Croatian researchers. To ensure comparability between the treated and control groups, we perform exact matching over the selection period (2000-2005), allowing for replacement, using the raw sample of authors we previously obtain. The matching variables include the year of entry of the researcher in academia, the field she works in and the quantile this researcher belongs to in terms of publication in the CRIS data.

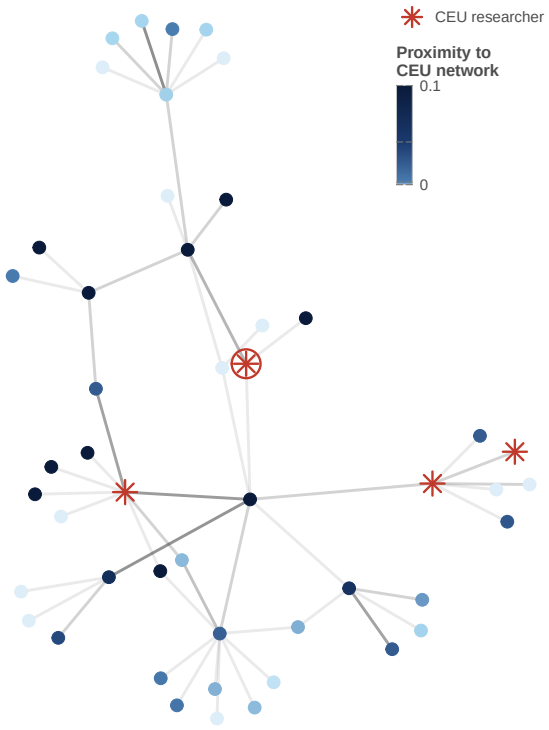
4.2 Comparing Academic Performance Across Researchers

For each sample we define, we estimate a difference-in-differences regression comparing the group of researchers of interest with a control group drawn from the *researchers perceived as neutral* group. We

[26] See table Table C.1.1.

[27] See for instance Kwiek (2016), for a cross-nations comparison of highly productive academics in Europe.

Figure 1. Opponent Network Example



Notes: The schema above reports an example of the network that we identify when computing the collaboration index. The displayed network is the network of the researcher at the centre of the schema, represented by a circled red star (in that example $g = CEU$, and the schema displays up to 3 degrees of collaborations between authors).

formally investigate the effect of political pressure on researchers' career trajectories by sequentially estimating the following equation:

$$Y_{it} = \sum_{t=2005}^{2020} \beta_t D_i \times Post_t + \alpha_i + \delta_t + \sum_{s=2005}^{2020} X_i \times \mathbb{1}_{\{t=s\}} + \epsilon_{it} \tag{1}$$

where Y_{it} is the outcome variable measuring academic performance for researcher i in year t. The treatment indicator D_i takes the value 1 if the researcher belongs to the group of interest and 0 if assigned to the matched control group, as defined in Section 4.1. The variable $Post_t$ is a binary indicator equal to 1 for years after 2010, the onset of illiberal policy implementation. The model includes individual fixed effects (α_i) and year fixed effects (δ_t). The term X_i represents a vector of time-invariant researcher characteristics, interacted with year fixed effects to control for their influence over time. In our baseline specification, X_i comprises only the field and the entry year of the author. We also consider extended specifications that include additional controls such as the author's main domain of research and the number of publications in the first two or five years of a researcher's career.

In all estimation tables, we further decompose the post-2010 effect of illiberal policies into distinct dummy

variables corresponding to each mandate of Viktor Orbán (2010–2014, 2014–2018, 2018–2022, post-2022). This allows us to capture not only the overall impact of illiberal policies but also their potential intensification over time, which is likely to be gradual as the political pressure intensifies over the years and mandates.

Each exercise relies on a different treatment group. The first set of results focuses on the "core" opponents and allies, i.e., the individuals identified as *aligned* or *non-aligned* in subsubsection 4.1.1. Once the exact matching procedure is performed, the trajectories of these researchers are compared to those of their control group. In addition, we run similar regressions in which treatment is defined by membership in the *Ally Network* or the *Opponent Network*. For these groups, since the collaboration index we build is based on authors' publication and citation counts, we construct collaboration indexes for two additional groups, *ally control* and *opponent control*, taking as the "core" of each network the matched controls of the corresponding treated group. For individuals belonging to the *Ally Network* or the *Opponent Network*, the control group thus consists of the networks of the matched counterparts of the "core" researchers described above. In this way, we compare not only individuals but also networks with similar structure and productivity before the 2010 elections[28].

While the estimating equation remains the same throughout the analysis, we use it to estimate different moments in the data. We believe that the first set of effects that we first estimate, while the most relevant to our research question, represents additional effects compared to the neutral group, positive or negative. The neutral researchers serve as a control group for the first part of the analysis, but we believe that they are also treated by illiberal policies. They become the treated group in our cross-country comparison in section 7.

5 How Do Political Pressures Affect Scientists' Productivity?

In this section, we first show that political pressure differentially affects the academic productivity of researchers after 2010, depending on their perceived political alignment, in terms of both quantity and quality (subsection 5.1). We also show that the effects are similar for researchers targeted through their affiliations or organizations they collaborate with, or through the topics they work on. Second, we investigate the mechanisms through which this negative impact on productivity operates (subsection 5.2).

[28] Figure C.1.1 shows the distribution of the collaboration indexes we build for the control group of ally researchers and the control group of opponent researchers.

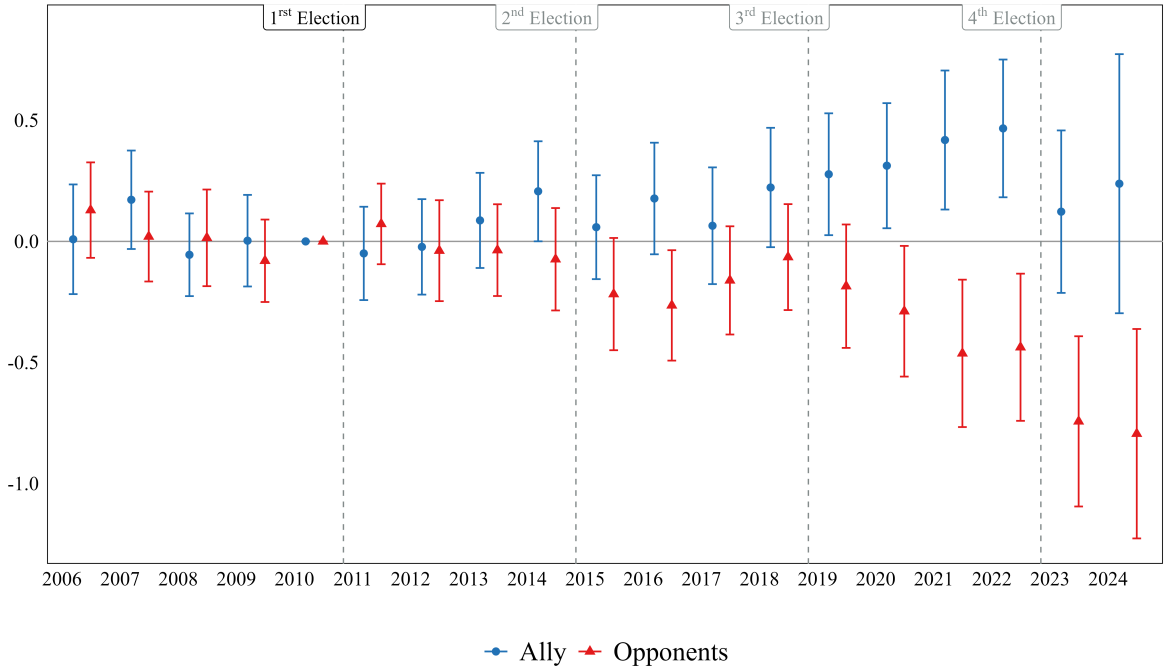
5.1 The Effect of Not Being Aligned on Academic Productivity

5.1.1 Political Opponents

This section begins by investigating the effect of illiberal policies on researchers who were directly targeted and perceived as political opponents. Our main results come from estimating Equation 1, using perceived political opponents as treated individuals and as controls researchers from the neutral group, matched on pre-2005 characteristics. These first results thus rely only on the "core" of the opponent network, as defined in Section 4.1. We contrast the results obtained on this sample with those obtained on the sample of political allies. Figure 2 shows the event-study graph for this first specification, using the yearly count of publications as the measure of productivity. When compared to neutral researchers, political opponents experienced a significant decline in the number of publications. The dashed lines in the graph represent Orbán's successive elections and re-elections. The event-study shows that the magnitude of the effect increases over the later mandates, which suggests that the more intense the political pressure through the years the stronger the impact on targeted researchers. By contrast, allies' estimated coefficients, if anything, show a slightly positive trend in their total number of publications, especially after Orbán's third election in 2018, although it disappears after 2022. Figure 3 reports the average treatment effects estimated for both groups on all quantity and quality outcomes. The negative effect on productivity holds for publications in both English and Hungarian. It represents an average decrease of 18% in the number of publications. Using the value of the pre-2010 average, this represents a decrease of 0.63 publication per year per author. We also document a strong negative effect on research quality: the figure shows the estimated effect on the number of publications in journals ranked in the top 5% and top 10% by citations. The estimate we measure represents a decrease of 59% in the number of publications in top 10%-ranked journals by citations i.e. -0.11 such publication per year per author. This effect is quite important since the pre-2010 average number of such publication per year is 0.19 publication. Researchers perceived as political allies do not appear to be overall affected, while those perceived as political opponents are over the different research quantity and quality measures we test.

Second, we not only restrict ourselves to the "core" of both perceived political opponents or allies, but also demonstrate that these effects are propagated along their network. Table E.2.1 shows smaller effects of the shock on researchers who are part of the network of opponents on the total number of publications and on the total number of publications in high-quality sources. The effect only becomes significant for the second and third mandates. When statistically significant, the effect that we measure for the network of political opponents is of a smaller magnitude than the one we measure for the individual at the core of the network, indicating that there is attenuation compared to perceived political opponents: it represents for instance a decrease of 8% in total publications during the second mandate, and a change of -22% in the count of publications in the top-10%-ranked journals. In the following section investigating the mechanisms of this effect, we show that indeed researchers at the centre of the networks of political

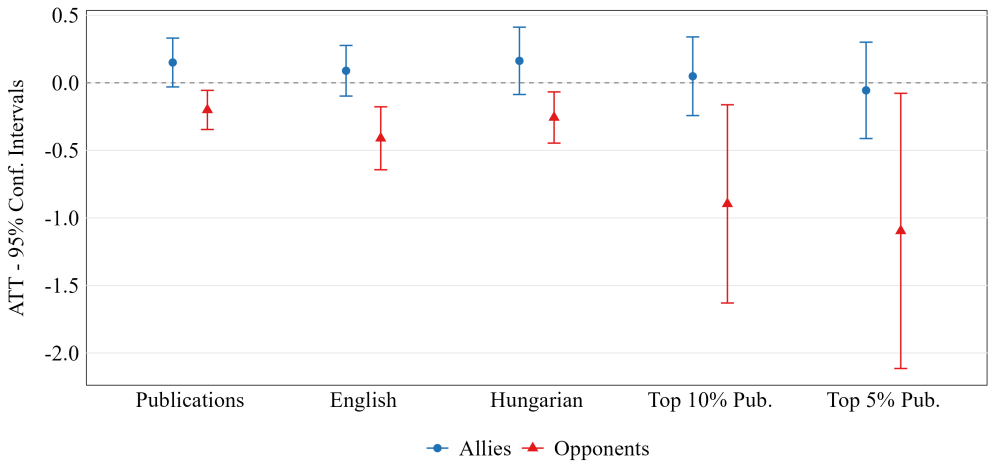
Figure 2. Effect on Publications, by Political Alignment.



Notes: The graph above reports the coefficient in Fixed-Effects PPML regression on publications for each political group compared to Hungarian researchers that are not identified of being close to any organization targeted by the government nor to researchers explicitly supporting the government. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable.

opponents are more impacted than the individuals located at its periphery. We also summarize the results for ally researchers in Table E.1.1. These researchers do not incur any loss in terms of academic productivity, both in the quantity and quality of their research.

Figure 3. Effect on Hungarian Academics' Productivity, by Political Alignment.



Notes: The graph above reports the ATT coefficients in Fixed-Effects PPML regressions for each political group compared to Hungarian researchers that are not identified of being close to any organization targeted by the government. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable.

5.1.2 Targeted Topics

We then turn to the analysis on the effect on researchers perceived as non-aligned through the topic they work on. We estimate equation 1 again, using as a treatment whether the author worked in gender related topics or sensitive topics, i.e. if they had at least three publications featuring the associated keywords prior to 2005. Table 1 summarises this effect on researchers' productivity. We find that both for gender-related and sensitive topics their productivity is negatively impacted, both in quantity and quality, similar to our results for political opponents. The magnitude that we measure is similar to the previous section: gender-topic researchers lose roughly 13% of total output after the policy change, with a fairly uniform hit across languages and a somewhat larger drop of 18% at the top of the quality distribution. Sensitive-topic authors show a similar pattern but with a higher effect on publication in top 5% ranked journals in terms of citations, as it represents a decrease of 25%. Targeted topics are thus affected substantially, although the magnitude of the effect we find is smaller than the one on academics who are directly perceived as political opponent, but of a higher magnitude compared to their network. These findings — although limited to researchers working on gender-related or "sensitive" topics — are for instance consistent with the qualitative evidence presented by Kováts and Rónay (2021), which documents how concerns about potential government targeting can have tangible effects on researchers' output.

As we perform the exact same analysis as in the previous section, we only focus on researchers who entered academia in 2005 or before. The negative impact that we document on these researchers is however likely to also exists on researchers who entered after this year, especially after 2010. This assumption is supported at least descriptively, as Figure C.2.1 shows it. The figure plots the number of new researchers each year who publish more than once in gender in their first five years of activity. This count starts declining from 2015 on, which suggests indeed that the topics related to gender studies become less attractive to young researchers over the period, which likely explains partly of the negative productivity effect we find.

Table 1. Effect on Academic Productivity - Targeted Topics

	Publications		Publications (EN)		Publications (HU)		Pub. Top-5	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
gender × post	-0.143***		-0.170***		-0.133***		-0.197***	
	(0.025)		(0.031)		(0.035)		(0.044)	
sensitive × post		-0.125***		-0.101***		-0.163***		-0.288***
		(0.025)		(0.039)		(0.038)		(0.111)
Mean dep. var. (pre)	3.398	4.694	1.364	1.364	2.497	2.497	0.528	0.381
Observations	202,535	190,362	168,138	145,064	190,507	181,489	215,173	46,174
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those who published at least two publications in gender topics for the first line and sensitive topics for the second line. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total publications (columns 1-2), publications in English (columns 3-4), publications in Hungarian (columns 5-6) and publications in the top 5% most cited journals in OpenAlex. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

For all the regressions presented in this paper, we vary the variables on which we match the control to the treated group. Our preferred matching equation rely on variables that capture essential characteristics of researchers when it comes to comparing their trajectories both across-country and within Hungary. However, we also create alternative samples, using the same exact matching procedure but relaxing it by dropping some of matching variables. Doing so, we logically increase the size of both the control and treatment groups. We find that our results are robust to this exercise, and that samples with increased size show similar effects of illiberal policies on targeted researchers. We perform another series of robustness checks regarding the results about gender studies. First, we chose more restrictive conditions to select authors working in gender topics and find similar results. Second, we replicate these results in OpenAlex, in which we find that the overall number of publications and average quality decline as well. Results are also robust to different winsorization thresholds on the outcomes variables (0.1%, 1% and 5%), showing

that our results are not driven by extreme values in the distribution of outcomes, a usual concern when using publication data.

5.2 Channels of Repression

This section aims at understanding how the political pressures translate into worse or better research outcomes for the affected groups. We consider three possible channels through which political pressures are able to affect the productivity of treated researchers. First, we investigate the funding channel, and find no evidence that funding is the main margin through which treated researchers have an increased or decreased productivity. Second, we consider their network of collaborations and find that link formation appears to have been disrupted for political opponents and enhanced for allies, likely explaining the productivity effects measured. Finally, we consider an effect closer to proper silencing: a loss or gain of influence due to implicit incentives to cite differently the work of aligned researchers also appears to explain part of the productivity effect.

5.2.1 Evidence on the Effect of Funding

We first show that while funding could play a major role for the country as a whole, it does not seem to be the main channel through which targeted researchers were affected. A very efficient and direct way to conduct political repression would be to diminish the budget allocated to opponents, at the institutional or individual level. As we have no access to funding data at either level, we cannot identify causally whether the negative effects described above occur through this channel. We start by observing that some of the political opponents are defined into the treated group by their affiliation to the Central European University, which is funded by a private foundation independently from the Hungarian State. This is a first suggestion that funding may not be the relevant margin for this effect. We then conduct two other different empirical exercises.

First, we conduct a triple difference-in-differences, subdividing the control and treated group in regular researchers and lifetime ERC grant recipients. Not only are we certain that the latter group had increased funding obtained independently from the Hungarian government during the period, but they are also more likely to be able to advertise their work in order to obtain other funding. Only 83 Hungarian researchers have received an ERC grant over the period 2007 to 2025, so that we cannot include author-level fixed effects. In our sample of political opponents, this is the case for only 6 researchers, so sample size prevents us from deriving any causal results[29].

In order to accurately represent trends in their publications, we perform a minimal matching algorithm, on 5-years window of author entry and ERC status only, to the entire sample of political opponents.

[29] Appendix E.3.1 presents descriptive statistics on the number of ERC recipients in the period and unconditional trends.

The final sample contains 269 treated authors and 44,916 control authors, 51 of which are ERC recipients. We then estimate the following triple differences-in-differences equation with fixed effects controlling for domain trends by year :

$$y_{it} = \beta_1 \times \text{opponent}_i \times \text{ERC}_i \times \text{post}_t + \beta_2 \times \text{ERC}_i \times \text{post}_t + \beta_3 \times \text{ERC}_i \times \text{opponent}_i + \beta_4 \times \text{opponent}_i \times \text{post}_t + \beta_5 \times \text{opponent}_i + \beta_6 \text{post}_t + \gamma_t \times X_i + \epsilon_{it} \quad (2)$$

In which ERC_i is an indicator taking value 1 when the researcher has received an ERC, opponent_i takes value 1 when we identified the researcher as a political opponent, and post_t takes value 1 when the year is above 2010. We also estimate the same difference in differences splitting the four mandates.

Table E.3.1 presents the results. While we cannot interpret them causally, we believe that they provide circumstantial evidence that even for researchers who are widely recognised to the point that they receive an ERC, this funding has not been enough to offset the effect of illiberalism. Only the total number of publications in English and citations of ERC recipients identified as political opponents still increases after the shock, but with a very sizeable negative effect compared to those of control ERC recipients. Our interpretation is that these researchers who depend on other sources of funding than the government still suffer heavily and increasingly from the political climate. Funding itself, while probably playing a role for the majority of researchers, is not the only mechanism through which illiberalism expresses itself.

Our other empirical exercise leverages differences in public or private status of affiliation of researchers. We subdivide again the control and treated groups based on whether they had been affiliated to a public institution between the years 2000 and 2005 and estimate a similar triple difference-in-differences equation. Table E.3.2 shows that while the estimated effect of the interaction between being a political opponent and in a public institution in 2000-2005 is negative, it is not significant at all, aside from publications in Hungarian.

5.2.2 Network Shrinking Effects

We now turn to the analysis of network dynamics for treated researchers compared to the control group. If being the target of political pressures prevents researchers from forming new connections or exploiting existing ones, it can lead to the productivity effect we observe. In particular, after 2018, treated researchers were sometimes named in the press. Other researchers could thus fear that they would become exposed to pressures themselves if they collaborate with political opponents.

In these regressions, we compute the effect of political alignment only on the number of co-authors who are also present in the national database. We believe that these diverging patterns in the Hungarian network of allies and opponents contribute to explain why publications in Hungarian are more affected in both directions than those in English. We perform a similar regression in OpenAlex, on the subset of authors who we identify from the CRIS datasets. Using the same matching algorithm, we compute

the same regression, dividing publications by whether they have any co-author outside of Hungary, a co-author in the region outside of Hungary[30], and a co-author in the US. Table E.3.3 also shows that there is a positive effect building up over time for international collaborations, in particular with co-authors from the US. Conversely, for allies, Table E.3.4 shows that international collaborations tend to decrease. Putting those regressions together, we find that the network of opponents shrinks in Hungary but collaborations intensify abroad, while the opposite happens for allies.

Table 2 shows the results on the political opponents in terms of total collaborations and new collaborations. Researchers perceived as political opponents see their number of co-authors fall by 25% and their number of new collaborations by 28.6% after treatment. Allies' network, in contrast, do not seem to be affected, both in total number of co-authors and of new collaborations. Table 3 reports the same outcomes when the treatment group is the whole network of political opponents i.e. individuals whose collaboration index with perceived opponents is above the median. We find similar results, for both the total number of collaboration and the number of new collaboration, although they are of smaller magnitude compared to researchers representing the "core" of political opponents. Authors with above-median collaboration with perceived political opponents have about 16% fewer co-authors per year on average, which corresponds in level in 1 fewer co-author per year. The decomposition per mandates again shows that this effect intensifies over the years, with stronger effect for latest mandates. This attenuation from the core to the broader network of perceived political opponents is consistent with Figure C.1.3, which shows that authors at the centre of the opponents' network (i.e. with a higher collaboration index) are more affected in their number of collaboration than those at the periphery.

5.2.3 Loss of Influence

While network reallocation must explain part of the effect, we also find that the influence of political opponents on Hungarian research decreases during the post-2010 period. In the Hungarian national repository data, we have access to the number of citations received by a publication from other publications of the database. We measure quality through the citations received globally by the journal or venue of publication. Citations from the rest of the world would be a measure of quality as well, but we consider that citations within Hungary also account for a different component, influence within the country. If all things equal, a researcher is less likely to cite a publication because it comes from a disregarded group, or more likely to cite it because one of the author is favoured by the government, then the resulting difference in citations is not due to a difference in quality but rather in how influential the researcher is in the country.

Figure E.3.5 shows that there is a significant negative effect in an OLS specification of Equation 1,

[30] In Slovenia, Slovakia and Czechia, other Central European countries that entered the European Union at the same time as Hungary.

Table 2. Allies and Opponents: Effect on Network and Influence

	Nb. co-authors		Nb. new collaborations		Repeat collab. rate		Nb. citations	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Opponents × Post	-0.288**		-0.337***		0.049		-0.195	
	(0.134)		(0.124)		(0.034)		(0.128)	
Allies × Post		0.041		0.023		-0.026		0.030
		(0.107)		(0.123)		(0.024)		(0.153)
Mean.Dep.Var.Pre	1.47	13.2	1.14	6.01	0.214	0.517	11.7	91.1
Observations	9,942	4,466	9,743	4,413	3,987	3,334	8,818	4,334
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Year-Entry year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Year-Field fixed effects	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those perceived as political opponents (first line) and as political allies (second line). Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total number of co-authors (columns 1-2), total number of new co-authors (columns 3-4), number of co-authors with whom the researcher has already collaborated before (columns 5-6) and citations from other MTMT publications (columns 7-8). The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

reaching around −8 citations received by members of the network of perceived political opponents per year over the period, and seems to decrease right after 2010. However, the effect is no longer significant for the entire period when using a PPML specification, as shown by Table 3; the effect is still increasing over time but no longer significant for most periods. However, we find the same attenuation pattern from the core to the broader network as with the effect on the number of collaboration, as reported in Figure C.1.3. Authors with a higher collaboration index are more negatively impacted than those at its periphery in terms of influence within Hungary. Conversely, Table 2 and Table E.3.5 show that both for the ally researchers and for their network, we do not find a positive effect mirroring the decrease in citations for members of the network of perceived political opponents. The channel of influence over science only appears to be relevant for political opponents: researchers in Hungary are not more likely to cite political allies of the government after the shock.

So far, researchers are purely an object and not an agent for all of those three potential channels. Yet, we believe that scientists who are subjected to political pressures may change their behaviour in order to respond to them. These actions would both affect the productivity of researchers in discernible ways, but they would also incur additional costs of reacting to the shock. It is therefore necessary in order to fully understand the effect of political threat to study these individual reactions.

Table 3. Collaboration and Influence - Opponents Network

	Nr Coauthors		Nr New Collaborations		Citations	
	(1)	(2)	(3)	(4)	(5)	(6)
Network pol. opp. × post	-0.176***		-0.164***		-0.060	
	(0.036)		(0.041)		(0.045)	
Network pol. opp. × post (1rst m)		-0.120***		-0.144***		-0.064
		(0.030)		(0.039)		(0.042)
Network pol. opp. × post (2nd m)		-0.204***		-0.175***		-0.108**
		(0.038)		(0.044)		(0.051)
Network pol. opp. × post (3rd m)		-0.223***		-0.197***		-0.110*
		(0.047)		(0.051)		(0.066)
Network pol. opp. × post (4th m)		-0.237***		-0.225***		-0.055
		(0.060)		(0.075)		(0.106)
Mean dep. var. (pre)	6.216	6.216	3.271	3.271	38.217	38.217
Observations	75,087	75,087	74,579	74,579	72,738	72,738
author fixed effects	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as political opponents is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total number of co-authors (columns 1-2), total number of new co-authors (columns 3-4), and citations from other MTMT publications (columns 5-6). The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Odd columns report the average effect on the period 2010-2024 and even columns split the effect by mandate. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

6 Academic Strategies under Political Pressure

We now present evidence of different behavioural strategies among targeted researchers. We draw on the *Exit, Voice, Loyalty* framework from Hirschman (1972), for which our context provides a suitable empirical test: when in disagreement with an organisation, an individual may choose among different courses of action. In our setting, academics facing political threats and increasing pressure of an illiberal government may react in different ways. We therefore test empirically for three distinct strategies. First, a researcher may *exit*, i.e. quit her position or leave the country. Second, she may *voice* her dissent. Finally, she may remain *loyal* and comply with the new research requirements. We nuance this third strategy and show that, rather than becoming fully silent, researchers are likely to self-censor.

6.1 Exit Hungary, Exit Research

We first assess how frequently targeted researchers resort to the "Exit" strategy. In our context, we consider two types of observable outcomes as exit. The first is leaving academia. As we do not observe the actions of researchers outside of publishing, we consider that a researcher "retires" when we do not observe her publishing after a given year. The second consists in leaving the country. Similarly, while we do not observe the actual migration decisions and their timing, we have access to researchers' affiliations

for most publications in OpenAlex. Based on this information, we infer whether they have an affiliation in the country, outside the country or both. For both types of outcomes, their existence is not only relevant to our understanding of reactions of individuals to illiberal policies. These actions have a direct effect on the total production of the country's research and innovation ecosystem, and can thus be interpreted as a loss in human capital. Again, we do not restrict our analysis to researchers who are directly perceived as political opponents and include in our regressions researchers who belong to their network as defined in section 4.1.1. This allows us to study a more realistic picture of the effect of political pressures and how they propagate, while increasing our statistical power.

We estimate again Equation 1 as a linear probability model, with variables measuring exit as the outcome. We present the results of these regressions in Table 4. We first find that there is no increase in the probability of leaving research altogether: this does not appear to be a margin through which targeted researchers respond. Figure 4a shows that descriptively, we observe a pattern of increased exits from the country among members of the network of political opponents, measured by the probability of having an affiliation abroad for a period of four years. This holds true in the difference-in-difference specification: Figure 4b shows that on average, this probability to exit increases by about 5 percentage points at the end of the period. For shorter periods of continuous presence abroad, this effect becomes significant as soon as the second mandate of Orbán, prior to the ban of the Central European University, suggesting that we do not only capture the effect of government policy, but also of actions chosen by researchers. The effect is also very strong, reaching over 50% of the pre-period average at the second mandate only. It rises starkly during the third mandate, after the ban: we believe that this increase, which remains stable over the last period, reflects the expulsion of the CEU, which has further incentivised researchers to leave.

In order to validate our findings, we run the same regressions using as a treatment whether the researcher is part of the network of political allies of the government. If what we're observing in the aforementioned regressions is mechanical and due to our selection process - that is, if what we observe is researchers connected to internationally connected researchers leaving more often, we should also find a positive effect on exit outcomes. If what we have shown above indeed represents a strategy of reacting against political pressure, we should find no effect on the network of ally researchers. In Table F.2.1, we show that there is no significant effect on migration or retirement decisions for members of the network of ally researchers. We interpret this finding as additional evidence that we are accurately capturing strategies of politically targeted researchers.

Figure 4. Effect on the Probability of Leaving Hungary



(a) Groups trends

(b) Difference in Probability

Note: Panel a) represents the difference in trends in probability of being away from Hungary over four continuous years in OpenAlex data, between researchers perceived whose collaboration index with researchers perceived as political opponents is above median, and control authors. The latter are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Pane b) shows the results from Fixed-Effect OLS regressions of the same variable. The unit of observation is author by year and the sample period is 2005–2024. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author.

Table 4. Political Opponents Network: Migration and International Collaboration

	Migration				Collaboration					
	Any affil. abroad		Abroad (2y)		Intl. collab.		Regional collab.		Retiring	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Network pol. opp. × post	0.051***		0.030***		-0.115		-0.017		-0.0002	
	(0.019)		(0.011)		(0.131)		(0.062)		(0.0009)	
Network pol. opp. × post (1rst m)		0.017		0.0002		-0.331**		-0.056		0.0005
		(0.019)		(0.009)		(0.131)		(0.052)		(0.001)
Network pol. opp. × post (2nd m)		0.067***		0.032**		-0.037		0.030		0.0001
		(0.021)		(0.013)		(0.151)		(0.069)		(0.001)
Network pol. opp. × post (3rd m)		0.075***		0.051***		-0.042		-0.026		-0.0009
		(0.026)		(0.017)		(0.167)		(0.083)		(0.001)
Network pol. opp. × post (4th m)		0.050		0.057***		0.015		-0.053		-0.0009
		(0.035)		(0.019)		(0.188)		(0.124)		(0.002)
Mean dep. var. (pre)	0.156	0.156	0.063	0.063	0.313	0.313	2.146	2.146	0.360	0.360
Observations	71,528	71,528	128,772	128,772	69,048	69,048	123,797	123,797	128,772	128,772
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on data from OpenAlex. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as political opponents is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. First panel reports the effect on migration: probability of having an new affiliation outside of Hungary (columns 1-2), the probability of publishing abroad over 2 years (columns 3-4). Second panel, reports the effect on number of publications with researchers outside Hungary. Last column shows the probability of retiring i.e. not publishing any more. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

6.2 Voicing Dissent

The struggle between the Central European University and the Hungarian government was particularly visible, and researchers from the CEU have been outspoken in the media against this decision[31]. More generally, voicing could be undertaken via social media posts, protests or interviews with traditional media. While academic publishing could be more rare, it is still a common practice in social science, and represents a large, costly effort toward voicing. Researchers in social science may redirect their research in order to study a particular aspect of the regime and use their research to voice directly, which could be interpreted as a "lower bound" effect of all type of the voicing behaviours.

In this section, we thus provide evidence that researchers subjected to political pressures have shifted research direction in order to speak out against the government. We estimate again our main equation Equation 1, but on total number per author of four different subsets of publications which we consider as indicative of voicing activity[32]. The two first are the gender topics and sensitive topics defined earlier. We add to them two narrower types of topics:

- *Rule of law*: One of the key elements of Orbán's illiberal policies was disregard of the rule of law. This strategy was both openly embraced by the government and noted by its critics, including the European commission. Emphasis on the rule of law and illiberalism from political opponents can therefore be considered as direct voicing, as it targets one of the salient political features of the government.

- *Minorities*: Another salient element of illiberal policies in Hungary consisted in targeting minority rights or attacking them in the media. Examples include the passing of a law similar to Russia's anti-"homosexual propaganda" law, or the vilification of Soros reactivating antisemitic stereotypes. We consider that publications explicitly mentioning minority rights are likely to be opposed to the government.

We detail in Appendix C.2 how we define such variables using the vocabulary use in the publication title. Members of the network of political opponents strongly increase their total number of publications in which the lexicon of the "rule of law" appears, as early as during the first years post 2010, as shown in Figure 5. Again, the magnitude of the positive effect we find increases over the years, suggesting that the higher the political pressure, the more likely academics perceived as political opponents are likely to express their dissent. We also note this trend does not diminish after 2018, suggesting that these researchers have largely chosen to "voice" their dissent rather than adopt a strategy of "loyalty". Additionally, we show in Table F.1.1 that this behaviour is not only driven by neither the Central European

[31] For instance, the New York Times published a widely read article in 2018 including a statement from the president of the university (Santora, 2018).

[32] In this section, due to the small number of researchers who publish in any of these subsets, all results are estimated using two-way fixed effects OLS rather than PPML.

University members nor by researchers working with NGOs, but that both show an increase in the number of publications relative to the current democratic backsliding. In that respect, our results indicate that at first glance, political pressure appears relatively ineffective at fully silencing those perceived political opponents. Conversely, ally researchers and their network do not show similar results[33].

Table 5. Political Opponents Network: Voicing Behaviours

	Rule of law (EN) (1)	Rule of law (HU) (2)	Minorities (EN) (3)	Minorities (HU) (4)	Sensitive (EN) (5)	Sensitive (HU) (6)
Network pol. opp. × post	0.0174***	-0.0040	0.0044***	-0.0103***	0.0185***	-0.0306***
	(0.0032)	(0.0033)	(0.0013)	(0.0034)	(0.0040)	(0.0055)
Observations	226,224	226,224	226,224	226,224	226,224	226,224
R^2	0.303	0.319	0.215	0.302	0.286	0.288
Within R^2	0.001	0.000	0.000	0.000	0.000	0.000
Pre.Mean.Dep.Pre	0.011	0.034	0.004	0.041	0.040	0.112
Author FE	✓	✓	✓	✓	✓	✓
Year × Field FE	✓	✓	✓	✓	✓	✓
Year × Entry year FE	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on CRIS data. The unit of observation is author by year. Treated authors are those belonging to the network of political opponents, as defined in subsection 4.1. The dependent variables are indicators for publishing on rule-of-law topics, minority-related topics and sensitive topics, separately for English-language (EN) and Hungarian-language (HU) publications. All specifications include author, year × field and year × entry-year fixed effects. Standard errors are clustered at the author level and reported in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

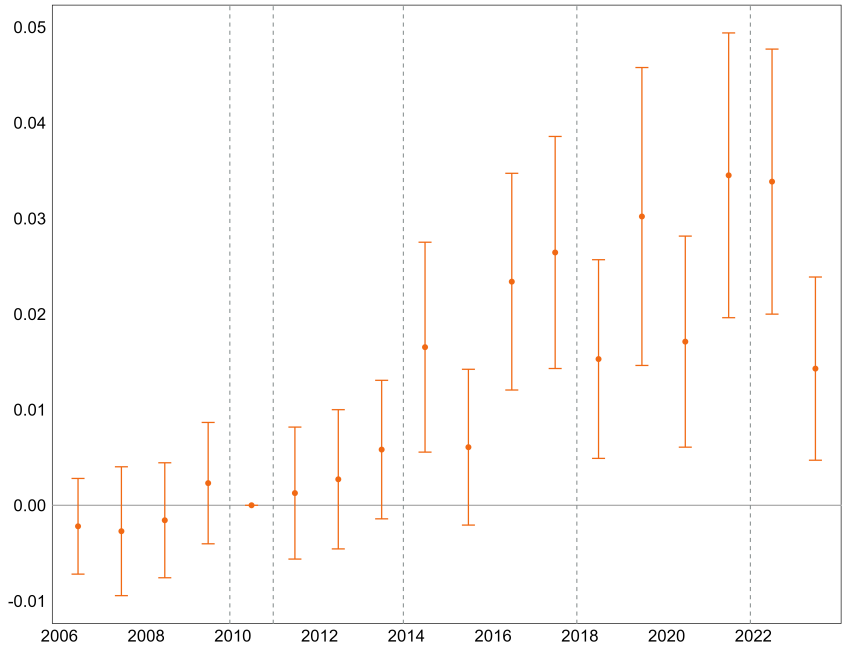
We also estimate the same equation as above, splitting further publications by language. Table 5 shows that voicing only occurs in English. For minority-related and sensitive topic publications, the effect actually becomes negative in Hungarian. This recontextualises the results described above: while researchers are more likely to voice overall, this is only due to the fact that they are doing so in publications visible internationally, while instead refraining from voicing in publications within the country. To some degree, these results show that while researchers voice their dissent to international audiences, they seem to be effectively silenced within Hungary. Our interpretation is that the behavioural responses of researchers are interconnected: those expressing dissent against illiberal policies may choose to do so in ways that do not attract negative attention of national authorities, as publishing in Hungarian could. We further investigate this phenomenon in the next section.

6.3 Between *Loyalty* and *Silence*: *Self-censorship*

We consider in this section that there might be an alternative strategy of academics, between *loyalty* and *silence*, which is likely to be *self-censorship*. Kováts and Rónay (2021) show qualitative evidence that academics may feel the need to self-censor in their research not to attract negative attention.

[33]See Appendix F for more details

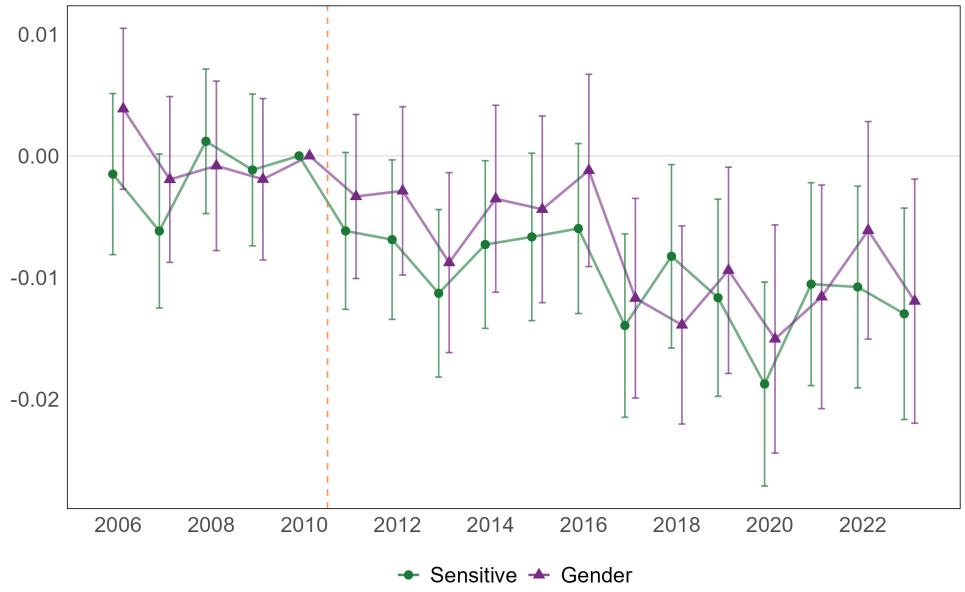
Figure 5. Effect on the Number of *Rule of Law* Publications (EN).



Notes: The graph above reports Fixed-Effect OLS regression estimates for the difference in the total number of publications by year for researchers we identify as political opponents, compared to other Hungarian researchers for the period 2006-2023. Authors are matched using their number of publications over the period 2000-2005, their main field of publication and their year of entry in academia.

We focus in this section on researchers working on targeted topics, namely sensitive and gender-related topics, and analyse to what extent we can observe patterns indicating self-censorship among these researchers. While this phenomenon is by definition hard to measure, we attempt to do so looking at the textual content of research papers, especially looking at how researchers in targeted topics are more likely to change research direction after 2010 and publish less similar research as before. In order to do so, we estimate the same specification as before, using the targeted-topic treatment defined in subsubsection 5.1.2: a researcher is treated if they have at least three publications in the targeted topics prior to 2005. The main outcome of interest is the cosine similarity between a researcher's current publications and their own research published in 2005 or earlier[34]. A positive effect on this measure would indicate that treated researchers "go deeper" into their existing research direction, or into the way they frame their research, relative to neutral researchers. However, a negative effect would indicate that they deviate from their previous research more than control researchers do, which could indicate either self-censorship or alternatively alignment with the research agenda of ally researchers.

Figure 6. Effect on Research Similarity with pre-2005 Publications - Gender and Sensitive Topics



Notes: The graph above reports Fixed-Effect OLS regression estimates for the difference in the similarity measures for researchers publishing in gender related topics or in sensitive topics, compared to other Hungarian researchers for the period 2006-2023. Authors are matched using their number of publications over the period 2000-2005, their main field of publication and their year of entry in academia.

Table 6 reports the aggregated treatment effects for researchers working on gender-related topics, both pooled over the post-2005 period and separately by government mandate. We identify different patterns. First, the similarity of researchers' Hungarian-language publications with their own pre-2005

[34]For robustness, we build similar measures using the similarity with one researcher's own publications up to 2010, between 2000 and 2005 and between 2005 and 2010.

research declines significantly after treatment as shown in the first two columns, with the magnitude of the effect growing across mandates, from −0.004 during the first mandate to −0.012 during the fourth. Second, as it can be seen in the next two columns, the similarity of their English-language publications with their pre-2005 research remains stable, and if anything increases slightly: treated researchers do not seem to abandon their original research agenda in their international publications. Third, similarity with the research of government-allied researchers also decreases, again with a magnitude that grows over successive mandates (see column (5) and (6)).

Taken together, these results indeed point to an "in-between" strategy consistent with self-censorship. Targeted researchers neither converge towards the research of political allies nor fully maintain their previous research direction in domestically visible output. Instead, they appear to adjust the content of their Hungarian-language publications away from their earlier, politically sensitive work, while preserving their research agenda in English-language, internationally oriented publications. Figure 6 shows that the corresponding event-study estimates display no differential pre-trends, supporting a causal interpretation.

These results are consistent when using alternative treatment definitions (see subsection F.4). [2]These findings are consistent when replicating the analysis using working on sensitive topics as treatment, as reported in subsection F.4. We obtain comparable results in magnitude for these researchers, whereas no such pattern emerges for topics that do not seem as much politicized in the Hungarian context, such as research on climate change.

In addition, we estimate a triple difference-in-differences specification comparing researchers publishing on targeted topics in Hungary with their counterparts in the other countries for which we collect CRIS data, namely Slovenia and Croatia. These additional results confirm that our findings are not driven by a general trend in research topics: researchers working on gender in Hungary become less likely to continue publishing on the topic, relative both to Hungarian researchers in other fields and to gender researchers in the comparison countries. Figure F.4.1 shows the event-study estimates of the triple interaction for the probability of publishing work labelled as *gender* after 2010. Targeted researchers experience a sharp decline in this probability, of around 4 pp on average, with the effect growing in magnitude over time.

Table 6. Researchers Working on Gender: Research Similarity

	sim. pre-2005 (HU)		sim. pre-2005 (EN)		sim. Ally	
	(1)	(2)	(3)	(4)	(5)	(6)
gender × post	-0.006***		0.001**		-0.005**	
	(0.002)		(0.0005)		(0.002)	
gender × post (1rst m)		-0.004**		0.0006		-0.0004
		(0.002)		(0.0004)		(0.002)
gender × post (2nd m)		-0.007***		0.001*		-0.007**
		(0.003)		(0.0005)		(0.003)
gender × post (3rd m)		-0.010***		0.0008		-0.013***
		(0.003)		(0.0006)		(0.004)
gender × post (4th m)		-0.012**		0.002**		-0.014**
		(0.005)		(0.0009)		(0.006)
Mean dep. var. (pre)	0.819	0.819	0.843	0.843	0.771	0.771
Observations	204,954	204,954	164,034	164,034	93,887	93,887
Author fixed effects	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓

Note: This table gathers the FE OLS regressions for gender-topic researchers. Columns (1)–(2) report estimates for the similarity of Hungarian-language publications with the researcher's own pre-2005 publications, columns (3)–(4) show the estimates for the similarity of English-language publications. Columns (5)–(6) for the similarity with the current research of government-allied researchers. Odd columns report the average post-2010 treatment effect and even columns report the decomposition of this effect by mandate. All specifications include author, cohort × year and field × year fixed effects. *** p<0.01, ** p<0.05, * p<0.1. *** p<0.01, ** p<0.05, * p<0.1.

7 What Is the Global Effect of Illiberal Policies?

In this section, we describe the overall trends in Hungarian academia since Viktor Orbán's election in 2010. While the previous section focuses on estimate equation 1 to compare the career trajectories of researchers exposed to illiberal policies with those of researchers not exposed, results presented in this one allow us to characterize the global effect of illiberal policies by comparing Hungarian researchers versus their counterparts in neighbouring countries.

7.1 Research Productivity, Research Quality

We first focus on the *cross-country sample in national databases* to measure the impact of the shock on individual research productivity and quality. We show that while research productivity increases by national measures, its presence in international data as well as its quality decline. Figure 7 and Table 7 show that compared to researchers in foreign countries, the number of publications per year by Hungarian researchers increases over the period. We measure an effect of around 0.15 per year on average as soon as 2013 and it is clear that researchers appear to have been incentivized to produce a higher number of publications. However, Figure 7 also shows that this increase can almost fully be accounted for by the number of publications in the researcher's "national language" (in our case Hungarian), while if anything, the effect on the number of publication in English is not significant. This effect is consistent with the policies that have been implemented in order to incentivise researchers to publish in national journals and furthermore in Hungarian, and those that we found on ally researchers in the section above.

While the quantity of publications does not decrease, we show that the quality of the publications of Hungarian researchers appears to decline. Table 7 shows our results on outcomes linked to quality of research. In particular, the number of papers published in the top 1% most cited sources decreases. This result can be extended to the number of publications in the top 5% of most cited journals and to the number of publications in top 10% cited journals. Again, the effect that we measure is higher for the latest years: Hungarian researchers already produce 25% fewer publications in top 10% journals per year relative to the control group during the first mandate (column 8), but almost 60% fewer during the third mandate. While most of the journals at the top of the citations distribution tend to be in the English language, the effect that we measure on the quality of Hungarian researchers cannot be imputed to a decrease in English-language publications in the national repositories we use, as these do not decline. The change of trend in the composition of rank of sources in publications increases from 2014 onwards, which suggests that this change is related to the introduction of the chancellor system, and increases after 2018 and the start of "regime change" of academia, as it can be seen Figure 7. Consistently, we find that the number of publications in the 50% least cited sources increases and follows a dynamic similar to the number of top publications with again an intensification of the effect through the years.

Again, the production of lower quality research could be caused by lower funding. In the context of the European Sovereign debt crisis, the Hungarian government has been undertaking efforts in order to lower the level of public expenditure in addition to organizational reforms. While it is probable that research has suffered from austerity due to decreasing funding, due to lack of access to individual funding data, we cannot find any causal result on that front. However, we believe that there is no evidence that researchers have overall been disproportionately affected by cuts in spending at the aggregate level compared to their counterparts in other Central European countries.

We conclude from these results that while total productivity seems to have been affected positively for Hungarian researchers, this happened mostly in their own language and to the detriment of their international stature. They are less likely after 2010 than comparable foreign researchers to publish in the top journals in their field.

Table 7. Effect on Research Quantity, Network and Research Quality

	Panel A: Research Quantity and Network					*Panel B: Research Quality*			
	Pub.	Pub. En.	Pub. nat. lang.	Coauthors	New Coauth.	Pub. Top-1	Pub. Top-5	Pub. Top-10	Pub. Bottom-50
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
hungary × post (1rst m)	0.1045***	-0.0742**	0.1648***	0.1835***	0.1841***	-0.4584**	-0.3714***	-0.2884***	0.1654***
	(0.0219)	(0.0363)	(0.0250)	(0.0308)	(0.0324)	(0.2046)	(0.1122)	(0.0912)	(0.0386)
hungary × post (2nd m)	0.1641***	-0.0186	0.2491***	0.3658***	0.3722***	-1.5112***	-1.0188***	-0.8104***	0.3393***
	(0.0270)	(0.0417)	(0.0304)	(0.0366)	(0.0377)	(0.3094)	(0.1899)	(0.1584)	(0.0539)
hungary × post (3rd m)	0.1092***	-0.0210	0.2455***	0.4412***	0.4898***	-1.3312***	-1.2065***	-0.9020***	0.3866***
	(0.0297)	(0.0442)	(0.0333)	(0.0403)	(0.0412)	(0.2870)	(0.1763)	(0.1535)	(0.0589)
hungary × post (4th m)	0.2026***	0.0991*	0.2948***	0.6001***	0.6952***	-1.0820***	-0.6163***	-0.5770***	0.5854***
	(0.0379)	(0.0551)	(0.0439)	(0.0501)	(0.0586)	(0.3515)	(0.2267)	(0.1964)	(0.0735)
Observations	225,469	159,735	189,190	216,516	209,502	16,176	38,986	54,245	171,885
Adj. Pseudo R^2									
Squared Cor.									
Pre-period mean	0.684	0.146	0.457	0.538	0.342	0.016	0.039	0.056	0.246
Author FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-Field FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-Entry year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect Poisson regressions on data from CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2023. Treated authors are from Hungary; control authors are Slovenian and Croatian researchers matched to the treated. Panel A reports the effect on research network outcomes (number of co-authors and number of new co-authors); Panel B reports the effect on research quality outcomes (number of publications in the top 1% and top 5% most cited journals, and publications in the bottom 50% least cited journals).Each column reports the decomposition of the treatment effect by political mandate. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

7.2 Decoupling of Collaborations: National and International Network

We now focus on the effect of illiberal policies on researcher network. Table 7 shows that researchers affected by illiberal policies on average publish more frequently with other researchers in their own country compared to control researchers after 2010[35]. Coefficients reported in this table shows results obtained

[35]See Figure G.2.1 for the event-study graph corresponding with total number of co-authors and total number of new collaborations as main outcomes.

with CRIS data, thus representing only the effect on the *national network* of Hungarian researchers. This is both true when looking at the total number of co-authors and at the number of new collaborations. On average, after 2010, a Hungarian researcher has 3 more co-authors each 5 years compared to a Slovenian or Croatian author. This effect is quite important and represents almost a 50% increase for both total and new collaborations during the second mandate's period. Since the number of collaborations that we capture here are by definition only collaborations with other "national" authors, we believe that this result constitutes further evidence of increased isolation of Hungarian science.

We further consolidate this hypothesis by using the variables related to the number of international publications and collaborations of our *cross-country sample in OpenAlex*. Our finding about network contraction at the international level is thus reinforced by the result shown in Table 8. The number of international publications – publications with authors outside of their own country– diminishes for Hungarian authors compared to control authors. The effect estimated follows a similar pattern to those measured for both research quantity and quality, that is to say an intensification of the effect through Viktor Orbán's mandates. We believe that this effect is consistent with the effect we measure using national repositories and reflects a decoupling of collaboration between "national" collaborations and "international" collaborations.

7.3 Exit Through International Mobility

We also examine *exit* strategies of researchers compared to their control counterparts. We thus use the information available in the cross-country sample in OpenAlex to analyse the patterns of migration of researchers and find that researchers appear to emigrate more compared to foreign counterparts. First, we find no effect on the instantaneous probability of publishing with another affiliation outside of the home country. However, Table G.1.1 shows that the probability of not publishing for four consecutive years in Hungary increased for Hungarian authors compared to the same probability in other Central-Eastern European countries authors. While this probability is raised only by 1pp, which is not very high in absolute value, it still represents 25% of the average of the variable before the shock (2006-2010). This is also the case for the probability of not publishing for three and two years in the home country. Overall, although the effect on emigration in absolute value is moderate, it is still non-negligible relative to the baseline variable.

Finally, we look at the probability of *exiting* not only through having another affiliation outside the country but through leaving academia. We measure this phenomenon with a variable that is equal to 1 the year the researcher exits academia i.e. does not have any additional publication after this date. The estimate reported in Table 8 indicates that Hungarian researchers are 0.77 percentage points more likely to exit per year relative to the control group after 2010. This rate is on average of 2.68% in Hungary and of 2.82% in control countries. This effect thus corresponds to a 29% increase in the probability of exiting.

The disaggregated results per mandate reveal that this effect intensifies over time: by the third electoral mandate, the treatment effect reaches 1.24 percentage points, equivalent to a 46% increase relative to baseline for the period 2019-2022, which is again consistent with an increasing effect that is strongly correlated with the intensity of the political pressure.

Table 8. Effect on International Collaboration and Migration

	Affil. other country		Id. four years		Intl. Collaborations		Exit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
hungary × post	-0.0006		0.0134***		-0.0592***		0.0077***	
	(0.0035)		(0.0036)		(0.0221)		(0.0021)	
hungary × post (1rst m)		0.0040		0.0108***		-0.0156		0.0034
		(0.0036)		(0.0033)		(0.0178)		(0.0025)
hungary × post (2nd m)		-0.0014		0.0156***		-0.0810***		0.0066*
		(0.0044)		(0.0045)		(0.0275)		(0.0026)
hungary × post (3rd m)		-0.0047		0.0162***		-0.0791**		0.0124***
		(0.0060)		(0.0050)		(0.0317)		(0.0031)
hungary × post (4th m)								0.0098
								(0.0075)
Observations	203,938	203,938	203,938	203,938	203,938	203,938	114,354	114,354
R^2	0.467	0.467	0.698	0.698	0.533	0.533	—	—
Within R^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean Dep. Var. (Pre)	0.087	0.087	0.052	0.052	0.190	0.190	0.027	0.027
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓	✓	✓

Note: results are from Fixed-Effect OLS regression, for each outcome, on data from OpenAlex. The unit of observation is author by year and the sample period is from 2006-2019. Treated authors are authors from Hungary. Control authors are Slovenian researchers matched to the treated. The dependent variable is an indicator variable taking the value 1 if the author publishes with an affiliation outside of Hungary for the treated and Slovenia and Croatia for the control after that date for a given year (column (1)) and for four consecutive years (resp. columns (2), (3), (4)), and another indicator variable taking the value 1 if the author is never seen publishing with an affiliation in Hungary for the treated and Slovenia for the control after that date (column (5)). Control variables account for trends for the matching cell over time.. Control variables account for trends for the matching cell over time. Standard errors (SE) are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

7.4 Aggregate Losses of Political Pressures

Beyond the estimation of micro-effects at the individual level, we want to assess the cumulated macro effect of illiberal policies on the aggregate output of research and the stock of researchers over the entire period. In this exercise, because we estimated these effects only on researchers entering after 1989 and before 2010, we focus on this population of researchers and apply our estimates to their entire numbers. Table 9 reports our calculations.

For each variable, in column 2, we report the coefficients estimated in the individual-level of Equation 1 in our cross-country sample. Because most of them are obtained through PPML regression, we also report the corresponding effect in percentage in the third column. We then apply this percentage effect to the

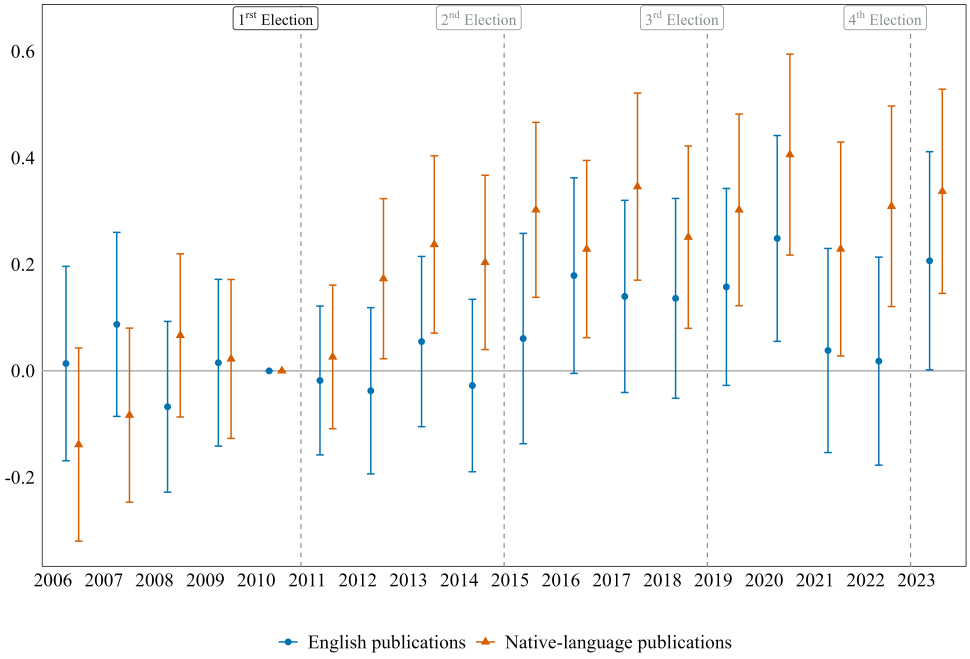
pre-shock average, discarding the potential growth unrelated to policy change in academic productivity in the later period. We then multiply this per-person effect by the number of active researchers during the period and the number of years after the shock, reported in the Global Effect column (GE). However, this calculation does not take into account the fact that a share of the considered researchers exits from our database (either because they no longer publish, or because they are no longer in Hungary). This effect therefore no longer applies to them. We present the same calculations, taking into account exits year by year in column 6, GE (corrected). Finally, the last column shows the ratio of column 5 to the total outcome over the entire period. The rise in Hungarian-language publications estimated at the individual level translates to between 35000 and 50500. The rise in publications in the 50% least-cited sources in OpenAlex reaches about two fifths of that, between 15000 and 22000. While the total number of lost publications in the top 1% and 10% of papers is much lower, they still account for a loss of 8% and 6% of all such papers. Given that these estimates are substantial, we believe that our paper documents a real shift in the composition, quality and international exposure of Hungarian research. We further estimate that the exits that are due to illiberal policies represent around 10% of all exits during the period.

Table 9. Aggregate Effects on Hungarian Academia

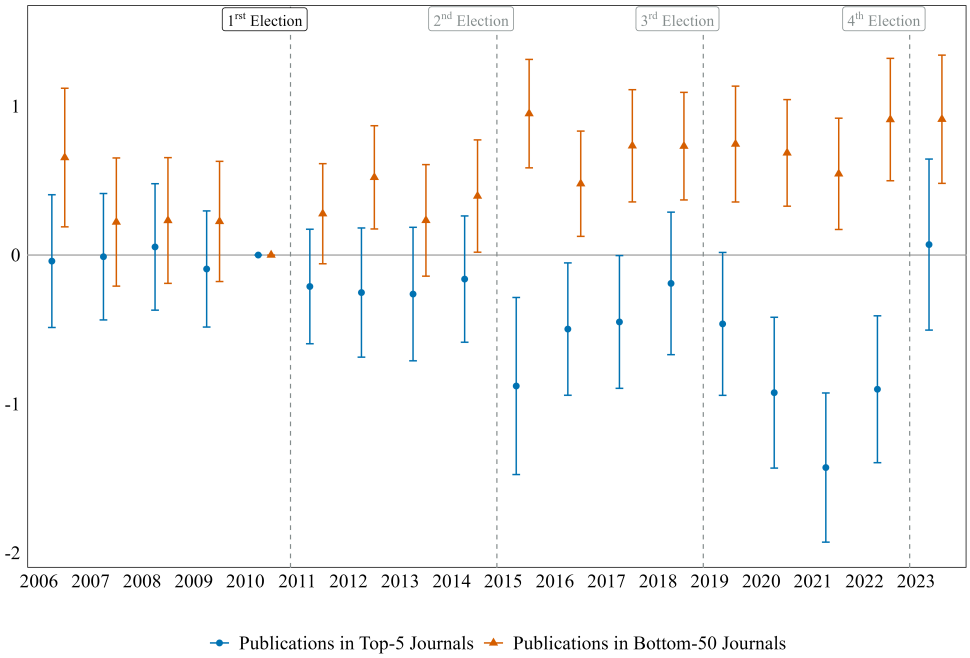
	Coefficient	Effect	Per-person/year	GE	GE (corrected)	GE/Total (%)
Pub. Hungarian	0.4191^{***}	52.1%	0.18037	50417.6	35031.8	11.9%
	(0.0530)					
Top 1% Pub.	-1.4588^{**}	−76.7%	−0.00818	−2286.7	−1588.8	−7.9%
	(0.4695)					
Top 10% Pub.	-0.8115^{***}	−55.6%	−0.02259	−6315.3	−4388.1	−5.8%
	(0.1641)					
Bottom 50% Pub.	0.4095^{***}	50.6%	0.07916	22126.2	15374.0	10.5%
	(0.0627)					
Exit Probability$^{(a)}$	0.0077^{***}	0.77 pp	0.00766	1610.2	1487.7	10.1%
	(0.0021)					

Notes: Coefficients are estimated via PPML (Poisson) or OLS (LPM) comparing researchers in Hungary with researchers in control countries. The estimation includes individual, year × field, and year × entry cohort fixed effects. Standard errors are clustered at the individual level. $^{(a)}$ Variables marked with (a) are estimated using a Linear Probability Model (LPM). *GE (total)* aggregates yearly effects $\sum_t (e^{\hat{\beta}} - 1) \times \bar{y}_{\text{pre}} \times N_t^{\text{total}}$ over entry cohorts 1990–2005. *GE (migration)* applies the same formula restricting N_t to researchers not yet migrated at year t. *GE/Total (%)* expresses *GE (total)* as a share of the total observed outcome: for publication outcomes, the denominator is the actual sum of publications by treated researchers in the post-period; for LPM outcomes (exit, migration), it is the number of treated researchers who experienced the event.

Figure 7. Effect on the Quantity and Quality of Research



(a) Effect on Publications, by Language



(b) Effect on Publications, by Journal Rank

Notes: The figure reports estimates from Fixed-Effects PPML regressions using data from CRIS national repositories. The outcomes are (i) the number of publications by language and (ii) the number of publications by journal rank over the period 2006–2023. Treated authors are researchers based in Hungary, while the control group consists of matched researchers from Slovenia and Croatia. The outcome variable is winsorized at the top 1 percent of its distribution to limit the influence of extreme values.

8 Conclusion

Our work shows how illiberal policies and political pressure can have a direct impact on researchers. We take the example of Hungary as a particularly relevant context and a quasi-natural experiment, in order to measure how such pressures on researchers can impact the quantity and quality of research. We first show that in Hungary, researchers are negatively affected by illiberalism based on their perceived political involvement. We show that researchers perceived as political opponents are negatively impacted in their research outcomes, both in quality and quantity, and are also more likely to stop publishing in Hungary. Academics that we identified as opponents also observe a contraction of their network within Hungary, suggesting that political pressure indeed makes collaboration more difficult for targeted individuals. While illiberal regimes often consider silencing political elites as a major aim, in the Hungarian context, targeted researchers have been more likely to publicly show their opposition to the regime, which we interpret as the choice to *voice* against it in the "Exit, Voice, Loyalty" framework. Finally, we show that researchers that have been working on topics at odds with the politics of the government, for instance related to gender, also experience a negative shock and are likely to self-censor to avoid repression. We finally show that there is a strong negative impact of illiberalism on the international position of Hungarian academics by comparing the trajectory of Hungarian researchers to the trajectory of researchers from other comparable countries. Hungarian researchers collaborate more with their national fellows to the detriment of their international collaborations. Overall, we document a decrease in the quality of research after 2010 and that Hungarian researchers are altogether more likely to leave the country.

We believe that our work is particularly relevant in a context in which rising political forces increasingly uphold the policies implemented in Hungary as a model to look up to. It contributes to an understanding of how not only the degradation of official, legal institutions but also the political atmosphere they generate can foster (or deter) innovation and the production of new ideas. While we recognize that our findings may not be fully generalizable to all contemporary political environments, the targeting of academics is often among the earliest signs of a shift toward illiberalism. Our results suggest that academia, as an organized system for producing innovation through individual researchers, remains sensitive to political pressure, even in regimes that occupy the middle ground between full autocracies and liberal democracies. The increasing popularity throughout all democracies of political parties that advocate for similar regimes is therefore a strong concern for future innovation.

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Appendix

This Appendix presents further details on the political background, data collection, construction of variables, additional results and all robustness checks.

- Appendix A gives more details on the political context of Hungary and the state of academia before and after the 2010 elections. It also gives more detail on the case of the Central European University and descriptive statistics on the situation of the university.
- Appendix B provides a detailed explanation of the different data sources we collected and the harmonization process we performed up to our final data set.
- Appendix C is the appendix regarding the definition of samples of politically aligned or non-aligned researchers and their network.
- Appendix D provides more information and descriptive statistics about our measures of research direction.
- Appendix E presents complementary results that support the results we present in the main text about research outcomes for politically aligned researchers.
- Appendix F shows additional results about strategies of politically aligned researchers.
- Appendix G shows additional results on the global effect of illiberal policies and the comparison between Hungary and other Central-Eastern European countries.
- Appendix H presents robustness exercises.

A Political Background and the State of Academia in Hungary

In this section, we provide additional resources and descriptive statistics on the state of academia in Hungary (Appendix A.1) as well as on the particular case of the Central European University (Appendix A.2), about which we we display some descriptive statistics.

A.1 Descriptive evidence of the impact of illiberalism on Hungarian academia

We first present aggregate evidence and contextual information on the overall state of Hungarian research before and after 2010, marking the beginning of illiberal policy implementation.

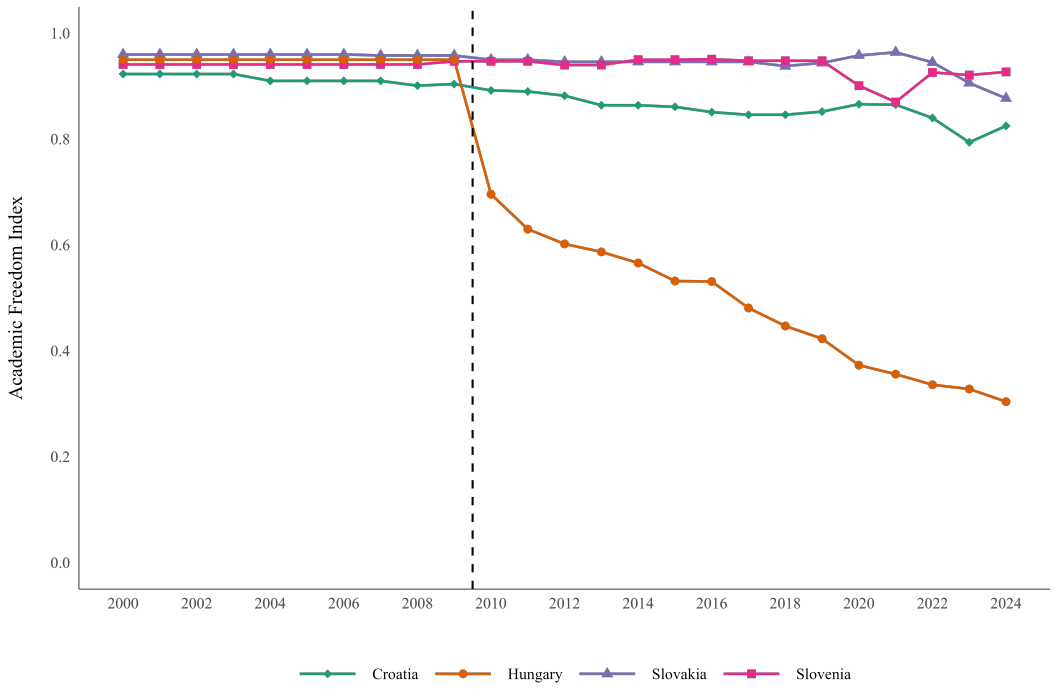
We would first like to recontextualise academic freedom in the Hungarian context by underlining the fact that the profession is used to being silent regarding political topics. The period over which academics have been involved in the public discourse without hindrance has been short, lasting only about twenty years between the end of the explicit ideological control of the communist period and the changes induced by Fidesz after 2010. During this time, academia became closely involved in politics. However, the chilling effect mentioned in this paper is a return to an earlier state from before 1989. The main difference that the literature identifies is that for those who are not self-censoring, instead of a ban on anti-government speech from academics, they are simply confined to the margins of publications by the State-aligned media, which does not even discuss their arguments. The combination of a fear for their livelihoods and the media takeover are the main reasons why academic freedom declined after 2010.

As a descriptive piece of evidence showing the rise of illiberalism in Hungary, we show that the Academic Freedom Index (AFI) has dropped since Orbán's reelection in 2010. This index is compiled by V-Dem to measure the level of academic freedom in each country on an annual basis based on private interviews with researchers. In Figure A.1.1, it is clear that Hungary diverges significantly from the trajectory of other Central and Eastern European countries[36]. The AFI for Hungary begins to decline sharply after 2010 and continues to deteriorate in the following years, while the rest only decline very slightly during Covid, which could be due to quarantine restrictions. None of the other countries see a drop with a similar magnitude as the one that we see in Hungary. Figure A.1.2 provides a more detailed view, displaying the individual components that are aggregated to construct the overall AFI. Although all dimensions taken into account by V-dem show a downward trend, some notable patterns emerge. In particular, the decline in "Institutional Autonomy" is especially strong in the Hungarian context, where academic freedom was initially challenged through governance reforms in 2011, 2014, and 2022. Interestingly, the indicator for "Cultural and Academic Expression" shows a sharp decline following the

[36]This is the measure that we use in order to select the countries used as a control group. The countries from which we use affiliated researchers are selected in such a way that they do not experience the same changes in academic freedom levels as Hungary.

campaign against the Central European University and the adoption of the "Lex CEU" law. This trend may reflect the broader atmosphere of intimidation and pressure on academics between 2017 and 2019 (Kováts and Rónay, 2021; Jenne et al., 2022).

Figure A.1.1. Academic Freedom Index – Central-Eastern European Countries (2000-2024)



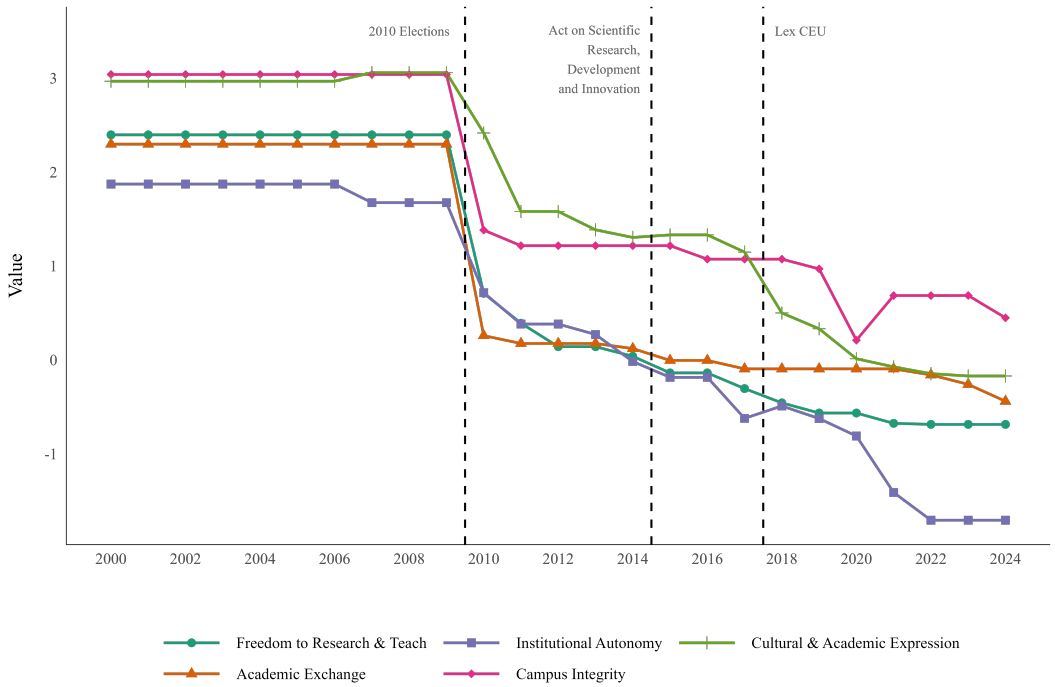
Notes: This graphs shows the normalized Academic Freedom Index (AFI), computed by V-Dem, fror Croatia, Hungary, Slovakia and Slovenia, between 2000 and 2024. We obtain data directly from the V-Dem website. The dashed line indicates the year Viktor Orbán took office. The value of the index goes from 0 (no Academic Freedom) to 1.

While we cannot conduct a causal analysis on the entirety of Hungarian researchers, we can still descriptively document the impact of this decrease in academic freedom.

Figure A.1.3 highlights two notable patterns. First, it shows a slowdown in the size of PhD cohorts in public universities across all fields, with this decline becoming more pronounced after 2013. Second and interestingly, illiberal policies have not led to a reduction in the number of foreign PhD students. As the red curve in the figure indicates, the number of foreign students has continued to grow, representing an increasing share over time. In this sense, illiberal policies, in Hungary, do not appear to directly affect the arrival of foreign students; rather, their restrictive effects seem more targeted toward Hungarian researchers (see Section 7).

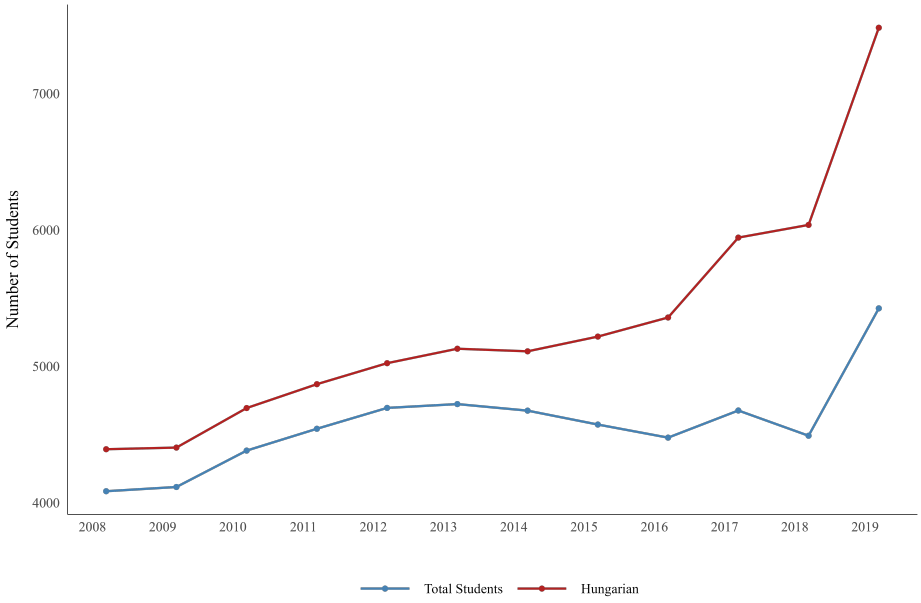
The trends observed in Figure A.1.3 for domestic researchers are echoed in Figure A.1.4, which displays a slowdown in the number of new researchers entering academia—especially after 2014–2015. These parallel trends also provide indirect validation of quality of the Hungarian CRIS data used in our analysis.

Figure A.1.2. Decomposition of the Academic Freedom Index - Hungary (2000-2024)



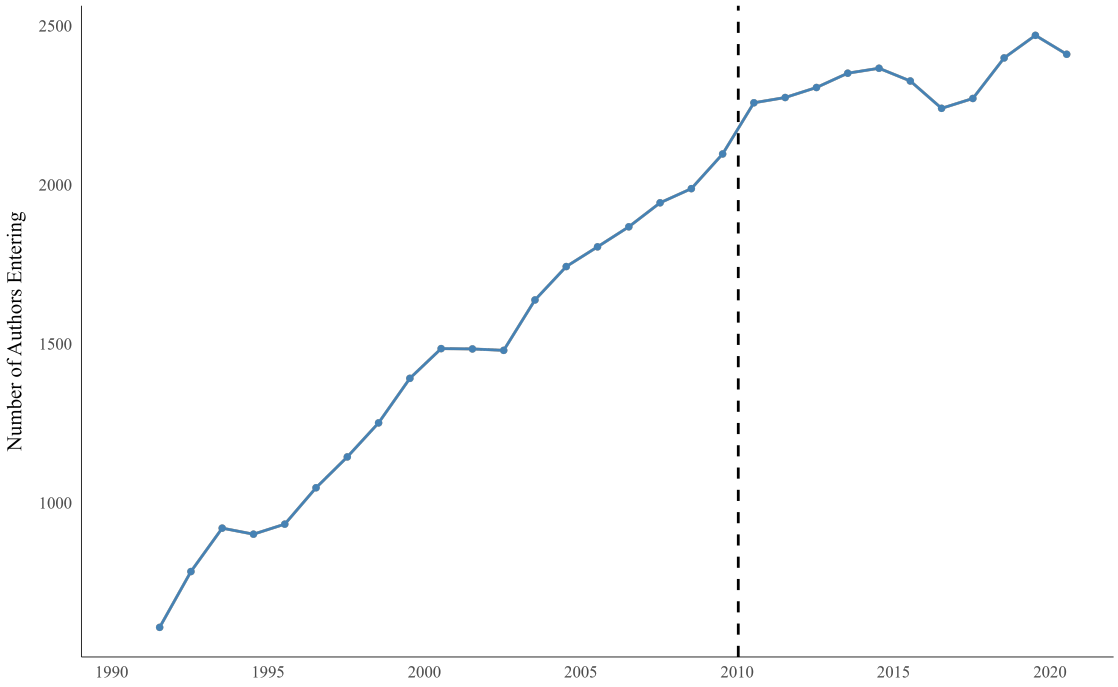
Notes: This graph shows the decomposition of the Academic Freedom Index (AFI), computed by V-Dem, for Hungary between 2000 and 2024. We obtain data directly from the V-Dem website. The dashed lines indicate the successive 3 main organizational reforms that we describe in Section 2 as being major turning points.

Figure A.1.3. Total Number of PhD Students in Hungary between 2008 and 2019 – by Nationality



Notes: The graph above displays the total number of PhD students enrolled at all Hungarian universities between 2008 and 2019. The data are sourced from the Hungarian Ministry of Higher Education. The count includes all students pursuing a doctorate, regardless of their year of study.

Figure A.1.4. Total Number of Entering Authors between 1990 and 2022 in Hungary



Notes: The graph above shows the total number of authors entering the Hungarian CRIS database (MTMT). An author's entry year is defined as the year of their first recorded publication. The dashed line indicates the year Viktor Orbán took office. To smooth overall trends, we compute a two-year rolling average; for example, the value shown for 2000 reflects the average number of new entries in 1999 and 2000.

Kováts and Rónay (2021) make the case that the changes within the university and the use of media outlets to target scientists are two elements of a single strategy. This allows the government to maintain a controlled opposition within university to be able to point fingers at enemies of the regime, in a climate in which they have promoted anti-intellectualism, and to swiftly deal with them by controlling the internal structure of the university. While no researcher is directly told not to work on certain topics, they are all aware that they could become a target at any time. For instance, they report the following citations from an interview with a researcher about their freedom to research and teach: "You don't need these politicians to ever have any direct say in your curriculum [...]. So they put the gun on the table and you never have to pull the trigger, and they may never pull the trigger, but that gun, you always see it. It's very powerful. In an environment that's been through that kind of socialization, it brutally restrains courage.".

A.2 The Central European University

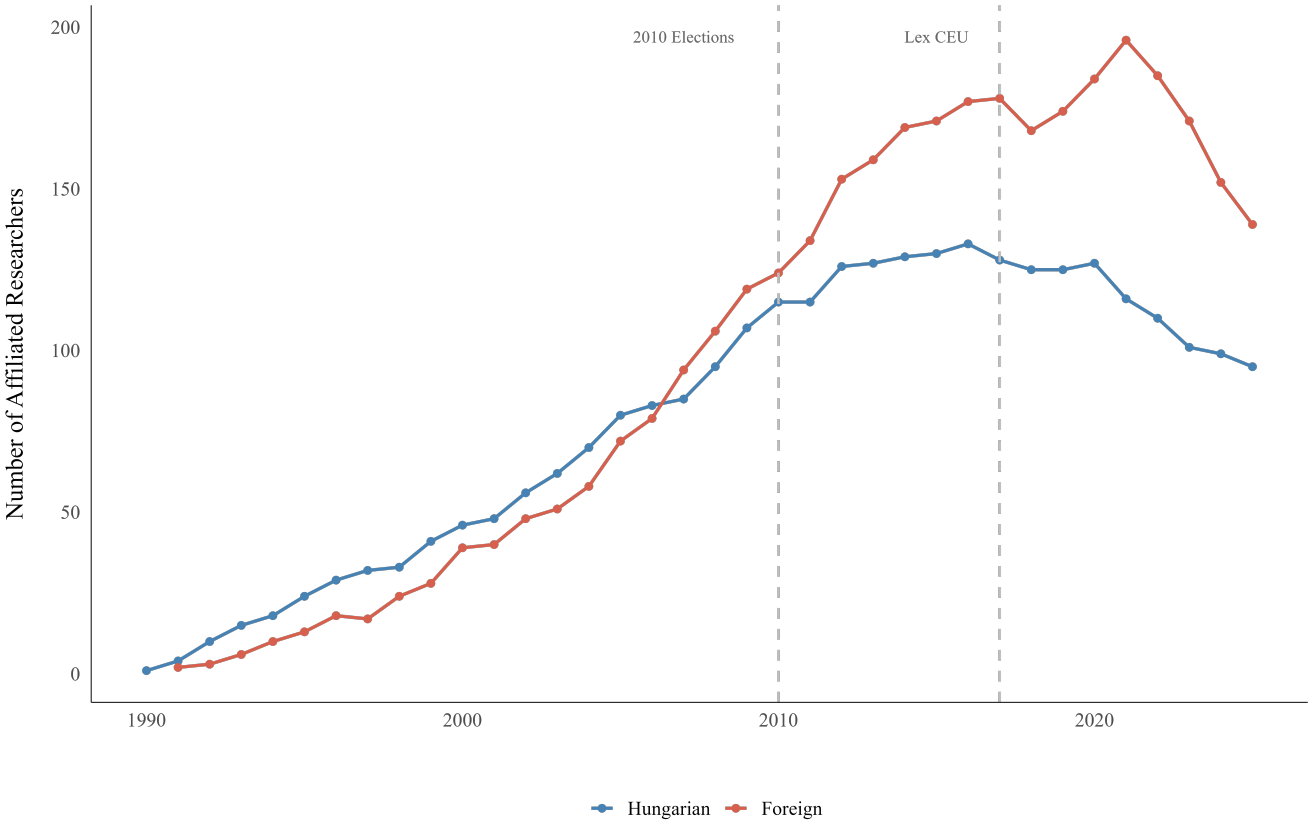
We first recapitulate the events leading up to the relocation of the CEU in Austria. In June 2018, after the election several "Stop Soros" legislative bills attempting to constrain the Hungarian civil society were

introduced in Parliament; these laws banned people from helping undocumented immigrants and imposed a 25% tax on foreign donations to pro-immigrant NGOs (Benková (2019)). This led George Soros's Open Society foundation to move its headquarters from the country and the EU Parliament to vote a punishment for this breach of core EU values. Benková (2019) underlines the years-long campaign started in 2015 of Fidesz against George Soros, a billionaire from Hungary living in the US who is politically progressive, costing over 100 million euros. Krekó and Enyedi (2018) detail the goals as well as several stepping stones of this campaign. Finding this common enemy, the authors say, contributes to what Orbán calls a "cultural counter-revolution". The regime used its control of the media, including some private media receiving most of their funding from the state, to promote a narrative positing that progressive and pro-human rights movements in Hungary were funded by Soros, including publishing in the Figyelő a list of 200 academics and human rights activists accused to be "mercenaries of Soros". Orbán did not limit himself to such initiatives, however costly (about 250 million in US dollars on anti-Soros and anti-Brussels campaign in 2017 alone according to HVG[37], in publications, posters...).

We also present in this section some general descriptive evidence on the situation of the Central European University. Figure A.2.1 displays the number of researchers affiliated with Central European University each year between 1990 and 2025. The figure shows a steady increase in the total number of researchers—both Hungarian and international—until a shift occurs after 2010, particularly in the total number of Hungarian researchers affiliated to the university. Figure A.2.2 provides further insight on these trends. It shows that this change is driven by both an increase in the number of researchers leaving the Central European university and a sharp decline in the number of Hungarian researchers entering. Similar trends are observed for international researchers, although the decline in entries becomes most pronounced after 2014. Trends shift again after the "Lex CEU" and the main campus of the university leaving Budapest for Vienna in 2019.

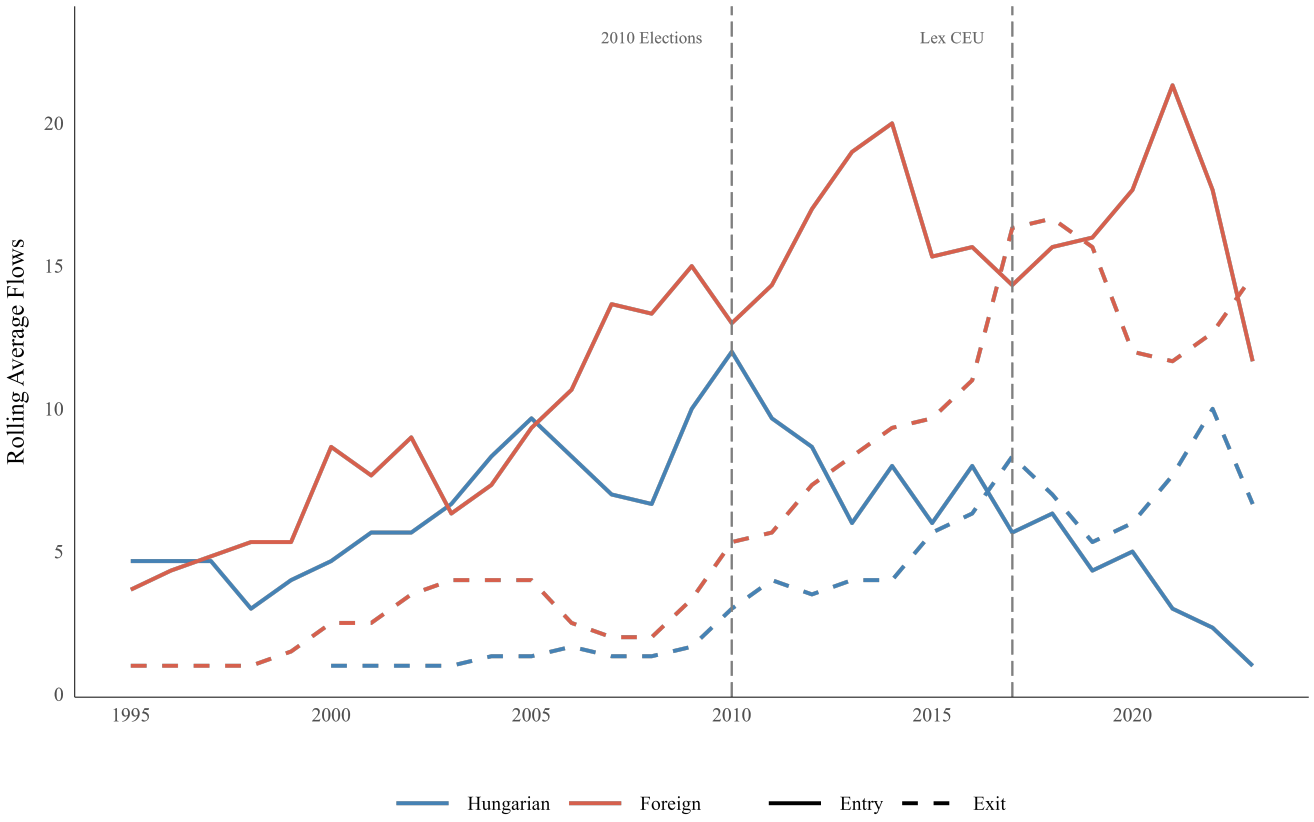
[37]Hava Nikita, January 2018 24, "Incomprehensible numbers: we show how much Orbán spent on propaganda last year", on hvg.hu, retrieved 26/04/24 at https://hvg.hu/gazdasag/20180124_Ennyit_koltottek_el_Orbnek_tavaly_propagandara__itt_a_lista.

Figure A.2.1. Number of Professors at the Central European University (1990-2025)



Notes: The graph aboves displays the total number of publishing researchers that we identified as being at the CEU. This statistics only includes researchers that published at least once.

Figure A.2.2. Exit flows of professors from the Central European University (2000-2025)



Notes: The graph above displays the flows of entering and existing researchers at the Central European University. Data comes from our data set matched by hand. To smooth overall trends, we compute a two-year rolling average; for example, the value shown for 2000 entries is the average number of new entries in 1999 and 2000.

B Data Collection and Harmonization Process

B.1 Collection of the data sets

OpenAlex is a fully open-access database. We use the full snapshot available from August the 29th, 2024. This iteration was released after a large improvement of author profiles resulting in the relabelling of all of them. We still find various instances of duplicated or mixed-up author profiles compared to what we find in national databases, a pitfall that is unavoidable given the size of the dataset.

Regarding the national repositories (Current Research Information System, CRIS), they are a combination of originally bibliometric data (MTMT, ODT for Hungary), project-based data compiled as open-access data on science productivity (SKCRIS for Slovakia and Isvavai for Czechia), and national library data combined with a researchers repository based on project-level data (SICRIS for Slovenia, COBISS for Croatia). All are public databases, but they do not provide a full data transfer, aside from Isvavai. In order to collect them entirely, we automatically collected the data through their API or website for MTMT, ODT and SKCRIS, and through the official register for SICRIS/COBISS. While we collected the data for Isvavai and SKCRIS, we cannot use them due to problems in the registration of authors or dates. Our data collection process is similar for all databases. We first collect the identifiers of all authors in the database. We then use these identifiers to obtain information at the author level. Afterwards, we use the identifiers to obtain information about the publications of each author. This allows us to build a publication-author level dataset which we can then aggregate at the author level for sample construction at a later stage. We harmonize the variables of the different datasets, which are similar due to their shared CRIS design, and append them together in order to build the full CRIS dataset. In order to derive the field of a given author, we map each field of science named in the database to the classification used by OpenAlex, first by hand for fields that are given an identifier, then by using cosine distance of embeddings in SciBert (Beltagy et al. (2019)) in order to find the closest field in OpenAlex classification. We also proceed in the same way in order to identify subfields for MTMT and SICRIS, for the fields that are detailed enough (for instance, "linguistics" is mapped to OpenAlex subfield #1203, "Language and linguistics"). We then use this mapping to retrieve the domain of publication of the author in the OpenAlex classification. Because this information is directly provided by universities or researchers themselves, we consider it more trustworthy than the automatically computed value of the same variable in OpenAlex. Therefore, for the authors who are in both samples, this is the variable that we use instead of the OpenAlex variable "topic share". We believe that this allows us to remove some of the measurement error over fields of an author.

Hungary: We use two databases to assess the state of research and characteristics of researchers in Hungary. The first of the two is the list of doctoral programme members and student publicly available on the official website of the National Doctoral Council (Országos Doktori Tanács, later referred to as ODT). By law (Act CXXXIX of 2005 on higher education), all doctoral schools have been under the scrutiny

of the ODT (independent association) since 2007. The organisation had made mandatory starting from November 2007 for all doctoral schools to publish a public profile for each researcher of the country. The data on these profiles includes all academic titles of the researcher, the PHD students that she supervises, her research areas, her employment history and a list of her recent publications. All the information is directly entered by researchers themselves and validated by administrators of the doctoral school. Overall, the website contains about 52,000 profiles, from researchers or Ph.D. students. Any researcher who was active in a doctoral school after 2007 is supposed to have a profile, including now retired or deceased researchers. This public information was obtained through the website doktori.hu.

The other source is the Library of Hungarian Scientific Works (*Magyar Tudományos Művek Tára* or MTMT), a publication-level bibliometric database published in 2010. Five different institutions, namely the ODT, the Hungarian Accreditation Committee, the Hungarian Rectors Conference, the Hungarian Scientific Research Fund (OTKA) and the Hungarian Academy of Sciences – which is also responsible for its management – contributed to its creation (Holl et al. (2014)). It is managed directly at the university level. Hungarian publications in social sciences are likely to be badly indexed on non-specialized databases (few have a DOI, few on Scopus (Sasvári (2022))). The database was retrieved through calls to its API using researcher profiles. We harvest 1,768,488 scientific publications out of the about 5 million records[38] and 66,435 different author profiles from the database, which corresponds to the information recently provided by the curators of the data (Holl (2024))[39]. Among those, 15,643 are directly linked to a researcher profile in ODT.

Slovenia: SICRIS is created and maintained by IZUM, the Institute of Information Science, and the Slovenian Research and Innovation Agency (ARIS), instituted by the Research and Development Act 2002/26 (Curk et al. (2006)). ARIS is tasked to evaluate research projects and publishes the data that it obtains, not only at the project-level but also the researcher-, research group- and research institute-level. We use the SICRIS system to retrieve information about active researchers in Slovenia (48,022 records overall) (Korošec (2022)).

We then use the link provided by SICRIS to retrieve publication information for all these researchers in COBISS.net, which is the information system of Slovenian, North Macedonian, Serbian, Bulgarian, Albanian, Bosnian, Montenegrin and Kosovar libraries. Originating from the former communist system at the initiative of IZUM (Seljak (1994)), the database contains records on all publications from authors of the country, with relatively high quality (Badovinac (2021)). The COBISS.SI database contains over 7.3 million records. We only collect a subset of this through reports generated from authors of the SICRIS database, leading us to only consider 1,515,089 records. Some of the COBISS entries include citations

[38]MTMT also records non-academic publications and other type of works such as musical performances which are not relevant to our analysis.

[39]A few researcher profiles are not visible for all users, but this concerns about a hundred profiles in the entire database.

obtained from other sources such as Web of Science, but not systematically[40].

Croatia: CRORIS is a project maintained by the Ministry of Science and Education of Croatia and the University Computing center, under project KK.01.1.1.03.0001 of the European Regional Development Fund, 2017. The project builds upon existing databases to create and maintain an Croatian CRIS that contains 920,921 publications and 52,169 researchers. We collect the entire dataset of publications of CRORIS through its API. CRORIS does not feature any citation data.

In order to use conjointly these data sources, we use the following steps to link the information available in them. First, we normalize the names of researcher profiles for each database. Then, for every field existing in each database, we match it to a field existing in OpenAlex (the classification of which is derived from the Scopus subject areas). We then match authors on their initials and last name. We keep matches that feature researchers with the same first and last name, provided that in the same OpenAlex-recoded field in the national database, there is only one researcher with that exact full name. We may keep matches that link the same national base researcher to several Open Alex profiles. Indeed, OpenAlex tends to create several profiles for the same author. We decide to trust that the authors profiles in the national databases are more accurate and we therefore assume that if an author has no homonym in the same field in these databases, it is more likely that a homonym profile in OpenAlex is an extra profile of the same person. Using this method, we are able to link to their OpenAlex profiles 15,372 Slovenian profiles and 59,629 Hungarian profiles.

B.2 Merging National and International Data

In order to conjointly use the different available data sources and reduce measurement error for our analysis, we reconcile the information available in these databases by merging them on common identifiers. For instance, in OpenAlex, a professor of literature corresponding to the ODT profile #14 corresponds not to one but to five different profiles. One of them features most of his publications (55) but 8 others are scattered across different profiles. In order to be able to compute our measurements of productivity, activity and location more precisely, we use the information available in the national CRIS to be able to tell that these profiles correspond to the same person.

We detail in this section how we deal with the several problems occurring in this process.

[40]Publications in other languages are frequent in the Hungarian CRIS data although it depends on the subjects (for instance theology and linguistics are often published in German) but less so in COBISS.

B.2.1 Details on the Merging Procedure

In theory, merging publications across databases should be easy. Indeed, every publication available online has a Digital Online Identifier (DOI) which should be the same across all databases. The issue we encounter is that for most publications in the databases, the DOI is not available (in MTMT, only 18% of publications have one). While there are other identifiers at our disposal, such as Web of Science or Scopus identifiers, merging only on those external identifiers does not allow us to capture most of the common information across databases. Therefore, we also merge on record title. In order to capture matches in which unicode encoding or capitalisation might be different, or using different stopwords, we normalise the titles by removing stopwords if the language of the publication is given, removing non-letter and non-digit characters, and converting the strings to the same encoding.

When we use matched authors to match publications, we further allow for some variation in publication title. Due to the fact that we may have removed stopwords in one record but not the other for the same publication due to missing data about the language, or simply to human error in typing the titles (for instance the title of publication #12044 in MTMT includes "labortory" instead of "laboratory", preventing us from matching it directly to OpenAlex publication #1983568155), we keep matches in which the Levenshtein distance between normalized titles is below 10% of the length of the smaller of the two strings.

For author matches, we keep matches between authors who are shown by both databases to be the author of a matched publication, when their first name and last name are concordant, or when the Open Alex profile only has an initial instead of a first name and this initial and the first name are concordant. This allows us to match researchers even if they have the same name and publish in the same field, provided that the publications of two researchers with these common characteristics are not mixed together in OpenAlex.

In addition to this process, we further match researcher profiles based on names and fields. If a researcher is the only one in each database to have the same full name, or initial and last name, in a given field of publication, we decide that the match is probably true. This approach is complementary to the previous, as it allows us to retrieve researcher profiles for which publications have been mixed with homonyms from another field.

B.2.2 Eliminating Incorrect Matches

Due to the presence of homonyms in author names and in article names, we need to eliminate incorrect matches. While in theory, our procedure should allow us to distinguish authors who have the same name using their publications, this is not the case for all. Indeed, due to the size of the dataset, the author profile attribution algorithm in OpenAlex generates false links between authors and publications, on the

basis of homonyms[41]. Therefore, our process necessarily generates false matches between author profiles.

Conversely, as explained above, we may want to keep profiles or publications that are not matched one-to-one across databases. Due to the presence of duplicates for publications and author profiles, it appears efficient to keep at least some of them. In this step, we consider the national databases as a source of truth, due to the fact that they are at least partly managed by universities and researchers, who have an incentive to check their profiles directly and correct them. Conversely, due to the sheer size of OpenAlex, there is no possibility to double-check author profiles and publication duplicates for the entire world. Therefore, we keep all matches to OpenAlex who are matched to a single identifier in the other database.

B.2.3 Data collection disparities

Due to the fact that all of the databases that we exploit were made separately, it is likely that they collect publications systematically starting from different times. This possibility could bias our estimates of the effect of the regime change in Hungary. In particular, due to the European Sovereign debt crisis, it could be the case that one of the databases suffers from a loss of funding which would hinder its ability to collect data efficiently.

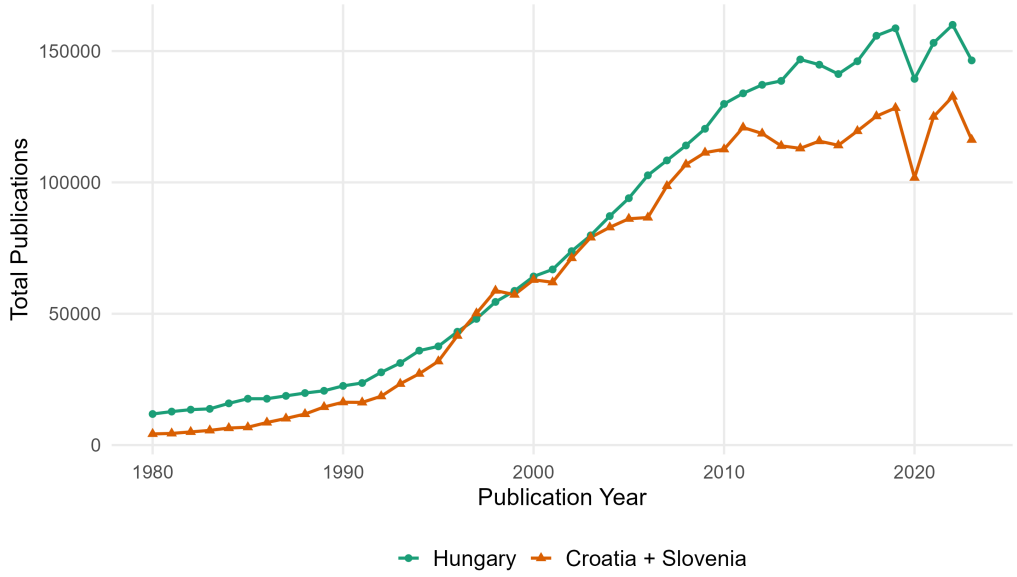
We show the total number of publications across national databases for the period 2000-2020, irrespective of any sampling. We observe that there is no large trend break in data collection for either of the two databases in 2010. While the growth of the number of scientific publications in COBISS seems to decrease after 2010, this should in theory only bias our estimates towards 0, instead of leading us to overestimate the effect of the regime change.

In order to harmonize the domain and the field, we use the OpenAlex format, which is itself adapted from Scopus. For the others, if we are able to link them to an OpenAlex profile, we use the field in which this profile publishes the most. This classification has 4 main domains (Life sciences, Social sciences, Physical Sciences and Health Sciences) and 34 fields in total. We allow for one author to be in several fields or domain at the same time. In that case, the authors would be identified as being in one unique field that would correspond to the intersection between the different field the author publishes in.

[41]For instance, some of the publications of the linguist and sociologist A5080416716 are attributed to her homonym A5004379723, who works on pulmonary diseases and endocrinology.

B.3 Comparing Academic Trajectories between Central European Countries

Figure B.3.1. Total Publications per Year - Hungary and Central Eastern Europe



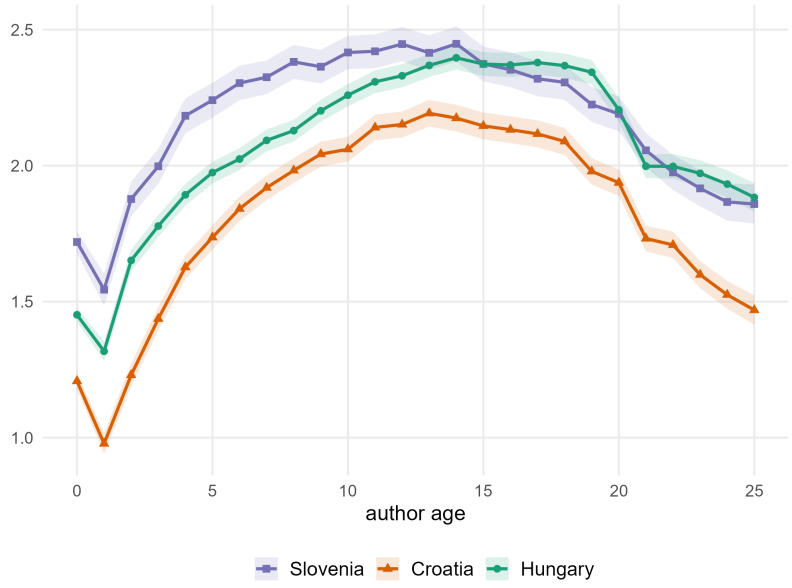
Notes: The graphs above plot the total number of publications recorded per year in the different Current Research Information Systems (CRIS) that we take into account in the cross-country author-level analysis (Hungary, Slovenia and Croatia).

Figure B.3.2. Average Publication per Year - Full Sample

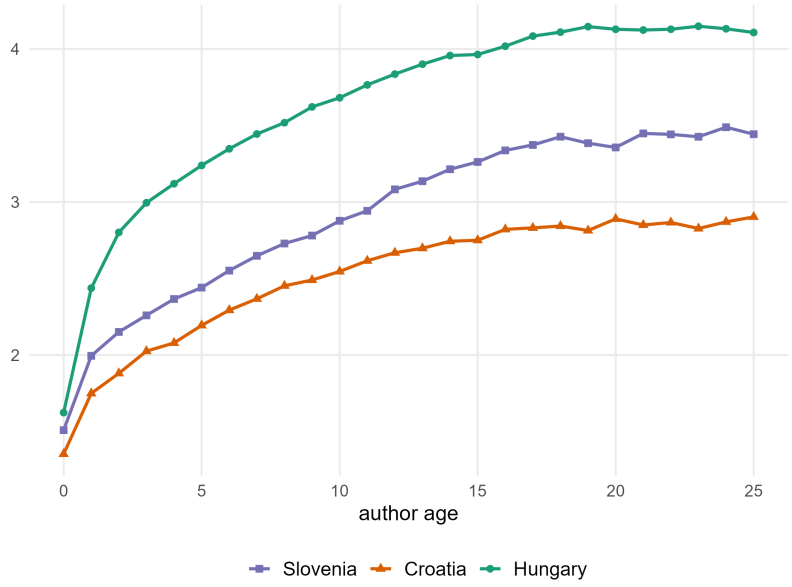


Notes: The graphs above plot the average number of publications per author per year in the different Current Research Information Systems (CRIS)that we take into account in the cross-country author-level analysis (Hungary, Slovenia and Croatia).

Figure B.3.3. Average Publications Trajectories per Author



(a) Average Number of Publications per Year



(b) Average Number of Publications per Year, Conditional on Publishing

Notes: The graphs above plot the average number of publications per author in the different Current Research Information Systems that we take into account in the cross-country author-level analysis (Hungary, Slovenia and Croatia). Both graphs represent on the y-axis the career year since the entry in Academia.

C Academics Political Alignment

We detail in this section how we build our sample of researchers that we believe could be considered as "political opponents" or as "allies". We consider as perceived political opponents all researchers that are affiliated to the Central European University and a sample of researchers that are working with Non-Governmental Organization targeted by the Viktor Orbán policies.

Central European University – We extract from OpenAlex all researchers affiliated with the Central European University since its creation. Given the relatively small sample size, we matched by hand CEU-affiliated researchers to their identifiers in the national CRIS database (MTMT) and in OpenAlex, based on publication records. To supplement and verify the data, we used researchers' personal websites, online CVs, and LinkedIn profiles to collect key information, including nationality, year of entry, and final year of affiliation with the Central European University. This process also allowed us to exclude deceased individuals and correct OpenAlex data when it reports wrong affiliations. For regression analyses using this sample, we restrict attention to researchers who began their affiliation with the Central European University prior to 2010—that is, before Viktor Orbán's return to power. This ensures we do not inadvertently include researchers who joined the university as a reaction to its political non-alignment with the current government.

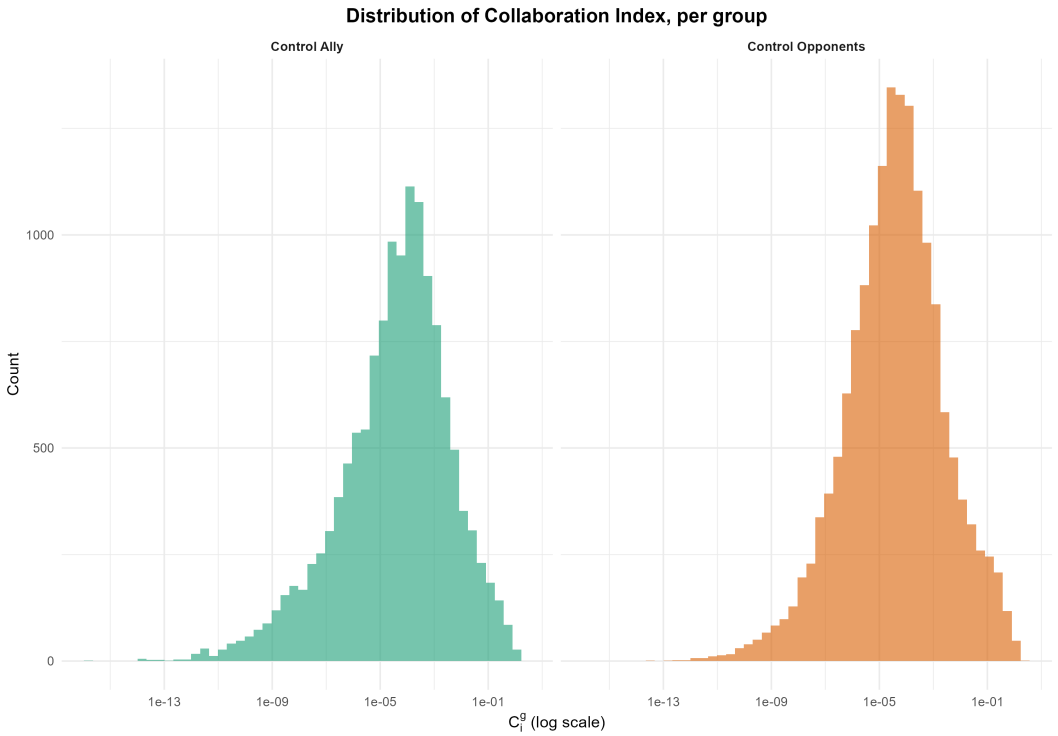
Activists and NGOs – To identify researchers affiliated with NGOs, we use as a primary source the so-called "Soros list," a publicly circulated document published by *Figyelő*, a far-right newspaper. The list names around 200 academics and human rights activists accused of being "mercenaries of Soros." Approximately 80 individuals from this list are indexed in the Hungarian CRIS database.

Batthyány Society – The full list of members of the Society can be found on their website. Similarly to the CEU, we matched them by hand to their identifiers in MTMT and in OpenAlex based on publication records. We also retrieve the same information for these researchers as the information we obtain for the Central European University.

C.1 Networks of Opponents, Networks of Allies

C.1.1 Network Description

Figure C.1.1. Distribution of Network Index - Control Groups



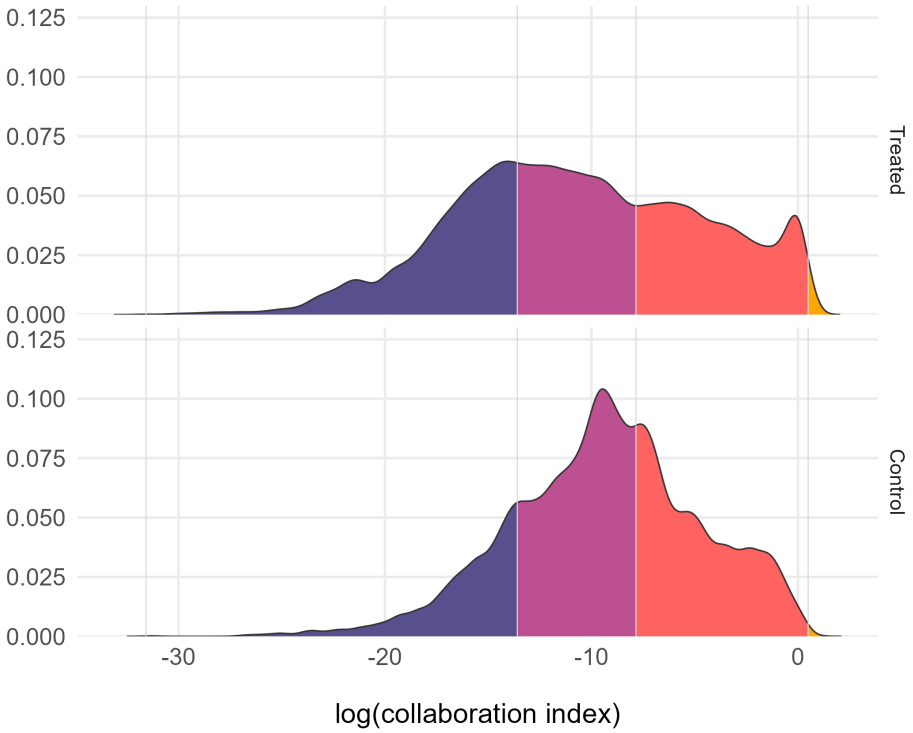
Notes: Each pane of this graph is showing the distribution of $C_t^{g,\text{net}}$ for the control groups ally researchers and the control group of opponent researchers.

Table C.1.1. Pre-treatment descriptive statistics by group

		Network pol. opp.		Network ally	
		Treat	Control	Treat	Control
Panel A: Non-matched sample					
Entry year	Mean	1990.64	1995.66	1993.81	1994.91
	SD	12.21	11.94	12.60	11.61
Life Sciences	Share	0.23	0.27	0.29	0.26
Social Sciences	Share	0.43	0.31	0.28	0.30
Physical Sciences	Share	0.30	0.43	0.46	0.37
Health Sciences	Share	0.28	0.23	0.21	0.33
Publications	Mean	4.89	2.87	3.98	3.43
	Median	3.00	2.00	2.00	2.00
	SD	6.60	4.07	5.86	5.10
Publications (English)	Mean	2.50	1.55	2.35	1.79
	Median	1.00	1.00	1.00	1.00
	SD	4.27	2.88	4.21	3.15
Publications (Hungarian)	Mean	2.80	1.60	2.00	1.95
	Median	1.00	0.00	0.00	1.00
	SD	4.77	3.09	4.24	3.92
Citations	Mean	59.28	34.14	60.96	34.79
	Median	7.00	1.00	4.00	2.00
	SD	211.17	216.89	303.16	116.43
N authors		5,845	4,464	4,529	1,790
Panel B: Matched sample					
Entry year	Mean	1991.81	1993.57	1994.45	1993.38
	SD	10.44	10.37	10.00	10.40
Life Sciences	Share	0.19	0.23	0.27	0.21
Social Sciences	Share	0.42	0.32	0.27	0.26
Physical Sciences	Share	0.21	0.36	0.33	0.31
Health Sciences	Share	0.26	0.19	0.19	0.30
Publications	Mean	4.59	2.90	3.57	3.37
	Median	3.00	2.00	2.00	2.00
	SD	6.22	4.06	5.14	5.06
Publications (English)	Mean	2.20	1.49	2.05	1.71
	Median	1.00	0.00	1.00	1.00
	SD	3.91	2.78	4.02	3.13
Publications (Hungarian)	Mean	2.72	1.65	1.82	1.96
	Median	1.00	0.00	0.00	0.00
	SD	4.60	3.18	3.65	4.01
Citations	Mean	54.79	36.48	63.94	35.33
	Median	6.00	1.00	4.00	2.00
	SD	216.61	239.25	326.17	113.89
N authors		3,592	2,544	1,899	1,028

Note:
Statistics computed on the pre-treatment period (2000–2009). Entry year and institution shares are computed at the author level; publication and citation statistics over author-year observations. Panel B restricts each comparison to its exact-matched sample (matched on entry year and field).

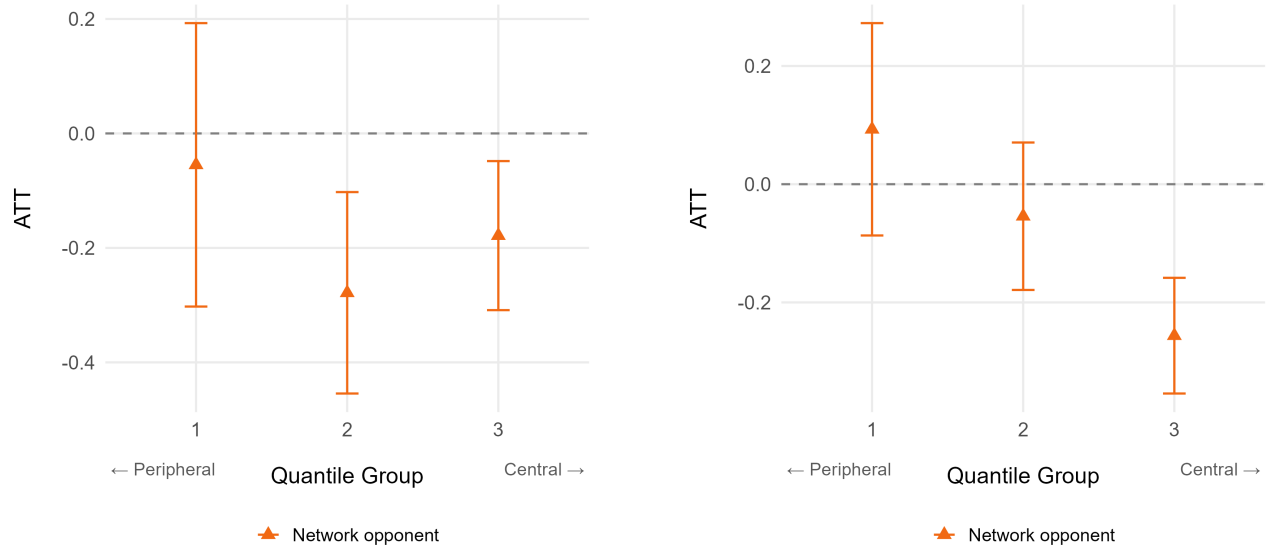
Figure C.1.2. Distribution of Network Index - Quantiles



Notes: This graph show the log distribution of the $C_t^{g,\text{net}}$ for the opponent network group (top pane) and the control group associated (bottom pane). Colours show the quantiles that we consider for both group in terms centrality in the network of Opponents.

C.1.2 Heterogeneity Results

Figure C.1.3. Network Proximity- Effect on Influence and Collaborations



(a) Citation count

(b) New Collaborations

Note: Results are from Fixed-Effect PPML regressions from CRIS data. The unit of observation is author by year and the sample period is 2005–2023. Treated authors are those whose collaboration index with researchers perceived as political opponents is above median. We then split them in three groups by tercile of collaboration index. Panel (a) reports the effect on citations within Hungarian CRIS. Panel (b) reports the effect on new collaborations. Control variables account for trends field and cohort dynamics over time. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

C.2 Non-Aligned Research Topics

C.2.1 Topic Definition

This section details how we identify publications belonging to three thematic categories: gender-related topics, rule of law and democracy, and broader sensitive political topics. Our classification relies on the presence of specific keywords and expressions in publication titles. For each category, we construct a curated list of terms commonly associated with the corresponding literature. To reduce noise, we classify an author as contributing to a given topic based on whether they published a number of these types of publications greater than three.

C.2.2 Gender

We identify gender-related publications using a set of keywords capturing the main dimensions of gender studies, including social theory, health, sexuality, and family structures. The list is designed to cover both conceptual and empirical work in the field. This topic includes several interconnected subtopics. First, gender relations and feminist theory (*gender*, *women*, *sexism*, *patriarchal*, *feminism*, *stereotype*, *toxic masculinity*, *intersectionality*) explores power structures, social norms, and inequalities shaping gendered experiences. Second, reproductive health and biomedical dimensions (*reproductive health*, *abortion*, *contraception*, *fertility*, *pregnancy*, *childbirth*, *gynecologic*, *menopause*, *uterus*, *ovary*) focuses on the biological, medical, and embodied aspects of reproduction. Third, sexuality, rights, and gender-based violence (*sexuality*, *sexual empowerment*, *sexual harassment*, *sexual violence*, *female genital mutilation*, *forced sterilization*, *partner violence*, *femicide*) addresses bodily autonomy, rights, and forms of gendered harm. Fourth, LGBTQ+ identities and gender diversity (*LGBT*, *lesbian*, *gay*, *transgender*, *non-binary*, *queer*, *intersex*, *sexual orientation*, *trans rights*) highlights issues of identity, recognition, and inclusion. Finally, family, labor, and social organization (*domestic labor*, *care economy*, *motherhood*, *maternity*, *family policy*, *child marriage*, *gendered division of labor*) examines how gender structures everyday life, institutions, and economic relations.

C.2.3 Rule of Law

To capture publications related to the rule of law and democratic institutions, we rely on a set of keywords commonly used in discussions of institutional quality, civil liberties, and authoritarian dynamics. These terms are frequently mobilized in academic work critically engaging with illiberal policies and democratic backsliding. This topic which includes several interconnected subtopics. First, fundamental rights and legal principles (*human rights*, *civil rights*, *fundamental rights*, *rule of law*, *constitutional law*, *legal equality*, *fair trial*, *access to justice*) refers to the normative and institutional foundations that protect individual freedoms and ensure legal accountability. Second, political ideologies and authoritarian

dynamics (*authoritarian*, *nationalism*, *political conservatism*, *populism*, *radical right*, *far right*, *autocracy*, *illiberalism*, *fascist*) captures ideological currents and regimes that challenge or reshape democratic norms. Third, democratic erosion and institutional capture (*democratic backsliding*, *erosion of democracy*, *judicial capture*, *politicized judiciary*, *constitutional crisis*, *manipulated elections*, *electoral fraud*, *state capture*) highlights processes through which democratic institutions are weakened or subverted. Fourth, surveillance, repression, and state control (*state surveillance*, *mass surveillance*, *political repression*, *police state*, *censorship*, *propaganda*, *arbitrary detention*, *state violence*, *enforced disappearance*) focuses on coercive tools used to monitor, control, and silence populations. Fifth, corruption and governance practices (*corruption*, *kleptocra*, *cronyism*, *clientelism*, *nepotism*, *bribery*, *patronage system*, *abuse of power*) examines informal and illegal mechanisms of power consolidation. Finally, freedoms, civil society, and academic autonomy (*freedom of speech*, *freedom of expression*, *freedom of the press*, *freedom of assembly*, *academic freedom*, *university autonomy*, *media freedom*, *shrinking civic space*, *chilling effect*) addresses the conditions necessary for open debate, knowledge production, and democratic participation.

C.2.4 Sensitive Topics

We define a broader category of sensitive political topics encompassing social justice, political conflict, and authoritarian practices. The associated keywords capture themes that are often politically salient, contested, or ideologically charged. This topic includes several interconnected subtopics. First, migration, borders, and global inequalities (*migrant*, *refugee*, *asylum*, *borders*, *internationalism*) highlights transnational movements of people and the political and ethical issues surrounding displacement and border regimes. Second, economic systems and class struggle (*capitalism*, *neoliberal*, *exploitation*, *social inequality*, *economic justice*, *income redistribution*, *anticolonialism*, *anti-imperialism*) focuses on critiques of economic structures and their role in producing inequality and domination. Third, labor, workers, and collective action (*workers*, *labor condition*, *trade union*, *workers' rights*, *workers' movement*, *class struggle*, *proletariat*) examines material conditions, labor organization, and social conflict. Fourth, left-wing ideologies and revolutionary thought (*marxism*, *communism*, *socialism*, *anarchism*, *left-wing*, *progressive politics*, *revolutionary theory*) captures political doctrines and movements advocating systemic transformation. Fifth, identity, discrimination, and social justice (*racism*, *antisemitism*, *islamophobia*, *sexism*, *intersectional*, *racial discrimination*, *equal opportunity*, *solidarity*) addresses inequalities based on identity and struggles for inclusion and rights. Sixth, historical violence, genocide, and memory (*holocaust*, *genoci*, *extermination*, *deportation*, *slave trade*, *denazification*) reflects on mass violence, collective trauma, and historical accountability. Seventh, authoritarianism and political repression (*autocracy*, *totalitarianism*, *dictator*, *fascism*, *police state*, *repression*, *surveillance state*, *cult of personality*) examines coercive regimes and mechanisms of control. Eighth, democratic erosion and institutional abuse (*democratic backsliding*, *judicial capture*, *electoral fraud*, *state capture*, *corruption*, *clientelism*, *abuse of power*) highlights pro-

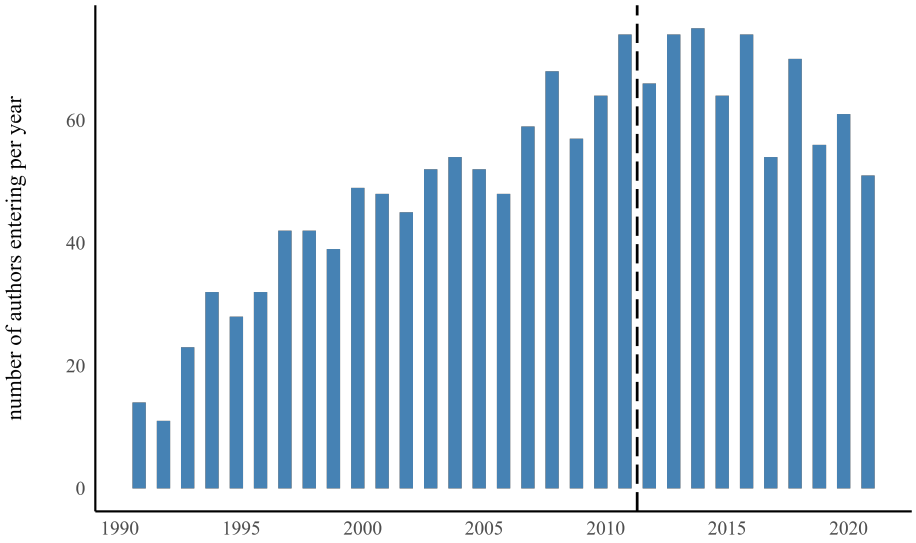
cesses undermining democratic governance. Finally, civil liberties and resistance (*freedom of speech*, *press freedom*, *censorship*, *political persecution*, *torture*, *political prisoner*, *exile*) emphasizes the restriction of freedoms and the struggles against oppression.

C.2.5 Climate change

Finally, we define a topic centred on climate change and environmental politics. The associated keywords capture themes that are scientifically established yet politically contested, spanning both the physical dimensions of environmental change and its social, economic, and cultural dimensions. First, core climate concepts and discourse (*climate change*, *climate crisis*, *global warming*, *climate policy*, *climate risk*, *climate change denial*, *climate skepticism*) captures the central vocabulary of this literature, including both the framing of the problem and the contestation of climate science itself. Second, environmental science and Earth systems (*greenhouse gases*, *carbon emissions*, *carbon cycle*, *air pollution*, *sea level rise*, *permafrost*, *natural disaster*) refers to the physical processes, mechanisms, and observable consequences of environmental change. Third, biodiversity and ecosystem decline (*biodiversity*, *loss of biodiversity*, *biodiversity crisis*, *biodiversity conservation*) addresses the erosion of ecosystems and species, together with efforts at their protection. Fourth, causes and structural drivers (*fossil fuels*, *extractivism*, *overconsumption*, *industrial agriculture*, *land degradation*, *ecological debt*, *climate colonialism*) identifies the economic activities and structural dynamics held responsible for environmental degradation, including critiques linking ecological harm to global power asymmetries. Fifth, energy transition and technological solutions (*renewable energy*, *green energy*, *carbon neutrality*, *carbon capture*, *green transition*, *sustainable development*, *recycl*) covers proposed responses to the climate crisis, from technological innovation to sustainability practices and resource management. Sixth, climate justice, mobilization, and displacement (*climate justice*, *environmental justice*, *climate refugees*, *just transition*, *climate activism*, *climate strike*, *Fridays for Future*, *Extinction Rebellion*) highlights the distributional and ethical dimensions of climate change, the displacement of populations, and the social movements demanding political action. Finally, environmental philosophy, culture, and theory (*anthropocene*, *ecocide*, *eco-anxiety*, *ecofeminism*, *deep ecology*, *degrowth*, *post-growth*, *planetary boundaries*) captures conceptual and critical frameworks that rethink the relationship between humanity and nature, including radical critiques of growth-based economic models.

C.2.6 Descriptive Statistics on New Researchers

Figure C.2.1. Number of entering authors working on gender topics.



Notes: The graph above shows the number of new authors working on gender-related topics between 1990 and 2020. The entering year is defined as the year of an author's first publication in our database. We use a five-year forward window to identify only the first publications of each author's career. We define new authors working on gender topics as those with more than one publication on gender-related topics within this five-year period. Gender publications are defined using the method detailed in Appendix C.2.

D Self-censorship and Research Similarity

We assess research direction for authors of the sample by first encoding the titles – and abstracts whenever available into sentence embeddings. Sentence embeddings are a spatial representation of texts, derived from the context in which their words are used. We use a BERT-type embedding for this purpose (Devlin et al., 2019). Our measure of similarity between two papers is the cosine similarity between the embeddings of their title or abstract. To aggregate at the author A to author B level in a given period, we compute the pairwise similarities between all of their publications during that period, excluding any shared paper, and compute aggregate descriptive statistics on this matrix, which we then use in regressions. We use Multilingual-E5-large (Wang et al., 2024), in order to be able to embed text in English, Hungarian, Slovenian and Croatian[42] using the same model.

Comparison between current and past research for an author

We first compute the pairwise similarities between every author's publications during a past period and each particular year, excluding publications of that year that are included in the period. In this exercise,

[42]While we also embed publications that are in other languages, we do not build a separate category for them.

each author is both author A and author B. Periods include the last year prior to the focal one during which the author published, all publications prior to 2005, all publications prior to 2009, 2000 to 2005, 2005 to 2009 and 2000 to 2009. We then compute the minimum, average and maximal similarities between an author's publications each year and during each of these periods, using titles and abstracts, both for all publications and for the subset of publications that are in their national language or in English.

Group comparisons

We then compute pairwise similarities between every author's publication each year and all publications of allies and opponents who publish in the same domain, field or subfield during a given period. If the author is also a member of that group, we exclude this author's publications when computing the similarities. The periods are almost the same as above: all publications prior to 2005, all publications prior to 2009, 2000 to 2005, 2005 to 2009 and 2000 to 2009, and the particular year of analysis. Similarly, we then compute the minimum, average and maximal similarities between an author's publications each year and those of that group. Again, we perform this analysis both for titles and for abstracts, either for all publications or splitting by language (national versus English).

Descriptive statistics

We provide descriptive statistics for average pairwise similarities between papers of members of each group who publish in the same in the years 2000 to 2009. Table D.0.1 shows the similarities for papers irrespective of the language, while Table D.0.2 shows the similarities for papers in English and Table D.0.3 for papers in Hungarian.

Table D.0.1. Descriptive statistics - pairwise similarity of papers across groups

Compared groups	Min.	Mean	Max.	Std. Deviation
Allies and neutral	0.601735	0.813859	1.000000	0.035245
Opponents and neutral	0.608390	0.815874	1.000000	0.037304
Allies (within)	0.650791	0.813271	1.000000	0.035322
Opponents (within)	0.620512	0.816516	1.000000	0.037778
Allies and opponents	0.643355	0.815922	1.000000	0.036500

The table presents the minimum, average, maximum and standard deviation of the pairwise similarity between papers of authors from the same field between allies and themselves, allies and neutral researchers, allies and opponents, opponents and themselves, and opponents and neutral researchers. The similarity is computed over all papers published from 2000 to 2009 by each group, by field.

Table D.0.2. Descriptive statistics - pairwise similarity of papers across groups (English)

Compared groups	Min.	Mean	Max.	Std. Deviation
Allies and neutral	0.650471	0.811584	1.000000	0.029315
Opponents and neutral	0.636541	0.799148	1.000000	0.034039
Allies (within)	0.665658	0.813475	1.000000	0.030620
Opponents (within)	0.652998	0.805739	1.000000	0.034527
Allies and opponents	0.656434	0.805306	1.000000	0.034368

The table presents the minimum, average, maximum and standard deviation of the pairwise similarity between papers of authors in English from the same field between allies and themselves, allies and neutral researchers, allies and opponents, opponents and themselves, and opponents and neutral researchers. The similarity is computed over all papers published in English from 2000 to 2009 by each group, by field.

Table D.0.3. Descriptive statistics - pairwise similarity of papers across groups (Hungarian)

Compared groups	Min.	Mean	Max.	Std. Deviation
Allies and neutral	0.631212	0.836766	1.000000	0.029147
Opponents and neutral	0.634710	0.836536	1.000000	0.029004
Allies (within)	0.680247	0.838033	1.000000	0.029439
Opponents (within)	0.645035	0.840792	1.000000	0.029248
Allies and opponents	0.660320	0.836216	1.000000	0.028781

The table presents the minimum, average, maximum and standard deviation of the pairwise similarity between papers of authors in Hungarian from the same field between allies and themselves, allies and neutral researchers, allies and opponents, opponents and themselves, and opponents and neutral researchers. The similarity is computed over all papers published in Hungarian from 2000 to 2009 by each group, by field.

E Political Alignment and Impact on Productivity: Complementary Results

E.1 Political Opponent, Political Ally

Table E.1.1. Effect on Academic Productivity - Loyal Researchers

	Publications (1)	English (2)	Hungarian (3)	Top 10% Pub. (4)	Top 5% Pub. (5)
Allies × Post	0.135	0.117	0.182	0.048	-0.056
	(0.087)	(0.092)	(0.112)	(0.149)	(0.182)
Mean.Dep.Var.Pre	9	3.96	4.77	2.14	1.58
Convergence	TRUE	TRUE	TRUE	FALSE	TRUE
Observations	4,488	4,236	4,343	2,809	2,602
Author fixed effects	✓	✓	✓	✓	✓
Year-Entry year fixed effects	✓	✓	✓	✓	✓
Year-Field fixed effects	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those identified as loyal to the government. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total publications, publications in English, publications in Hungarian, and publications in the top 10% and the top 5% most cited journals in OpenAlex. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.1.2. Effect on Academic Productivity - Political Opponents

	Publications (1)	English (2)	Hungarian (3)	Top 10% Pub. (4)	Top 5% Pub. (5)
Opponents × Post	-0.199***	-0.354***	-0.265***	-0.896**	-1.10**
	(0.069)	(0.101)	(0.081)	(0.374)	(0.520)
Mean.Dep.Var.Pre	3.47	1.41	1.80	0.193	0.162
Observations	10,981	8,836	10,192	1,359	721
Author fixed effects	✓	✓	✓	✓	✓
Year-Entry year fixed effects	✓	✓	✓	✓	✓
Year-Field fixed effects	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those identified as political opponents to the government. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total publications, publications in English, publications in Hungarian, and publications in the top 10% and the top 5% most cited journals in OpenAlex. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.1.3. Effect on Research Quantity and Network – Political Opponents

	Panel A: Research Quantity			*Panel B: Research Network*	
	publications (1)	pub. nat. language (2)	pub. in english (3)	nr co-authors (4)	nr new co-authors (5)
pol. opp. × post (1^{rst} mandate)	-0.3673*	-0.2525**	-0.0549	-0.3165**	-0.2590***
	(0.1887)	(0.1256)	(0.1009)	(0.1279)	(0.0863)
pol. opp. × post (2nd mandate)	-0.9105***	-0.6275***	-0.2015	-0.4885***	-0.3757***
	(0.2292)	(0.1557)	(0.1244)	(0.1536)	(0.1033)
pol. opp. × post (3rd mandate)	-1.171***	-0.6671***	-0.3934***	-0.6879***	-0.5647***
	(0.2883)	(0.2006)	(0.1360)	(0.1677)	(0.0982)
pol. opp. × post (4th mandate)	-2.015***	-0.9859***	-0.7947***	-0.8249***	-0.6440***
	(0.3106)	(0.2218)	(0.1535)	(0.2148)	(0.1311)
Observations	123,048	123,048	123,048	123,048	123,048
R^2	0.595	0.577	0.549	0.508	0.329
Within R^2	0.001	0.001	0.001	0.000	0.001
Mean.Dep.Var.Pre	3.094	2.206	0.539	1.345	0.888
author fixed effects	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on data from national repositories. The unit of observation is author by year and the sample period is 2005–2023. Panel A reports the effect on research quantity (total publications, publications in national language, and publications in English); Panel B reports the effect on the author's research network (number of co-authors and number of new co-authors). Each column reports the decomposition of the treatment effect by political mandate. Control variables account for trends for the matching cell over time. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.1.4. Effect on Research Quality – Political Opponents

	Top 1% Pub.		Top 5% Pub.		Bottom 50% Pub.	
	(1)	(2)	(3)	(4)	(5)	(6)
political opponent × post	-0.0100		-0.0699*		-0.0402	
	(0.0143)		(0.0384)		(0.0323)	
political opponent × post (1rst mandate)		-0.0053		-0.0717**		-0.0430
		(0.0144)		(0.0325)		(0.0328)
political opponent × post (2nd mandate)		-0.0086		-0.0710*		0.0017
		(0.0165)		(0.0424)		(0.0382)
political opponent × post (3rd mandate)		-0.0351**		-0.1188***		-0.0892**
		(0.0155)		(0.0460)		(0.0367)
political opponent × post (4th mandate)		-0.0598***		-0.1093**		-0.0712
		(0.0161)		(0.0482)		(0.0492)
Observations	123,048	123,048	123,048	123,048	123,048	123,048
R^2	0.343	0.343	0.567	0.567	0.422	0.422
Within R^2	0.000	0.001	0.000	0.001	0.000	0.000
Mean.Dep.Var.Pre	0.014	0.014	0.054	0.054	0.149	0.149
author fixed effects	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓

Note: results are from OLS Fixed-Effect regression, for each outcome, on data from Hungarian national repositories. The unit of observation is author by year and the sample period is from 2005-2024. The dependent variable is the number of publications in the top 1% and 5% most cited journals and the 50% least cited journals (resp. columns (1), (2), (3)), and the share of the latter over the total number of publications (column (4)). Standard errors (SE) are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

E.2 Impact on the Members of the Networks of Politically Aligned Researchers

Table E.2.1. Effect on Academic Productivity - Network of Political Opponents

Outcome	Research Quantity						Research Quality			
	publications		pub. in english		pub. nat. language		Top 10% Pub.		Top 5% Pub.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Network pol. opp. × post	-0.032		-0.015		-0.017		-0.125*		-0.092	
	(0.029)		(0.042)		(0.032)		(0.068)		(0.079)	
Network pol. opp. × post (1rst m)		-0.007		9.1×10^{-5}		0.024		-0.046		0.015
		(0.026)		(0.036)		(0.030)		(0.067)		(0.082)
Network pol. opp. × post (2nd m)		-0.082**		-0.076*		-0.033		-0.253***		-0.238***
		(0.033)		(0.045)		(0.039)		(0.066)		(0.077)
Network pol. opp. × post (3rd m)		-0.066*		-0.053		-0.048		-0.164*		-0.169*
		(0.038)		(0.051)		(0.048)		(0.084)		(0.096)
Network pol. opp. × post (4th m)		-0.042		0.010		-0.088		-0.138		-0.156
		(0.054)		(0.071)		(0.068)		(0.107)		(0.136)
Mean dep. var. (pre)	4.857	4.857	2.344	2.344	2.915	2.915	0.822	0.822	0.579	0.579
Observations	75,449	75,449	70,931	70,931	70,527	70,527	45,464	45,464	40,198	40,198
author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as political opponents is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Panel A reports the effect on research quantity: total publications (columns 1-2), publications in English (columns 3-4), publications in Hungarian (columns 5-6). Panel B reports the effect on -research quality: publications in the top 10% (columns 7-8) and the top 5% most cited journals in OpenAlex (columns 9-10). The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.2.2. Effect on Academic Productivity - Network of Loyal Researchers

Outcome	Research Quantity						Research Quality			
	publications		pub. in english		pub. nat. language		Top 10% Pub.		Top 5% Pub.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Network ally × post	0.081*		0.077		0.021		0.144*		0.166*	
	(0.045)		(0.059)		(0.051)		(0.086)		(0.100)	
Network ally × post (1rst m)		0.067		0.070		-0.006		0.198**		0.292***
		(0.041)		(0.054)		(0.048)		(0.081)		(0.099)
Network ally × post (2nd m)		0.021		-0.005		-0.034		0.095		0.144
		(0.059)		(0.075)		(0.065)		(0.092)		(0.110)
Network ally × post (3rd m)		0.065		0.011		0.112		0.115		0.084
		(0.056)		(0.070)		(0.073)		(0.110)		(0.139)
Network ally × post (4th m)		0.131*		0.147*		0.128		0.176		0.088
		(0.074)		(0.083)		(0.113)		(0.137)		(0.169)
Mean dep. var. (pre)	4.660	4.660	2.536	2.536	2.614	2.614	0.884	0.884	0.639	0.639
Observations	31,085	31,085	29,648	29,648	28,553	28,553	22,280	22,280	19,850	19,850
author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as loyal to the government is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Panel A reports the effect on research quantity: total publications (columns 1-2), publications in English (columns 3-4), publications in Hungarian (columns 5-6). Panel B reports the effect on -research quality: publications in the top 10% (columns 7-8) and the top 5% most cited journals in OpenAlex (columns 9-10). The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

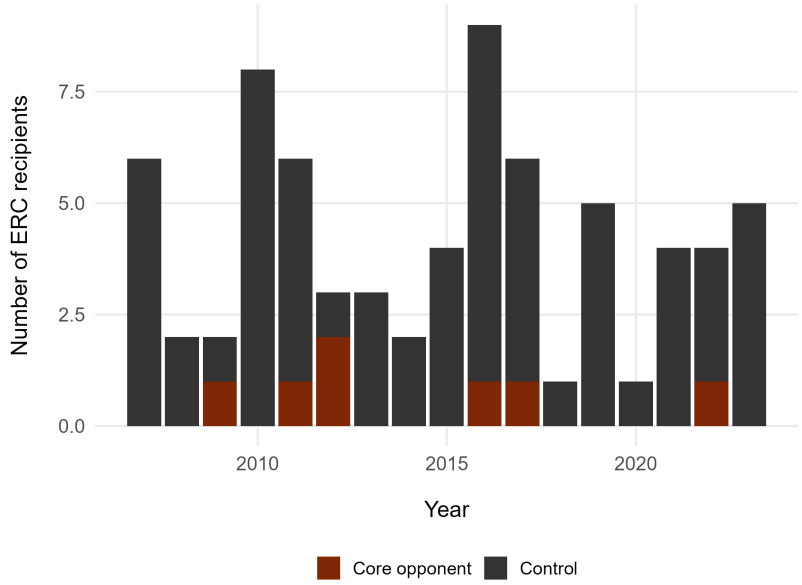
E.3 Channels of repression

E.3.1 Funding and the Effect of Illiberal Policies

ERC funding

Figure E.3.1 shows the total number of ERC recipients per year among our sample of political opponents and researchers from the database tagged as neutral, matched on 5-year entry year windows. Given that only a very small share of Hungarian researchers are part of the political opponents sample, there does not appear to be a strong decreasing trend in the number of ERC recipients in either group. The composition of the groups is quite different, with the vast majority of the political opponents who received an ERC in social sciences. Restricting the focus to researchers in social sciences, Figure E.3.2 shows a strong decreasing trend in the number of publications for political opponent ERC recipients. Table E.3.1 shows the results of the regression.

Figure E.3.1. Number of ERC recipients per year per political status



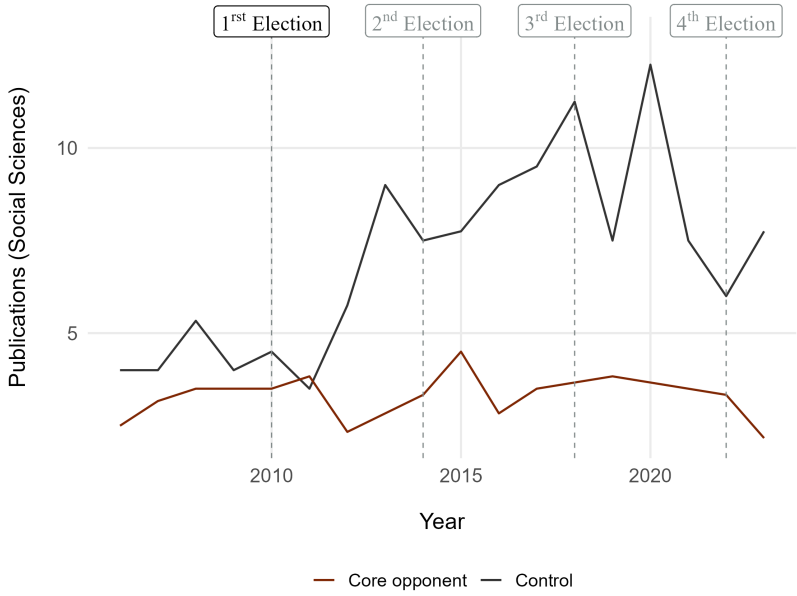
Notes: The graph above reports the total number of ERC recipient by call year for political opponents and for other Hungarian researchers for the period 2006-2023.

Differential effects between public and private affiliations

Table E.3.2 shows the results of the estimation of the following equation:

$$y_{it} = \beta_1 \times \text{opponent}_i \times \text{public}_i \times \text{post}_t + \beta_2 \times \text{public}_i \times \text{post}_t + \beta_3 \times \text{public}_i \times \text{opponent}_i + \beta_4 \times \text{opponent}_i \times \text{post}_t + \times \text{post}_t + \beta_5 \times \text{opponent}_i + \beta_6 \text{post}_t + \gamma \times \text{domain}_i + \epsilon_{it} \quad (3)$$

Figure E.3.2. Number of Publications for ERC Recipients, Social Sciences, per Political Group



Notes: The graph above reports the average number of publications for ERC recipients in social sciences each year, for political opponents and for other Hungarian researchers for the period 2006-2023.

Table E.3.1. Trends in Outcomes for Political Opponents, by ERC Recipient status

	publications	pub. in english	pub. nat. language	citations	nr pub. top 5%
	(1)	(2)	(3)	(4)	(5)
pol. opp × ERC recipient × post	-2.835***	-2.441***	-0.1023	-73.04**	-0.6293**
	(0.4461)	(0.2807)	(0.3109)	(30.48)	(0.2502)
ERC recipient × post	3.256***	3.138***	-0.1967**	122.5***	1.215***
	(0.1385)	(0.0872)	(0.0965)	(9.464)	(0.0777)
pol. opp × post	-0.8046***	-0.4961***	-0.1605	-20.98*	-0.1084
	(0.1737)	(0.1093)	(0.1210)	(11.87)	(0.0974)
Observations	696,167	696,167	696,167	696,167	696,167
R^2	0.109	0.152	0.113	0.032	0.062
Within R^2	0.001	0.002	0.000	0.000	0.000
Mean.Dep.Var.Pre	3.032	1.437	1.851	32.044	0.328
field-year fixed effects	✓	✓	✓	✓	✓
post fixed effects	✓	✓	✓	✓	✓
pol. opp fixed effects	✓	✓	✓	✓	✓
au_cohort_entry_year-year fixed effects	✓	✓	✓	✓	✓

Note: results are from Fixed-Effect OLS regression, for each outcome, on data from MTMT. The unit of observation is author by year and the sample period is from 2005-2024. Treated authors are authors from our sample of political opponents, split by ERC recipient status. Control authors are neutral Hungarian researchers matched to the treated, split by ERC recipient status. We report the effect on total publications, publications in English, publications in Hungarian, citations, publications in the top 10% and the top 5% most cited journals in OpenAlex. Control variables account for trends for field and entry year in academia FE. *** p<0.01, ** p<0.05, * p<0.1.

Table E.3.2. Trends in Outcomes for Political Opponents, by public affiliation

	publications	pub. in english	pub. nat. language	nr co-authors	nr new co-authors
	(1)	(2)	(3)	(4)	(5)
pol. opp × post	-0.7359***	-0.4499***	-0.1680	-0.4972*	-0.4342*
	(0.2086)	(0.1445)	(0.1521)	(0.2808)	(0.2415)
public × post	0.5187***	0.2634***	0.3517*	0.4002**	0.1297
	(0.1968)	(0.0751)	(0.1921)	(0.1847)	(0.1390)
public × pol. opp × post	-0.8819	-0.1046	-0.9060**	0.5726	0.5001
	(0.8888)	(0.6435)	(0.4423)	(0.5579)	(0.4250)
Observations	643,834	643,834	643,834	643,834	643,834
R^2	0.562	0.591	0.496	0.582	0.362
Within R^2	0.000	0.000	0.000	0.000	0.000
Mean.Dep.Var.Pre	2.880	1.325	1.835	3.124	1.827
author fixed effects	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓

Note: results are from Fixed-Effect OLS regression, for each outcome, on data from MTMT. The unit of observation is author by year and the sample period is from 2005-2024. Treated authors are authors from our sample of political opponents, split by whether the author was affiliated to a public institution between 2000 and 2005. Control authors are neutral Hungarian researchers matched to the treated, split by whether the author was affiliated to a public institution between 2000 and 2005. We report the effect on total publications, publications in English, publications in Hungarian , number of co-authors and number of new co-authors. Control variables account for trends for field and entry year in academia FE. *** p<0.01, ** p<0.05, * p<0.1.

E.3.2 International Network and Loss of Influence

Table E.3.3. International Collaborations - Opponents

	Intl. collab.		Regional collab.		US collab.	
	(1)	(2)	(3)	(4)	(5)	(6)
pol. opp × post	0.128		1.81***		0.178*	
	(0.080)		(0.459)		(0.105)	
pol. opp. × post (1rst m)		-0.066		1.28***		0.202**
		(0.068)		(0.425)		(0.093)
pol. opp. × post (2nd m)		0.233***		2.55***		0.224**
		(0.085)		(0.589)		(0.107)
pol. opp. × post (3rd m)		0.299**		2.15***		0.297*
		(0.136)		(0.754)		(0.163)
pol. opp. × post (4th m)		0.222*		0.688		0.003
		(0.127)		(0.654)		(0.111)
Mean dep. var. (pre)	0.148	0.148	1.798	1.798	0.114	0.114
Observations	25,524	25,524	25,524	25,524	25,524	25,524
Author fixed effects	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions. The unit of observation is author by year. Treatment is being perceived as a political opponent. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on the number of publications with at least a co-author outside of Hungary in columns 1-2, in Slovenia, Slovakia or Czechia in columns 3-4, and in the USA in columns 5-6. Odd columns report the effect for the entire period; even columns report the effect by mandate. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.3.4. International Collaborations - Allies

	Intl. collab.		Regional collab.		US collab.	
	(1)	(2)	(3)	(4)	(5)	(6)
ally × post	-0.418***		-1.12		-0.189	
	(0.157)		(0.757)		(0.159)	
ally × post (1rst m)		-0.382**		-0.582*		-0.215
		(0.154)		(0.325)		(0.143)
ally × post (2nd m)		-0.305		-1.28		-0.118
		(0.193)		(0.817)		(0.192)
ally × post (3rd m)		-0.594**		-1.96*		-0.264
		(0.248)		(1.11)		(0.229)
ally × post (4th m)		-0.552*		-2.87**		-0.051
		(0.289)		(1.16)		(0.284)
Mean dep. var. (pre)	0.686	0.686	3.182	3.182	0.444	0.444
Observations	31,734	31,734	31,734	31,734	31,734	31,734
Author fixed effects	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓

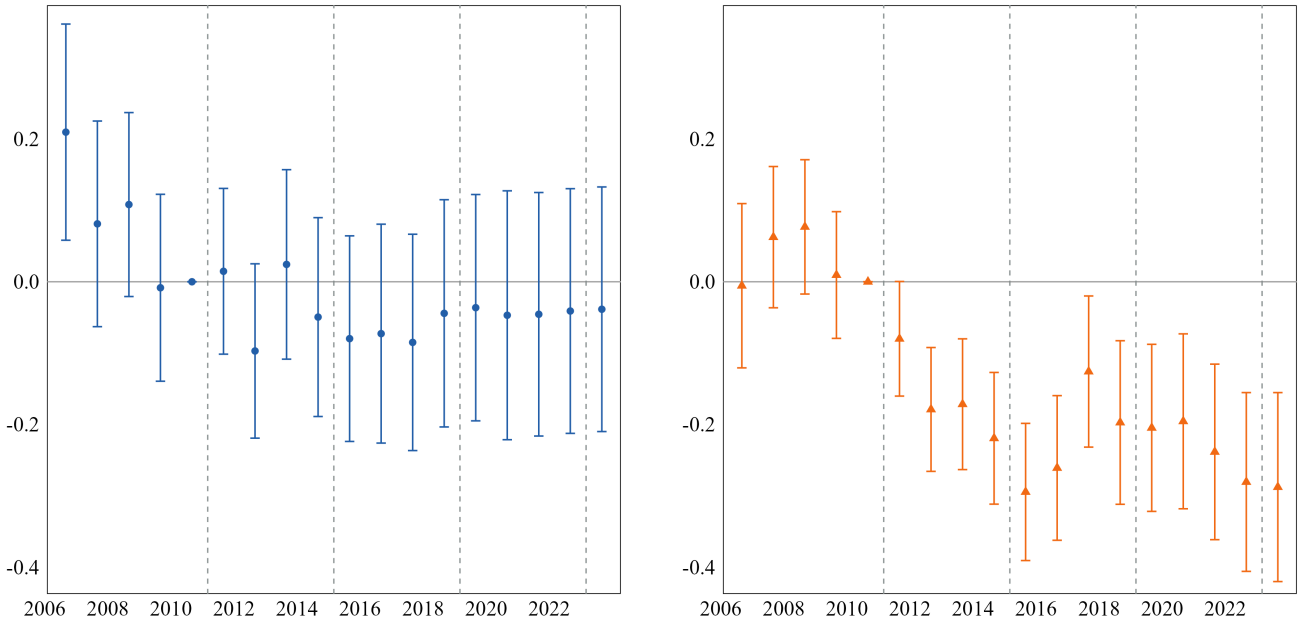
Note: Results are from Fixed-Effect OLS regressions. The unit of observation is author by year. Treated researchers are those that we identified as loyal to the government. We report the effect on the number of publications with at least a co-author outside of Hungary in columns 1-2, in Slovenia, Slovakia or Czechia in columns 3-4, and in the USA in columns 5-6. Odd columns report the effect for the entire period; even columns report the effect by mandate. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table E.3.5. Network of allies: Effect on Network and Influence

	Nr Coauthors		Nr New Collaborations		Citations	
	(1)	(2)	(3)	(4)	(5)	(6)
Network ally × post	-0.091*		-0.099*		-0.036	
	(0.048)		(0.055)		(0.064)	
Network ally × post (1rst m)		-0.090**		-0.142***		-0.016
		(0.041)		(0.054)		(0.060)
Network ally × post (2nd m)		-0.100*		-0.088		-0.025
		(0.053)		(0.062)		(0.075)
Network ally × post (3rd m)		-0.103*		-0.066		-0.082
		(0.062)		(0.069)		(0.090)
Network ally × post (4th m)		-0.060		-0.027		0.134
		(0.072)		(0.096)		(0.141)
Mean dep. var. (pre)	6.205	6.205	3.295	3.295	42.524	42.524
Observations	30,929	30,929	30,737	30,737	30,358	30,358
author fixed effects	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as loyal to the government is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total number of co-authors (columns 1-2), total number of new co-authors (columns 3-4), and citations from other MTMT publications (columns 5-6). The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Odd columns report the average effect on the period 2010-2024 and even columns split the effect by mandate. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Figure E.3.3. Ally Network and Opponent Network: Effect on Total Collaborations

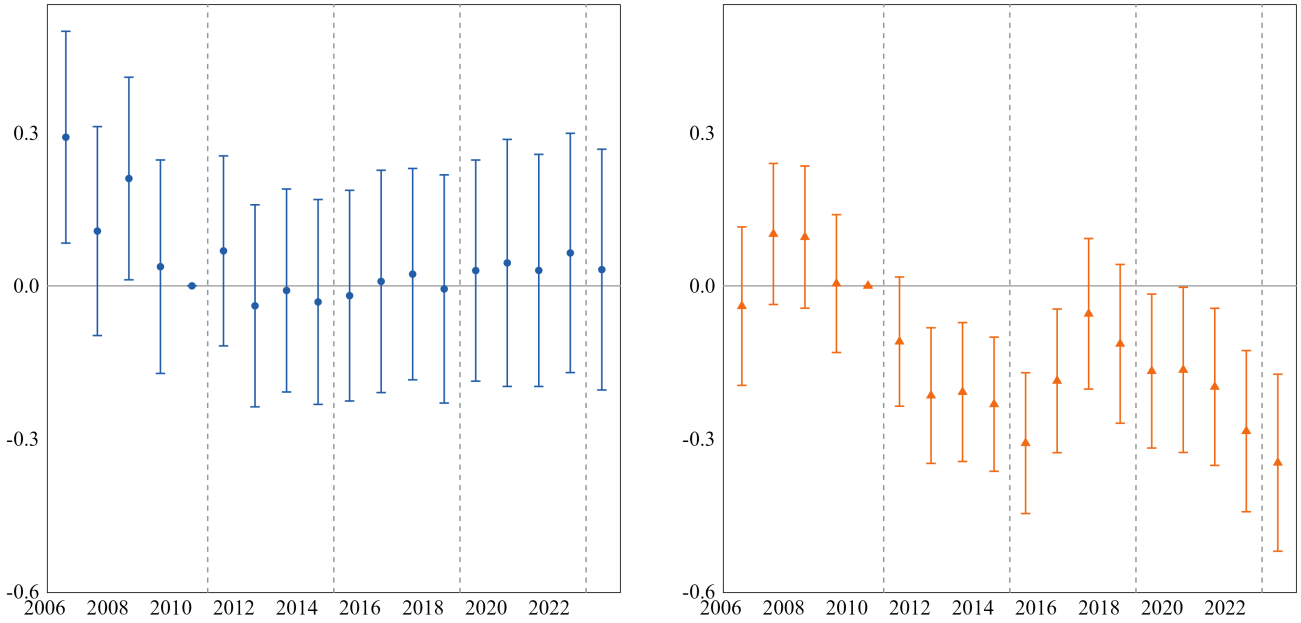


(a) Ally Network

(b) Opponent Network

Note: Results are from Fixed-Effect PPML regressions from CRIS data. The unit of observation is author by year and the sample period is 2005–2023. The outcome variable is the total number of collaborations. Panel (a) reports the effect for the Ally Network individuals i.e. researchers which collaboration index with ally researchers is above the median. Panel (b) reports the equivalent estimation for opponent network. Control variables account for trends field and cohort dynamics over time. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Figure E.3.4. Ally Network and Opponent Network: Effect on New Collaborations

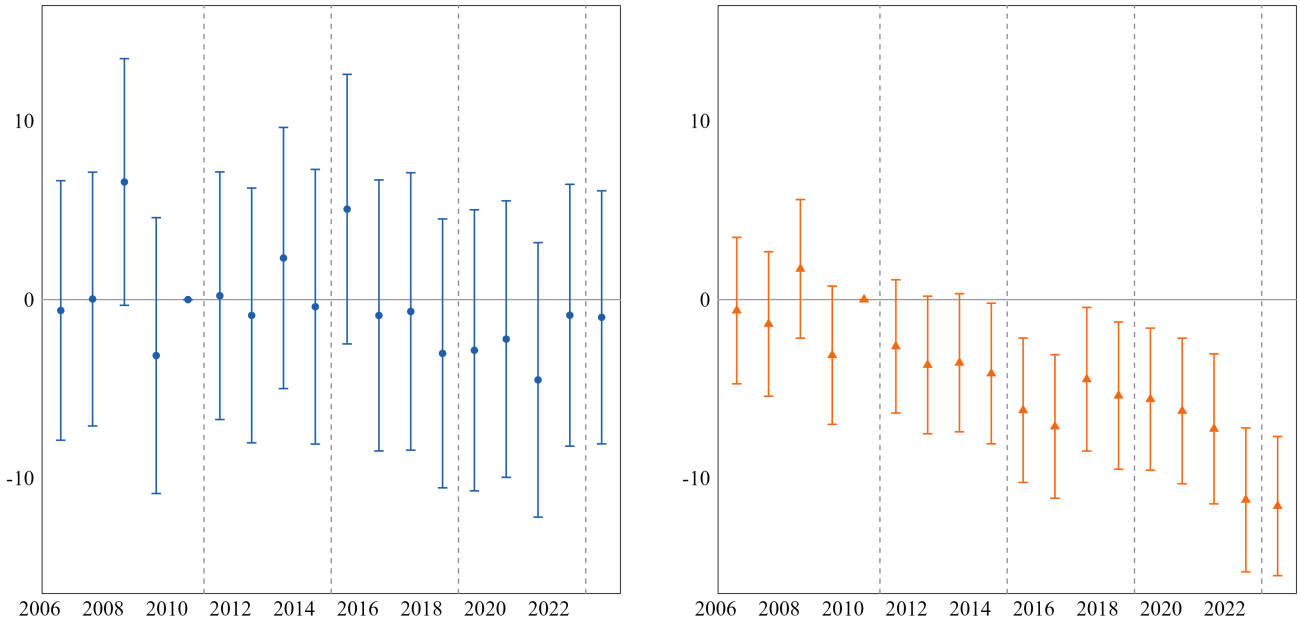


(a) Ally Network

(b) Opponent Network

Note: Results are from Fixed-Effect PPML regressions from CRIS data. The unit of observation is author by year and the sample period is 2005–2023. Panel (a) reports the effect for the Ally Network individuals i.e. researchers which collaboration index with ally researchers is above the median. Panel (b) reports the equivalent estimation for opponent network. Control variables account for trends field and cohort dynamics over time. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Figure E.3.5. Ally Network and Opponent Network: Effect on Citations



(a) Ally Network

(b) Opponent Network

Note: Results are from Fixed-Effect OLS regressions from CRIS data. The unit of observation is author by year and the sample period is 2005–2023. The outcome variable is the count of citations per year. Panel (a) reports the effect for the Ally Network individuals i.e. researchers which collaboration index with ally researchers is above the median. Panel (b) reports the equivalent estimation for opponent network. Control variables account for trends field and cohort dynamics over time. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

F *Exit* and *Voice*: Complementary Results

F.1 Voicing

Table F.1.1. Effect on *Voicing* behaviours – Political Opponents Treatment

	pub. *rule of law*			share pub. *rule of law*		
	(1)	(2)	(3)	(4)	(5)	(6)
pol. opp. × post	0.0775***			0.0153***		
	(0.0247)			(0.0041)		
CEU × post		0.0586**			0.0103**	
		(0.0253)			(0.0046)	
NGO × post			0.1632**			0.0271***
			(0.0724)			(0.0094)
Observations	123,048	121,932	120,852	78,546	77,675	76,936
R^2	0.311	0.289	0.300	0.243	0.238	0.229
Within R^2	0.002	0.001	0.002	0.001	0.000	0.001
Mean.Dep.Var.Pre	0.006	0.006	0.006	0.002	0.002	0.002
author fixed effects	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓

Note: results are from Fixed-Effect OLS regression, for each outcome, on data from MTMT, the Hungarian CRIS-national repositories. The unit of observation is author by year and the sample period is from 2005-2024. Treated individuals are all researchers perceived as political opponents (line 1), researchers who were professors at the CEU prior to 2010 (line 2) and researchers who were named in the list published by Figyelő in 2018. Columns 1 to 3 report the effect on each group for the number of publications identified as mentioning the subject of rule of law; columns 4-6 report the effect on the share of publications mentioning the subject. Control variables account for trends for the matching cell over time. Standard errors (SE) are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

F.2 Ally Network

Table F.2.1. Ally Network: Migration and International Collaboration

	Migration				Collaboration					
	Any affil. abroad		Abroad (2y)		Intl. collab.		Regional collab.		Retiring	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Network ally × post	-0.004		-6.28×10^{-5}		-0.160		-0.635***		-0.0002	
	(0.011)		(0.008)		(0.181)		(0.190)		(0.0006)	
Network ally × post (1rst m)		-0.018		-0.013*		-0.045		-0.078**		-0.0008
		(0.011)		(0.007)		(0.226)		(0.033)		(0.0008)
Network ally × post (2nd m)		0.010		0.010		-0.184		-0.162***		-0.0006
		(0.013)		(0.010)		(0.252)		(0.043)		(0.0008)
Network ally × post (3rd m)		-0.006		0.002		-0.233		-0.155***		0.0003
		(0.014)		(0.010)		(0.158)		(0.055)		(0.0008)
Network ally × post (4th m)		0.005		0.003		-0.236**		-0.198***		0.001
		(0.020)		(0.011)		(0.095)		(0.063)		(0.001)
Mean dep. var. (pre)	0.195	0.195	0.091	0.091	0.663	0.663	3.475	3.475	0.360	0.360
Observations	146,632	146,632	239,670	239,670	239,670	239,670	239,670	230,480	239,670	239,670
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on data from OpenAlex. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as loyal to the government is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Panel A reports the effect on migration: probability of having an affiliation outside of Hungary for the past 2 years (columns 1-2), the past 3 years (columns 3-4), and the past 4 years (columns 5-6). Panel B reports the effect on number of publications with US researchers. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table F.2.2. Ally Network: Additional Measures

	Migration						Collaboration	
	Abroad (recent)		Abroad (3y)		Abroad (4y)		US collab.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Network ally × post	-0.006		0.003		0.006		-0.124	
	(0.008)		(0.008)		(0.007)		(0.168)	
Network ally × post (1^{rst} m)		-0.008		-0.007		-0.001		-0.043
		(0.008)		(0.007)		(0.006)		(0.211)
Network ally × post (2nd m)		-0.001		0.007		0.005		-0.167
		(0.009)		(0.009)		(0.008)		(0.235)
Network ally × post (3rd m)		-0.008		0.007		0.013		-0.166
		(0.010)		(0.010)		(0.009)		(0.140)
Network ally × post (4th m)		-0.005		0.005		0.013		-0.109
		(0.011)		(0.010)		(0.009)		(0.091)
Mean dep. var. (pre)	0.099	0.099	0.074	0.074	0.060	0.060	0.482	0.482
Observations	226,390	226,390	239,670	239,670	239,670	239,670	239,670	239,670
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on data from OpenAlex. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as loyal to the government is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Panel A reports the effect on migration excluding all non-publishing years: probability of having an affiliation outside of Hungary for the past 2 years (columns 1-2), the past 3 years (columns 3-4), and the past 4 years (columns 5-6). Panel B reports the effect on number of publications with US researchers. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

F.3 Political Opponent Network

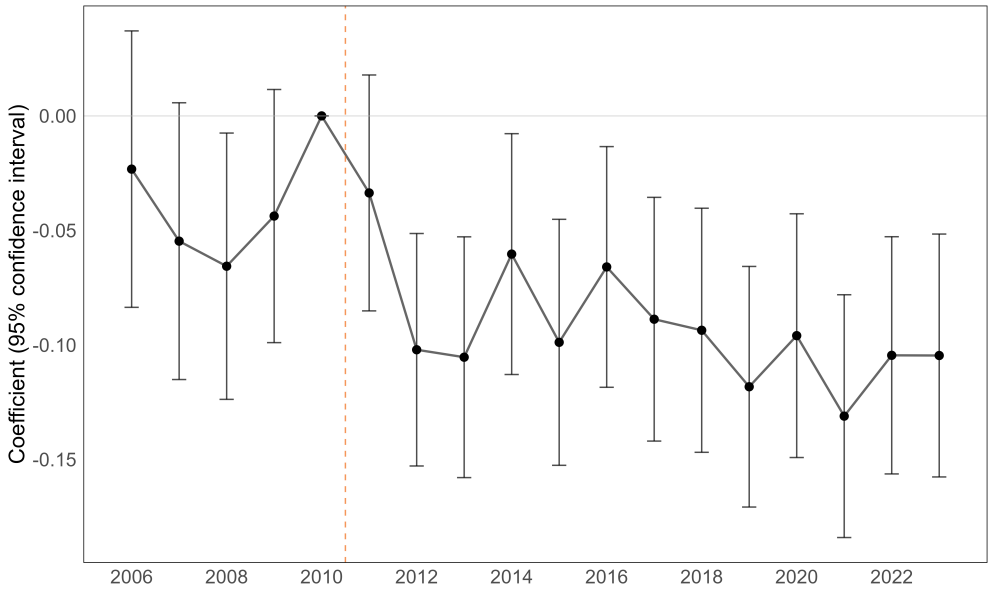
Table F.3.1. Political Opponent Network: Additional Measures

	Migration						Collaboration	
	Abroad (recent)		Abroad (3y)		Abroad (4y)		US collab.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Network opp. × post	0.030*		0.024**		0.023**		-0.034	
	(0.018)		(0.011)		(0.011)		(0.181)	
Network pol. opp. × post (1rst m)		0.004		-0.003		-4.24×10^{-5}		0.037
		(0.015)		(0.009)		(0.009)		(0.199)
Network pol. opp. × post (2nd m)		0.030		0.024*		0.021*		0.098
		(0.020)		(0.012)		(0.012)		(0.198)
Network pol. opp. × post (3rd m)		0.053**		0.044***		0.042***		-0.228
		(0.023)		(0.016)		(0.016)		(0.237)
Network pol. opp. × post (4th m)		0.048*		0.049***		0.042**		-0.347
		(0.024)		(0.018)		(0.017)		(0.350)
Mean dep. var. (pre)	0.117	0.117	0.050	0.050	0.039	0.039	0.221	0.221
Observations	112,450	112,450	128,772	128,772	128,772	128,772	47,565	47,565
Author fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS regressions on data from OpenAlex. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those whose collaboration index with researchers perceived as political opponents is above median. Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. Panel A reports the effect on migration excluding all non-publishing years: probability of having an affiliation outside of Hungary for the past 2 years (columns 1-2), the past 3 years (columns 3-4), and the past 4 years (columns 5-6). Panel B reports the effect on number of publications with US researchers. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

F.4 Additional Results on Research Similarity and Self-censorship

Figure F.4.1. Effect on the Probability of Publishing in Gender - Triple DiD



Note: Results are from Fixed-Effect OLS triple difference-in-differences regressions on data from the CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. The line reports the difference in probability of publishing any paper with gender topics, between researchers who publish in gender topics in Hungary compared to those publishing in gender topics in Slovenia or Croatia, compared to their respective difference in probability with researchers in their country who do not publish in gender topics. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table F.4.1. Triple Difference-in-Differences: Researchers working in Gender

	Pubs. (1)	Co-authors (2)	Pub. Gender (3)	Publish in Gender (4)
Post × gender	-0.006	0.014	-0.215***	-0.151***
	(0.028)	(0.029)	(0.027)	(0.010)
Post × hungary × gender	-0.094***	-0.142***	-0.105**	-0.039***
	(0.036)	(0.040)	(0.043)	(0.014)
Observations	353,680	335,814	377,767	377,767
Author fixed effects	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓
Country × Cohort × Cohort fixed effects	✓	✓	✓	✓

Note: Results are from Fixed-Effect Triple difference-in-differences regressions on data from the CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those who published at least 3 publications in gender topics (first line) and those who do so in Hungary (second line). Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total publications, total number of co-authors, total publications with gender keywords in the title, and probability to publish any paper with gender keywords in its titles. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table F.4.2. Triple Difference-in-Differences: Researchers working on Sensitive Topics

	Publications (1)	Co-authors (2)	Pub. Sensitive (3)	Publish in Sensitive (4)
sensitive × Post	0.015	0.038	-0.203***	-0.166***
	(0.035)	(0.050)	(0.028)	(0.014)
hungary × sensitive × Post	-0.113***	-0.311***	-0.035	0.001
	(0.042)	(0.066)	(0.037)	(0.017)
Observations	281,864	261,129	299,629	299,629
Author fixed effects	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓
Country × Cohort × Cohort fixed effects	✓	✓	✓	✓

Note: Results are from Fixed-Effect OLS triple difference-in-differences regressions on data from the CRIS-national repositories. The unit of observation is author by year and the sample period is 2005–2024. Treated authors are those who published at least 3 publications in sensitive topics (first line) and those who do so in Hungary (second line). Authors are matched using their number of publications over the period 2000-2005, entry year in academia and field of research. We report the effect on total publications, total number of co-authors, total publications with sensitive topic keywords in the title, and probability to publish any paper with sensitive topic keywords in its titles. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

Table F.4.3. Researchers Working on Sensitive Topics: Research Similarity

	sim. pre-2005 (HU)		sim. pre-2005 (EN)		sim. Ally	
	(1)	(2)	(3)	(4)	(5)	(6)
sensitive × post	-0.007***		0.001		-0.010***	
	(0.002)		(0.0007)		(0.002)	
sensitive × post (1rst m)		-0.006***		-8.19×10^{-5}		-0.003
		(0.002)		(0.0008)		(0.002)
sensitive × post (2nd m)		-0.007***		0.0007		-0.011***
		(0.002)		(0.0009)		(0.003)
sensitive × post (3rd m)		-0.011***		0.002**		-0.016***
		(0.003)		(0.0009)		(0.004)
sensitive × post (4th m)		-0.011***		0.002*		-0.014**
		(0.004)		(0.001)		(0.006)
Mean dep. var. (pre)	0.819	0.819	0.843	0.843	0.771	0.771
Observations	204,954	204,954	164,034	164,034	93,887	93,887
Author fixed effects	✓	✓	✓	✓	✓	✓
Cohort × Year fixed effects	✓	✓	✓	✓	✓	✓
Field × Year fixed effects	✓	✓	✓	✓	✓	✓

Note: This table gathers the FE OLS regressions for researchers working on sensitive topics. Columns (1)–(2) report estimates for the similarity of Hungarian-language publications with the researcher's own pre-2005 publications, columns (3)–(4) show the estimates for the similarity of English-language publications. Columns (5)–(6) for the similarity with the current research of government-allied researchers. Odd columns report the average post-2005 treatment effect and even columns report the decomposition of this effect by government mandate. All specifications include author, cohort × year and field × year fixed effects. *** p<0.01, ** p<0.05, * p<0.1. *** p<0.01, ** p<0.05, * p<0.1.

G Global effect : Complementary Results

G.1 Migration

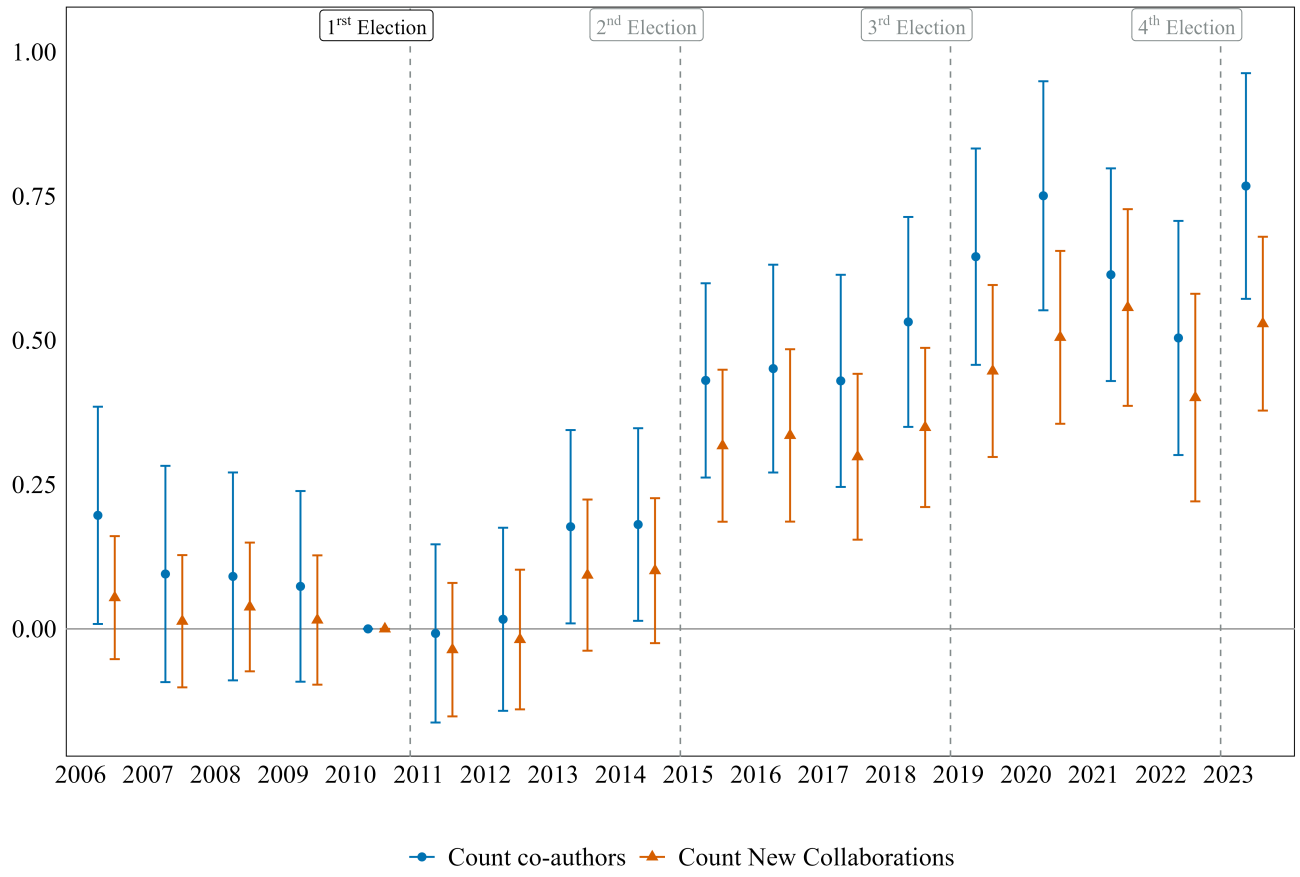
Table G.1.1. Effect on Migration, Hungarian vs. Central Europe

	affiliation in other country for over 2 years		for over 3 years		emigrated	
	(1)	(2)	(3)	(4)	(5)	(6)
hungary × post = 1	0.0114***		0.0144***		0.0146***	
	(0.0038)		(0.0038)		(0.0046)	
hungary × post (1rst mandate)		0.0131***		0.0130***		0.0109***
		(0.0036)		(0.0035)		(0.0041)
hungary × post (2nd mandate)		0.0117**		0.0163***		0.0202***
		(0.0047)		(0.0047)		(0.0057)
hungary × post (3rd mandate)		0.0101*		0.0139***		0.0165**
		(0.0055)		(0.0053)		(0.0067)
Observations	203,938	203,938	203,938	203,938	203,938	203,938
R^2	0.667	0.667	0.683	0.683	0.806	0.806
Within R^2	0.000	0.000	0.000	0.000	0.000	0.001
Mean.Dep.Var.Pre	0.078	0.078	0.063	0.063	0.098	0.098
final_id fixed effects	✓	✓	✓	✓	✓	✓
year × entry cohort fixed effects	✓	✓	✓	✓	✓	✓
year × field fixed effects	✓	✓	✓	✓	✓	✓

Note: results are from Fixed-Effect OLS regression, for each outcome, on data from OpenAlex. The unit of observation is author by year and the sample period is from 2005-2020. Treated authors are authors from Hungary. Control authors are Slovenian researchers matched to the treated. The dependent variable is an indicator variable taking the value 1 if the author publishes with an affiliation outside of Hungary for the treateed and Slovenia for the control after that date for two or three consecutive years (resp. columns (1), (2)), and another indicator variable taking the value 1 if the author is never seen publishing with an affiliation in Hungary for the treateed and Slovenia for the control after that date (column (3)). Control variables account for trends for the matching cell over time. Standard errors (SE) are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.

G.2 Network and New Collaborations

Figure G.2.1. Effect on Hungarian Academics Network



Notes: The figure reports estimates from Fixed-Effects PPML regressions using data from CRIS national repositories. The outcomes are the number of co-authors and the number of new collaborations per author per year over the period 2006–2023. Treated authors are researchers based in Hungary, while the control group consists of matched researchers from Slovenia and Croatia. The outcome variable is winsorized at the top 1 percent of its distribution to limit the influence of extreme values.

H Robustness Exercises

H.1 Placebo Exercise

To assess the validity of our identification strategy, we conduct two falsification exercises, reported in Table H.1.1. First, we re-estimate our main specification on the pre-period only (2000–2010), assigning a placebo treatment year of 2005, before the election of Viktor Orbán in 2010. If our main results captured pre-existing differential trends between targeted and neutral researchers as well as between perceived as ally researchers and neutral ones, the placebo treatment should yield significant effects. First 8 columns columns show that this is not the case: for both political opponents and government allies, the estimated effects on academic productivity, research quality, influence and network are not statistically significant. Second, we randomly assign treatment status to neutral researchers over the actual sample period (2006–2023). The last 4 columns again show no significant effects on any outcome. The two tests indicate that our main estimates are not driven by differential pre-trends or by spurious features of the specification.

Table H.1.1. Robustness checks: placebo and random treatment

Sample	Placebo (2000-2010)								Random treatment			
	Publications		Co-authors		Citations		Top-10 pubs.		Publications	Co-authors	Citations	Top-10 pubs.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Post × pol. opp.	-0.038		-0.100*		-0.036		-0.046					
	(0.034)		(0.057)		(0.076)		(0.153)					
Post × ally		0.030		0.087		-0.013		-0.002				
		(0.040)		(0.057)		(0.096)		(0.085)				
Post × random									-0.012	-0.053	0.015	-0.069
									(0.032)	(0.042)	(0.060)	(0.085)
Observations	62,793	18,583	54,624	17,852	46,692	16,278	7,695	10,383	203,026	190,585	169,622	86,017
Pseudo R^2	0.43188	0.48969	0.48562	0.58323	0.65597	0.66351	0.46950	0.48904	0.37273	0.46893	0.56885	0.48315
Author FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-Field FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year-Entry year FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note: Results are from Fixed-Effect PPML regressions on CRIS data. The unit of observation is author by year. In the first panel, the sample period is 2000-2010. Treated authors are those who are perceived as political opponents (line 1) and as loyal to the government (line 2). Authors are matched using their number of publications over the period 1990-1995, entry year in academia and field of research. Outcomes are the effect on publications (columns 1-2), co-authors (columns 3-4), citations (columns 5-6) and publications in the top 10% most cited journals in OpenAlex (columns 7-8). In the second part of the table, the sample period is 2005-2024, and treatment is randomly assigned to neutral researchers. Outcomes are the effect on publications, co-authors, citations and publications in the top 10% most cited journals in OpenAlex. The dataset is winsorized at the top of the distribution at the 1 percent level for the outcome variable. Control variables account for trends for field and entry year in academia FE. Standard errors are clustered by author. *** p<0.01, ** p<0.05, * p<0.1.