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Political institutions and academic freedom: evidence from across the world

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Abstract

There is scant systematic empirical evidence on what explains variation in academic freedom. Making use of a new indicator and panel data covering 64 countries 1960–2017, we investigate how *de facto* academic freedom is affected by, in particular, political institutions. We find that moving to electoral democracy is positive, as is moving to electoral autocracy from other autocratic systems, suggesting the importance of elections. Communism has a strongly detrimental effect. Legislatures that are bicameral are associated with more academic freedom, while legislatures that become more diverse and more ideologically to the right also seem to stimulate this type of freedom. Presidentialism and coups do not appear to matter much, while more proportional electoral systems strengthen academic freedom. More judicial accountability stimulates academic freedom, and richer countries experience more of it. The results suggest that the political sphere exerts a clear but complex influence on the degree to which scholarly activities are free.

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1 Introduction

Free scholarly inquiry and dissemination of its fruits are rooted far back in time.[1] While such freedom always has been valued highly by scholars (and many others), struggles always have persisted, especially with the state and religious authorities, about its scope. The consequences of controversy have resulted in different levels of academic freedom across time and space.[2] Yet, almost no systematic empirical evidence of what explains that variation is available. The present study is an attempt to fill that lacuna by reporting quantitative analysis spanning recent decades.

More specifically, we explore the extent to which variation in academic freedom can be explained by political factors, most notably political institutions and political ideology. The reason for focusing on political explanatory factors is that the second half of the twentieth century until today has been a period of political dynamism, not least with variations in the extent of democratic governance in the world, and that the historically most important power with which scholars have had to contend for their freedom has been the state. Systematic study is now possible because new cross-country data on how free scholars are in practice to pursue their ambitions have been made available recently by Spannagel et al. (2020).

In the study at hand, we apply Spannagel et al.'s new panel data on *de facto* academic freedom for 64 countries over the 1960–2017 period. We estimate an error correction model (ECM) to distinguish between short- and long-term effects. The explanatory variables of main interest capture political institutions and ideology, but we also control for a number of other potential determinants of academic freedom.

Summarizing our key results, we find that academic freedom benefits from (1) democratization, in the sense of adopting electoral democracy – and almost as much from a move from non-electoral to electoral autocracy, indicating in both cases the importance of elections for academic freedom; (2) legislatures that are bicameral (in the long run) and that become more heterogeneous and more right-wing; (3) a proportional electoral system; (4) stronger judicial accountability; and (5) higher GDP per capita. It is, on the other hand, reduced strongly, both in the short and in the long term, by communism; while two political variables do not seem to matter much: presidentialism and *coups d'état*. However, when interacting the key political variables and our indicator of electoral democracy, we find that academic freedom in democracies is hampered as party concentration in the legislatures increases, but that it benefits from *coups d'état* (that result in democracy) and that it is reinforced strongly in autocracies when democratization occurs, when government ideology becomes more right-wing and when power in the legislature becomes less concentrated. In both types of political systems, a move to communism has strongly deleterious effects. In autocracies, some long-term results are found: academic freedom is positively related to

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[1] A few key events can be mentioned: The issuing by Frederick I in the 1150 s of the *Privilegium Scholasticum*, the founding of the University of Leiden in 1575 and the inclusion of article 20 in the Prussian constitution of 1848 stating that "[s]cience and its teachings shall be free".

[2] We consider the following definition from *The Lima Declaration on Academic Freedom and Autonomy of Institutions of Higher Education* (Fernando, 1989, p. 50) to be useful: "'Academic freedom' means the freedom of members of the academic community, individually or collectively, in the pursuit, development and transmission of knowledge, through research, study, discussion, documentation, production, creation, teaching, lecturing and writing". For more on the history and concept of academic freedom, see, e.g., Machlup (1955), Altbach (2001) and Karran (2009).

bicameralism and a right-wing ideology; it is negatively related to not having any elections at all.

Identifying the determinants of variations in academic freedom empirically arguably is important since good reasons exist for valuing it. The most prominent argument for scholarly freedom is epistemic, that it is a key prerequisite for finding out what is true about the world (Dewey, 1902; Mill, 1859; Polanyi, 1958). Another reason is conveyed by the argument from autonomy, which focuses on a capacity for development of a certain type of independent and inquisitive person (Andreescu, 2009; Dworkin, 1996). Yet another argument is that academic freedom enables innovative, practical and useful knowledge to be produced, to the benefit of industry and politics (Aghion et al., 2008; Eicher et al., 2018; Mokyr, 2012).[3]

To the best of our knowledge, ours is the first study that tries to explain variations in academic freedom using a large cross-country sample. Even though we cannot make strong causal claims owing to the exploratory nature of the study, it still constitutes a novel contribution to the literature and a starting point for further research.[4]

2 Theoretical framework

Our overall theoretical framework is presented in Fig. 1. The framework does not yield precise predictions – that is not its purpose – but serves as an analytical guide to the contingent ways in which our explanatory variables can affect our outcome variables.

Following Acemoglu et al. (2005), in any political system, political decision-makers exercise *de facto* power on the basis of the *de jure* power delegated to them by the political institutions in place.[5] Hence, if political decision-makers have certain preferences regarding how much academic freedom there should be – they may, for example, be interested in avoiding critiques of their chosen policies or that if such criticisms become widely known, political institutions can affect the extent to which those preferences result in political decisions that change respect for academic freedom. The political process determines much of *de jure* academic freedom, which in turn, along with other political decisions and extra-political influences, shape *de facto* academic freedom.

Political decision-makers arguably are interested in academic freedom since academics are members of society's intellectual elites and as such, influence public discourse in many ways – through research, through public debate, through literature, through teaching young and impressionable students, and so on.[6] Academics thus can be seen as potential allies and potential threats by those holding political power, which can cause them to strengthen

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[3] For more on how academic freedom can be justified, see, e.g., Moodie (1996) and Karran (2009).

[4] The existing literature on factors influencing academic freedom mainly comprises qualitative discussions or limited studies of particular cases or countries. For example, vommercial academic-industry relationships do not seem to reduce academic freedom (Behrens & Gray, 2001; Streiffer, 2006); government research assessments appear to have detrimental effects on academic freedom (Martin-Sardesai et al., 2017); communism has impeded academic freedom in Polish sociology (Kwasniewicz, 1994); and the authoritarian cultures of many Muslim-majority countries has been detrimental for academic freedom (Kraince, 2008).

[5] Political institutions have been shown to affect outcomes other than academic freedom – for overviews, see Persson and Tabellini (2003), Kurrild-Klitgaard and Berggren (2004) and Voigt (2020).

[6] Leighton and López (2014) show how academics often can influence reform paths by providing alternatives to the prevailing ideas that are available to political decision-makers at critical junctures.

academic freedom (if scholars are perceived as allies) or to reduce it (if scholars are perceived as threats).[7]

We now discuss what can be expected on theoretical grounds regarding how various political institutions, and a few other features of the political process, can influence *de facto* academic freedom.

First, regarding the most basic (sets of) political institutions, those determining *the system of government*, we expect electoral democracies to have more academic freedom than non-democracies. The former are characterized by political offices being filled by contested elections (but need not otherwise have the full range of civil rights of liberal democracies, i.e., academic freedom is not subsumed). As such, political decision-makers in electoral democracies are constrained by free and fair elections, which can make it costly, in terms of votes, to meddle with the freedom of expression, including in academia.[8] Moreover, to the extent that elections occur in non-democracies, more academic freedom should be observed than in non-democracies without elections, as the former explicitly accept a diversity of views on policy and institutional choices.

Second, regarding *presidentialism*, we consider its relation to academic freedom to be ambiguous theoretically (compared to a parliamentary system). While we think that presidents, by (as a rule) being elected directly, tend to take the interests of the whole population into greater consideration, and while that conjecture should speak in favor of greater support for academic freedom, the decision-making aspects of presidentialism versus parliamentarism makes the outcome unclear. Following Tsebelis (1995), on the one hand, an elected president is an additional veto player, making it harder to implement any political program; on the other hand, more power is placed in the hands of one individual, and if that person has certain preferences over academic freedom, it speaks in favor of easier implementation (especially if done through executive orders).

Third, regarding *the structure of the legislature*, bicameralism introduces another veto player into the political system than in one-party legislatures, with a stronger element, typically, of long-term considerations and more difficulty in changing the *status quo* (cf. Berggren & Karlson, 2003). Hence, we expect presidential systems to generate stronger academic freedom.

Fourth, *communism* requires political decision-makers to be guided by an ideology that tends to demand intellectual obedience and to accept no or little dissent from the communist ideology. Moreover, political institutions are designed such that very weak real constraints are imposed on what the political leaders can decide (Smith, 2014). Hence, communism's effect on academic freedom should be negative.

Fifth, regarding *legal institutions*, we expect academic freedom to be stronger the more judicial accountability there is. Accountability is an indicator of the extent to which the legal system is effective and fair, in that specified procedures are in place for disciplining and removing misbehaving (often corrupt or politically motivated) judges

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[7] The conclusion applies to scholars whose work is relevant for politics, in particular those in the social sciences and humanities, and not so much to scholars in the natural sciences. Hence, political decision-makers can champion academic freedom for the latter, while at the same time wanting to restrict, or actually restrict, the academic freedom of those who are seen as threats to their position of power or their ideological goals. Unfortunately, the data do not specify how academic freedom varies between academic disciplines, so we cannot test for such differential effects in our empirical analyses.

[8] Evidence has been reported that fair and free elections can discipline political decision-makers when it comes to economic policy matters, arguably having those decisions conform more to the public interest (Collier & Hoeffler, 2015), if it were possible to identify what that may be.
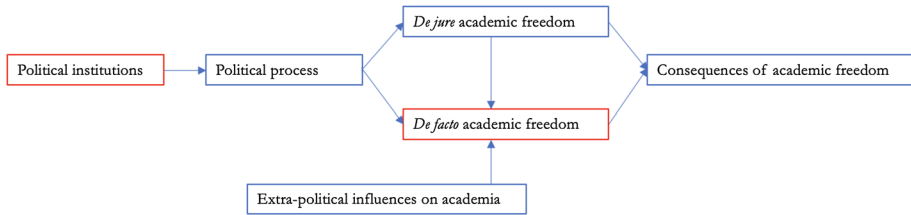
Fig. 1 Political institutions and academic freedom

from the bench. If the legal system is of high quality in that way, it can block attempts by political decision-makers to meddle with constitutionally guaranteed academic freedom (cf. Voigt, 2008).

Sixth, regarding *the electoral system*, we consider it likely that proportional systems are more conducive to academic freedom than majoritarian ones. The former are more party- and less candidate-oriented and characterized more frequently by minority and coalition governments. Being more party-oriented implies more "centralized" relationships with interest groups such as academics, and the tendency for minority and coalition governments implies compromise and pragmatism, suggesting stronger support for academic freedom (Blume et al., 2009).

Seventh, regarding *coups d'état*, i.e., extra-institutional ousting of political decision-makers, the relationship to academic freedom is theoretically ambiguous. On the one hand, any coup d'état's consequence depends on how the programs of the ousted and new leaders differ. If the overthrow entails a transition to democracy, it is likely that support for academic freedom will strengthen. On the other hand, a regime change tends to be disruptive and antithetical to the values that academic freedom entails; *coups d'état* thus could produce less support for such freedom (cf. Bennett et al., 2021).

Eighth, regarding *legislative party concentration*, we expect substantial power concentration to be detrimental to academic freedom. If many parties compete in a legislature, political power is not concentrated – decisions require coalitions and compromise, which can offer better protection for academic freedom than would be observed in more homogeneous legislatures with more unified political agendas.

Last is *governmental and legislative ideology*: It is hard to say, a priori, whether the right or the left is more prone to support academic freedom (Crawford & Pilanski, 2014). A rational-scientific element is associated with many left-wing ideologies, but as indicated by the communist versions, a propensity to curtail freedom for a "higher" party truth always characterizes such regimes, including many "progressive" ones. On the right, one observes a "bourgeois" tradition of supporting academic freedom, both among liberals and conservatives, but on that side of the political spectrum as well, certain reactionary and fascist-oriented forces for whom academic freedom is worth little. Statist conservatives likewise are somewhat skeptical of individual freedoms (Klein, 2009; McCloskey, 2006).

We now turn to the empirical part of our study to investigate whether the hypotheses suggested here are supported or not.[9]

3 Data and empirical strategy

3.1 Measuring academic freedom

Our measure of *de facto* academic freedom has been developed by Spannagel et al. (2020) and is part of the *Varieties of Democracy* (V-Dem) dataset, which both computes an overall indicator of academic freedom (the Academic Freedom Index) and reports its five components.[10] The components are defined as the "Freedom to Research and Teach", Freedom of Academic Exchange and Dissemination", "Institutional Autonomy", "Campus Integrity" and "Freedom of Academic and Cultural Expression".[11] As we show in Table 4 in the Appendix, all components correlate very highly with one another; and a principal components analysis (available on request) furthermore shows that all factor loadings are similar in size. We therefore opt for aggregating them into a single index by normalizing all scores on a 0–1 scale and taking a simple average. The resulting index not only exhibits a Cronbach's Alpha of 0.96, but also provides transparency, facilitates replication, and arguably is easier to interpret than measures derived by factor analysis; it nevertheless has a correlation of 0.98 with the original overall index from Spannagel et al. (2020).

The data vary considerably across countries and over time, and predominantly reflect events and political developments. For example, Turkish *de facto* academic freedom is rated 0.64 in the mid-2000s, which has fallen in recent years to 0.20, putting Turkey at a status practically identical to that of China. Conversely, the assessment of academic freedom in as diverse countries as the United States and Uruguay is 0.96. Other democracies such as Denmark and the United Kingdom rate slightly lower at 0.88, as the much younger democracy of Namibia does, while the more religious Malaysia is rated at 0.64. As such, the index is sensitive to both major events such as democratization as well as more gradual developments, such as the re-autocratization of Turkey or the gradual change in Vietnam,

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[9] Effects of (changes in) political institutions can be of a short- and a long-term kind: the former reflecting "immediate" adjustments and the latter incorporating settled equilibrium effects. We do not have particular theoretically based expectations about the temporal or dynamic character of how political institutions influence academic freedom but consider it an important issue to study empirically, and we do so below. Moreover, the effects can also differ within democracies and within autocracies, as well as between them, which is why we also report interactions between the system of government and a number of political institutions below.

[10] The V-Dem indicators are based on expert assessments. Other measures of academic freedom are available, including one focusing on legal protections of institutional autonomy and tenure within EU countries (Karran, 2007; Karran et al., 2017); survey data on how academics themselves perceive academic freedom at UK universities (Karran & Millinson, 2019); and an expert-assessment indicator by Freedom House (2020). Limitations of the last dataset are a primary focus on political expression (and not only in higher education), and omission of a measure of the freedom to do research (rather than teaching).

[11] See Spannagel et al. (2020, pp. 7–10) for detailed descriptions of the five indicators. In addition, V-Dem contains data on two other indicators of academic freedom that capture the *de jure* status of academic freedom: "Constitutional Protection of Academic Freedom", and "International Legal Commitment to Academic Freedom Under ICESCR [International Covenant on Economic, Social and Cultural Rights]." However, we do not consider them in our study.

where the index has risen slowly by a factor of five from 0.10 in the early 1980s. For an illustration of the dynamics of the index for three countries, see Fig. 2.

Finally, in order to justify a study of the determinants of academic freedom, it might be important to ask whether academic freedom differs from civil liberties or overall freedom of expression, two related concepts. Although plausibly related, we do consider them to be distinct, both in terms of to whom they apply (academics versus everyone) and in content (the measure of academic freedom focuses on specific aspects of academic professional activity and does not entail certain elements of civil liberties, such as the rule of law or individual rights outside of academia). To check the relationship between academic freedom and civil liberties or general freedom of expression for our sample, we plot them, using either the indicator of civil liberties from Freedom House (2020) or a self-constructed index of overall freedom of expression from V-Dem (Coppedge et al., 2020), in Figs. 7 and 8 in the Appendix, with one dot for each country-year.[12] As can be seen, substantial variation is observed in academic freedom across the categories of civil liberties. In addition, the correlation between annual changes in the indices is limited as $r = -0.32$, noting that 1 is the highest level of civil liberties and 7 the lowest, suggesting that the two concepts are statistically distinct. We find a corresponding correlation of $r = 0.72$ between changes in academic freedom and changes in overall freedom of expression (with $r = 0.67$ when excluding transitions out of communism), with changes being particularly relevant for our panel-data analysis. As such, although a clear correlation exists amongst the three indices, as one would expect based on the conceptual similarities and sensitivity to similar events, academic freedom is sufficiently different to warrant separate interest.[13]

3.2 Empirical strategy and control variables

In attempting to assess the determinants of academic freedom, we face a number of specific econometric challenges. First, the data reveal that countries tend to have quite stable levels of academic freedom, interspersed with periods of substantial change. The data thus are unlikely to be stationary. Second, some factors may exert temporary effects only, while others may reflect longer-run processes, which implies a potential difference between short-run and long-run effects. Finally, cross-sectional dependence may be a problem when countries react to similar international events and political developments.

We therefore estimate a set of error-correction models with specification as in (1), a choice that provides us with a flexible solution to those types of problems (cf. De Boef & Keele, 2008).[14]

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[12] The freedom of expression index, which was suggested to us by a reviewer, is the average of V-Dem's indicators of government censorship efforts, harassment of journalists, media self-censorship, freedom of discussion, media bias, critical media, entry and exit of civil society organizations, and repression of such organizations, on a 0–1 scale.

[13] As a way of illustrating the magnitudes of the correlations, they are quite similar to the standard correlations found between income per capita and measures of property rights protection, corruption and general governance quality. Those correlations generally are thought to reflect overall, long-run transition processes rather than any conceptual or practical identity between income and institutions (cf. Paldam 2021). Additionally, it may be worth noting that in approximately 10% of all country-year observations within our sample, assessments of academic freedom and overall freedom of expression move in opposite directions.

[14] Error-correction models offer a good solution to some of the potential problems, but they are not perfect solutions to problems of endogeneity and simultaneity bias. While they do yield relatively unbiased long-run estimates if the exact sequence of events operates in a Granger-causal way, they remain sensitive to bias owing to anticipation effects and measurement problems, although such problems can lead to both positive
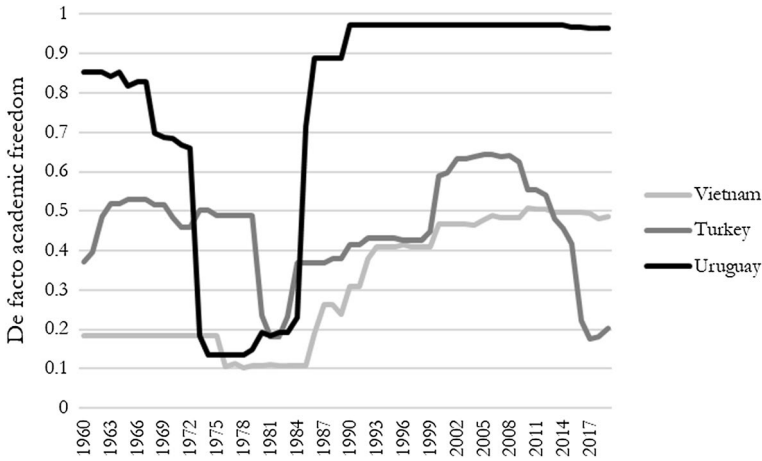
Fig. 2 Academic freedom, three examples

$$\Delta A_t = \alpha_0 + \alpha_1 A_{t-1} + \beta_0 \Delta x_t + \beta_1 x_{t-1} + \beta_2 \Delta y_t + \beta_3 y_{t-1} + \beta_4 \Delta z_t + \beta_5 z_{t-1} + \gamma_t + \epsilon_t \quad (1)$$

where A_t denotes academic freedom at time t, x, y and z are vectors of control variables capturing institutional, economic and political factors, γ_t denotes a full set of annual fixed effects and ϵ_t is the error term. An error correction specification implies that β_0 can be interpreted as the short-run effect of x, while β_1 represents the long-run effect. The error-correction specification also allows us to calculate the implied long-run multiplier from the autoregressive parameter α_1, which then can be interpreted as the long-run implications of short-run changes.

The set of control variables is conceptually divided into three parts. First, we add a set of formal institutional characteristics, including the V-Dem measure of judicial account-ability, which we treat as a measure of the overall quality of economic and judicial gov-ernance. That set of institutional controls also includes dummies for electoral autocracy and democracy; the baseline category is therefore single-party regimes. The information derives from the dataset in Bjørnskov and Rode (2020), which defines electoral autocracy as situations in which countries hold regular multi-party elections that nevertheless are not fair or free from interference, while democracy is defined as a state of multi-party elec-tions that can lead *de facto* to a change of government.[15] The Bjørnskov-Rode data follow

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Footnote 14 (continued)

and negative biases. When, for example, coders are conservative and change their assessments of academic freedom only after observing a stable change, error-correction models will underestimate short-run effects. Conversely, if coders rely on clues from other institutional changes – for example, if they expect democra-tization eventually to lead to more academic freedom – such changes will be coded too early and tend to overestimate short-run effects. As we have no way of solving these problems because finding instruments for all possible changes is impossible and the application of GMM estimators is practically problematic with variables that change episodically and remain stable between episodes, we caution against interpreting the results without due care.

[15] More specifically, according to Cheibub et al. (2010, p. 69): "A regime is classified as a democracy if it meets the requirements stipulated in all of the following four rules: 1. The chief executive must be chosen by popular election or by a body that was itself popularly elected. 2. The legislature must be popularly

the minimalist approach to defining democracy in Cheibub et al. (2010), which brings two specific benefits in our present setting. First, the definition ensures that we do not include academic freedom in our concept of democracy by definition (which could be the case if we instead relied on measures of liberal democracy; see Zakaria, 1997 and Mukand & Rodrik, 2020).[16] Second, a source of worry would arise if expert coders at the V-Dem project expect academic freedom to improve when a country becomes more democratic, which would bias their coding efforts. By relying on a democracy measure from a completely different source, which furthermore rests on a different and more minimalist conception of democracy than the V-Dem measures, we minimize the risk that coder bias affects our estimates. From the same dataset, we enter dummies for communist and unreformed socialist regimes, whether elections occurred in a given year, whether no regular elections occurred, whether the country has a bicameral political system, whether the system is presidential and whether members of parliament are elected predominantly in a proportional voting system. Finally, we also enter Bjørnskov and Rode's (2020) indicator of successful *coups d'état*.

Second, the control variables contain a small set of economic indicators. We enter the logarithm of GDP per capita, the logarithm of population size, and the total trade volume relative to GDP. All data are taken from the Penn World Tables, mark 9.1 (Feenstra et al., 2015).

Finally, we control for three features of national legislatures, which we take from an updated version of the data in Berggren and Bjørnskov (2017). They are the degree of concentration among the parties in the legislature (calculated as a Herfindahl–Hirschman index), the ideological position of the incumbent cabinet and the average ideological position of all parties in the legislature. For coalition governments, the average ideological position of government is weighted by parties' seat shares in the legislature. If the political system is bicameral, these data refer to the lower house. Ideology is coded for each party represented in the legislature as follows: a score of -1 if it is communist or unreformed socialist, -0.5 if it is unreformed or modern socialist, 0 if it is social democratic or non-programmatic, 0.5 if it is conservative and 1 if the party identifies ideologically with classical liberalism. All ideological placements are determined by the party position on economic policy and not on social issues or traditionalism.[17] In the following estimations, we enter either government ideology or legislature ideology (the average position) owing to the substantial correlation ($r = 0.82$) between the two series.

The observations form a large panel dataset covering 64 countries; descriptive statistics are provided in Table 1. The sample primarily is limited by two factors: the availability of measures of academic freedom in the V-Dem dataset and the availability of information on government ideology. The latter is the more restricting factor, as the data are available only

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Footnote 15 (continued)

elected. 3. There must be more than one party competing in the elections. 4. An alternation in power under electoral rules identical to the ones that brought the incumbent to office must have taken place.".

[16] To illustrate that our dichotomous democracy indicator does not by definition entail academic freedom, we note that undemocratic Burkina Faso and Togo have had academic freedom scores of 0.85 and 0.75, respectively, in recent years, which is equivalent to or substantially higher than democracies such as Ecuador (at 0.75) and Guinea (0.56).

[17] As noted in previous research using the ideology data, we often code some parties defining themselves as "right-wing" at different positions than determined by their official ideological locations. Examples include the French *Rassemblement National*, which we code as reformed socialist based on its economic policy preferences, and the *Danish People's Party*, which we code as social democratic.

for countries with a Western-style party system and constitutional democracy. Hence, in the baseline sample we have 64 countries instead of the 125 for which the remaining data can be collected (and which we use in a robustness check). We nevertheless believe that the sample's restriction is warranted, both because we consider ideology to be an important factor and because it furthermore implies that countries cannot have a party system that is predominantly based on ethnicity, religion or regional affiliation, which are unlikely to have personalist regimes. That consideration means, for example, that Islamic countries, where academic freedom may be dictated by religious bodies outside of ordinary politics, are excluded. It also implies that all societies in our sample have long-standing academic traditions established prior to any changes in political institutions during the period we explore.

4 The results

4.1 The development of academic freedom according to the system of government

We start by illustrating the general development of academic freedom over time. Figure 3 shows that average level of *de facto* academic freedom for three groups – single-party regimes and countries with no elections, electoral autocracies and democracies – over the full 1960–2017 period. The figure first depicts how academic freedom has, on average, remained stable across democracies, while increasing in most electoral autocracies from the late 1980s and exhibiting a slight dip in the most recent years. Academic freedom in single-party regimes also appears very stable except for a temporary increase in the early 1990s, as many formerly communist countries gradually transitioned away from being single-party states. Hence, the figure indicates substantial and relatively stable differences across political institutions.

For a deeper understanding of those developments, we next present findings from our regression analysis: first the baseline results and then results based on interactions with democracy that allow us to infer whether some factors are more important in democracy or autocracy.

4.2 Baseline empirical results

Starting with basic political institutions, Table 2 reports evidence that democratization affects *de facto* academic freedom strongly, while a change from a single-party autocracy to an electoral autocracy likewise does so. Moving from no elections or single-party elections to an electoral autocracy increases the index by about 0.13 points, or slightly more than half a standard deviation, although the long-run estimate indicates a slight decrease later over time. A further move from electoral autocracy to full democracy is associated with a rapid increase of about 0.11 points, such that a full transition to democracy implies an increase of about one standard deviation. Conversely, we find that communist dictatorships exhibit even less actual academic freedom than other single-party regimes and that the difference is increasing in the long run. We also find a significant but quite small effect when countries postpone or cancel elections.

With respect to the particular details of political institutions, we find clear evidence of long-run effects of moving to a bicameral system with the additional veto players it entails. As hypothesized, we also find evidence suggesting that systems with proportional voting

Table 1 Descriptive statistics

	Mean	Standard deviation	Observations
Academic freedom	0.740	0.231	2741
Judicial accountability	0.839	1.352	3683
Electoral autocracy	0.128	0.334	3936
Democracy	0.731	0.444	3936
Election year	0.258	0.438	3690
Communist regime	0.114	0.318	3936
Bicameral system	0.517	0.499	3936
Presidential system	0.474	0.499	3936
Proportional voting	0.564	0.499	3936
No elections	0.112	0.316	3936
Successful coup	0.013	0.122	3936
Log GDP per capita	9.475	0.838	3588
Log population size	2.213	1.679	3588
Trade volume	0.593	0.525	3588
Legislature party concentration	0.434	0.246	3552
Government ideology	0.126	0.527	3540
Legislature ideology	0.096	0.386	3540

exhibit slightly higher levels of academic freedom than first-past-the-post electoral institutions. Conversely, the effects of potential political changes in the form of *coups d'état* and election years are positive but imprecisely estimated. Finally, we find that judicial accountability is positively and significantly associated with academic freedom, such that a one-standard deviation improvement is associated with an increase in freedom of approximately one-sixth of a standard deviation.[18]

Turning to the political variables, we find evidence that more party concentration in the legislature is associated with less academic freedom, as is a shift in the legislature to a more right-wing ideological average. We also find a significant long-run effect of becoming richer, although the consequences of wealth appear somewhat smaller than those of changes in political institutions.[19]

As a robustness analysis, we have dropped the ideology variables in order to be able to expand the sample and the time period under study. Noting the risk of omitted-variable bias without entering political ideology into the regressions, and noting that most additional countries do not exhibit strong academic traditions, the new results are presented

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[18] One might see the question as one of political intervention in academia and therefore prefer a measure of judicial *independence*, which conceptually is distinct from that of judicial accountability. In additional tests (available on request), we nevertheless find very similar patterns when using the V-Dem measures of judicial independence. That is not surprising, given the large positive correlation between the measures. We take both to indicate the integrity of the legal system.

[19] We tried entering education, measured as either the average years of schooling or the share of the population with at least a secondary education, in the regressions, but the coefficient always is virtually zero and statistically insignificant. Similarly, we have experimented with separating non-democracies into civilian and military types instead of single- and multi-party autocracies, but we find no clear differences between the two.
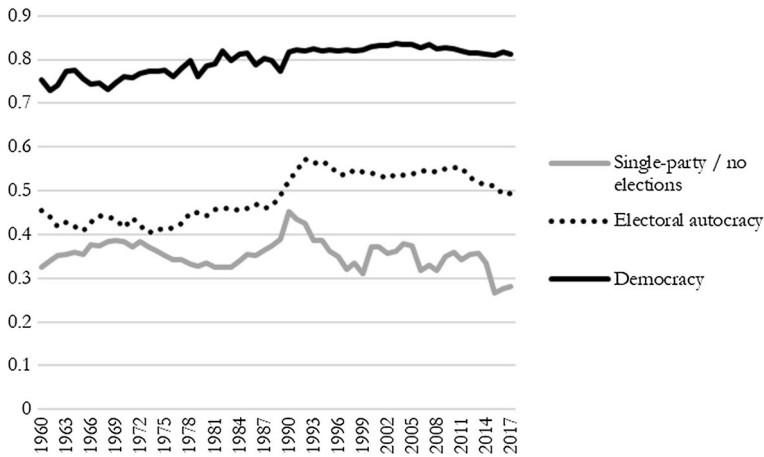
Fig. 3 Academic freedom over time

in Table 5 in the Appendix. The unrestricted sample comprises up to 128 countries going back to about 1950. The full-sample results are somewhat different from those of Table 2, but restricting the comparisons to the 125 societies without single-party regimes – which appear to be outliers – reassuringly yields qualitatively similar results as for our sample with 64 countries.

4.3 A remark about causality

We recognize that the results presented in the preceding section do not provide evidence of causality. One way of doing so would be to adopt an instrumental-variables (IV) approach, but we have not been able to do so, for two reasons. On the one hand, we have been unable to devise valid instruments satisfying the exclusion restriction; on the other hand, according to Paldam and Gundlach (2018), transitions to democracy seem quite random and hard to predict, which also makes it difficult to apply an IV approach, since one cannot instrument a seemingly random process.[20]

As a viable alternative, we illustrate the lag structure of our time series in a figure depicting changes in academic freedom around political-event years. Figure 4 shows the temporal sequence of change around four regime transitions: from electoral autocracy to democracy (66 events); from single-party regimes to democracy (24 events); from single-party regimes to electoral autocracy (43 events); and from democracy to electoral autocracy (39 events). Exploring the temporal structure provides an indication of (Granger) causality. Figure 4 illustrates the average changes in academic freedom across regime transitions occurring in years between −1 and 0, with the plot starting 4 years before that

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[20] A parallel problem applies to GMM estimators for addressing causality. In situations in which changes in the dependent variable are distinct events while the regime remains stable over long periods of time between those events, lagged levels of regime status tend to be statistically strong predictors of levels, while lagged changes in the independent variables provide very little information about the events. In practice, the particular structure of our data invalidates the use of GMM estimators.

Table 2 Error correction results

Dependent variable: Ideology explanatory variable:		Δ Academic freedom Government ideology 1	Δ Academic freedom Legislature ideology 2
Academic freedom	t-1	− 0.056*** (0.007)	− 0.055*** (0.008)
Judicial accountability	Δ	0.026*** (0.004)	0.026*** (0.004)
	t-1	− 0.000 (0.001)	− 0.000 (0.001)
Electoral autocracy	Δ	0.133*** (0.008)	0.132*** (0.008)
	t-1	− 0.016*** (0.005)	− 0.017*** (0.006)
Democracy	Δ	0.227*** (0.007)	0.226*** (0.007)
	t-1	− 0.003 (0.006)	− 0.004 (0.007)
Election year	t-1	0.002* (0.001)	0.002* (0.001)
Communist regime	Δ	− 0.122*** (0.016)	− 0.122*** (0.016)
	t-1	− 0.027*** (0.005)	− 0.026*** (0.005)
Bicameral system	Δ	0.009 (0.007)	0.008 (0.007)
	t-1	0.005*** (0.002)	0.005*** (0.002)
Presidential system	Δ	− 0.020 (0.014)	− 0.019 (0.014)
	t-1	0.001 (0.001)	0.001 (0.001)
Proportional voting	Δ	0.022*** (0.008)	0.020*** (0.008)
	t-1	0.001 (0.001)	0.001 (0.001)
No elections	t-1	− 0.007** (0.003)	− 0.007** (0.003)
Successful coup	t-1	0.015 (0.009)	0.014 (0.009)
Log GDP per capita	Δ	− 0.019 (0.019)	− 0.017 (0.019)
	t-1	0.005*** (0.002)	0.005*** (0.001)
Log population size	Δ	− 0.063 (0.082)	− 0.056 (0.084)
	t-1	− 0.002* (0.001)	− 0.002* (0.001)

Table 2 (continued)

Dependent variable: Ideology explanatory variable:		Δ Academic freedom Government ideology 1	Δ Academic freedom Legislature ideology 2
Trade volume	Δ	−0.001 (0.006)	−0.001 (0.006)
	t-1	−0.001 (0.002)	−0.001 (0.002)
Legislature party concentration	Δ	−0.044*** (0.008)	−0.044*** (0.007)
	t-1	0.002 (0.004)	0.002 (0.004)
Government ideology	Δ	0.004* (0.002)	
	t-1	−0.000 (0.002)	
Legislature ideology	Δ		0.012*** (0.004)
	t-1		0.002 (0.003)
Annual FE		Yes	Yes
Observations		2385	2788
Countries		64	64
Within R^2		0.478	0.436
Wald Chi squared		–	–

Panel-corrected standard errors. *=10% significance level. **=5% significance level. ***=1% significance level
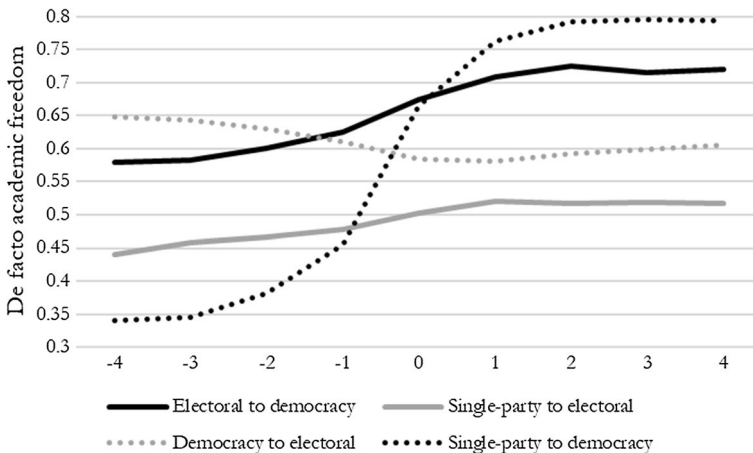

Fig. 4 Academic freedom before and after democratization

and continuing 4 years afterwards. Substantial average changes happen mainly during and immediately after the transition and not clearly before.[21] While we cannot rule out that the relation is endogenous, the lag structure may be taken to suggest that causality runs mainly from changes in political institutions to changes in academic freedom.

4.4 Interaction results

Another complication is that the general results presented so far could hide substantial structural differences between democracies and autocracies. We therefore continue our empirical analysis by estimating interactions between a set of political institutions and democracy in Table 3, which allows us to assess whether some determinants of academic freedom are stronger in one rather than in another group of countries, and if some of them are irrelevant to either autocracy or democracy.

However, Table 3 reveals effects on *de facto* academic freedom that are similar for autocracies and democracies. While estimates for the non-democracies in our sample are reported in the upper panel, the lower panel reports marginal effects for democracies. The coefficients are calculated with the Delta method (cf. Brambor et al., 2006). The results thus highlight differences between autocracies and democracies, such as exemplified by the opposite effects of proportional voting in the two cases. For clarity, we illustrate those effects in two figures: Fig. 5 depicts the short-run effects for democracies and autocracies; Fig. 6 depicts the long-run estimates.

In general, even though most results are fairly similar, the additional interactions reveal that while bicameralism and presidentialism remain long-run determinants of more academic freedom in autocracies, they are irrelevant in democratic regimes. In other words, the veto institutions embodied in presidents and senators mainly constrain autocratic governments. Changes in government ideology also are significant only in autocracies, and while legislature party concentration is a strong determinant for both types of regimes, it is substantially more important in autocracies. As such, we find a stronger influence from the political sphere in autocracies, consistent with their generally weaker checks and balances and veto institutions. Conversely, *coups d'état* are significant and appear more important in democracies than in autocracies. However, one must keep in mind that the coups we observe in countries that were democratic the year beforehand all are events in which the military reinstalled democracy.[22]

In summary, we find that the level of freedom that academics actually experience is defined principally by the political institutions in which they are immersed. However, we also find that the quality of judicial institutions, as captured by judicial accountability, as well as the extent of political competition are important determinants, not least in

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[21] The only clear example in Fig. 4 of academic freedom increasing prior to a regime transition is with transition from a single-party regime to full democracy. Those transitions essentially all are post-communist transitions in Central and Eastern Europe and the Caucasus. A complication with the regime data in those specific cases is that a number of the countries – most clearly in the Baltic region – started their transitions to effective independence *prior* to holding their first democratic elections as independent nations. The Bjørnskov-Rode dataset counts them as democratic only after a democratic election that results in a change of government control; hence, in a real sense our data source locates the democratic transition one or 2 years later than the *de facto* transition occurred.

[22] In an additional test, we also distinguish the effects of judicial accountability in autocracies and democracies. However, although the difference is statistically significant and judicial accountability is more important in democracies, the difference is quite small.

autocracies. Finally, we document the importance not only of communism, but also more general ideological differences, although those factors appear more important for non-democracies. We proceed to discussing the wider interpretation of our findings.

5 Concluding discussion

Academic freedom has been and is valued primarily because it is seen as the best way of generating new provisionally factual knowledge about the world. Without it, scholars risk being constrained by actual or potential interference by external powers, such those wielded by political and religious rulers, that care about other matters. However, we now know that academic freedom varies across time and space, as shown by recently published data from the Varieties of Democracy project, which raises important questions about the determinants of academic freedom. The present study is a first attempt to provide some answers.

We do so by conducting an empirical analysis of 64 countries across the world during the past half-century, focusing on the potential *political* underpinnings of *de facto* academic freedom. The starting point is that academic freedom is at least partly defined by formal institutions shaped by political decision-makers and the political cultures they sustain.

The key result is indeed that democratization is positive for academic freedom. We also find a positive effect of moving to electoral autocracy from other autocratic systems, while communism undermines academic freedom significantly, both in the short and the long run. Political veto institutions likewise matter: legislatures that are bicameral are associated with more academic freedom, while legislatures that become more diverse and move ideologically to the right also seem to stimulate such freedom. Presidentialism and *coups d'état* do not appear to matter much, while more proportional electoral systems strengthen academic freedom. More judicial accountability also stimulates academic freedom, and richer countries experience more of it as well.

Finally, we observe that both political party concentration and political ideology – as well as some types of veto institutions – are substantially more important in autocracies than democracies. We thus note that the stronger checks and balances and veto institutions in democracies counteract at least in part direct political influence on academic freedom. Overall, we take our results to suggest that the rules and practices of the political process constitute an important explanation of variations in academic freedom, hence indicating that people who care about it should not neglect its institutional and ideological underpinnings.

The results therefore mainly confirm what standard public choice considerations suggest. This paper should nevertheless be seen as exploratory, as a first effort at getting a feeling for the correlational patterns relating new data on academic freedom to political factors. Despite our illustration of the temporal patterns around regime changes, one should be careful in interpreting the results as fully causal.

We see substantial potential for further research on what explains variations in academic freedom. One idea, precisely because the present study is exploratory in nature, is to complement it by aiming at causal inference by undertaking more specific studies of particular, exogenous changes in country-specific political institutions and the resulting shifts in academic freedom. Another idea is that the investigation of (potential) determinants could be expanded to include, e.g., religious factors (since religious authorities

Table 3 Error correction results, interactions with democracy

Dependent variable:		Δ Academic freedom	Δ Academic freedom
Ideology explanatory variable:		Government ideology	Legislature ideology
		1	2
Academic freedom	t-1	− 0.050*** (0.007)	− 0.050*** (0.008)
Election year	t-1	− 0.003 (0.002)	− 0.003 (0.002)
Communist regime	Δ	− 0.095*** (0.017)	− 0.106*** (0.017)
	t-1	− 0.029*** (0.011)	− 0.028*** (0.011)
Bicameral system	Δ	0.012* (0.007)	0.006 (0.007)
	t-1	0.010*** (0.003)	0.011*** (0.003)
Presidential system	Δ	− 0.021*** (0.008)	− 0.004 (0.008)
	t-1	0.012*** (0.004)	0.012*** (0.004)
Proportional voting	Δ	0.103*** (0.009)	0.102*** (0.009)
	t-1	0.002 (0.003)	0.000 (0.003)
No elections	t-1	− 0.035*** (0.012)	− 0.040*** (0.013)
Successful coup	t-1	0.019** (0.009)	0.013 (0.009)
Legislature party concentration	Δ	− 0.086*** (0.011)	− 0.088*** (0.011)
	t-1	− 0.008 (0.006)	− 0.009 (0.006)
Government ideology	Δ	0.052* (0.005)	
	t-1	− 0.008*** (0.003)	
Legislature ideology	Δ		0.049*** (0.007)
	t-1		0.015*** (0.004)
Effects with democracy			
Election year	t-1	0.006** (0.002)	0.006** (0.002)
Communist regime	Δ	− 0.009 (0.036)	0.004 (0.036)
	t-1	0.008 (0.012)	0.006 (0.011)

Table 3 (continued)

Dependent variable:		Δ Academic freedom	Δ Academic freedom
Ideology explanatory variable:		Government ideology	Legislature ideology
		1	2
Bicameral system	Δ	− 0.001	0.005
		(0.001)	(0.012)
	t-1	− 0.007*	− 0.009**
		(0.004)	(0.004)
Presidential system	Δ	− 0.013	− 0.029
		(0.041)	(0.041)
	t-1	− 0.009	− 0.012***
		(0.036)	(0.004)
Proportional voting	Δ	− 0.115***	− 0.115***
		(0.014)	(0.014)
	t-1	− 0.002	− 0.001
		(0.003)	(0.003)
No elections	t-1	0.029**	0.034**
		(0.014)	(0.014)
Successful coup	t-1	0.043*	0.049*
		(0.026)	(0.027)
Legislature party concentration	Δ	0.048***	0.050***
		(0.016)	(0.016)
	t-1	0.013*	0.015*
		(0.008)	(0.008)
Government ideology	Δ	− 0.056***	
		(0.006)	
	t-1	− 0.010***	
		(0.003)	
Legislature ideology	Δ		− 0.061***
			(0.008)
	t-1		− 0.019***
			(0.005)
Annual FE		Yes	Yes
Observations		2385	2788
Countries		64	64
Within R squared		0.508	0.505
Wald Chi squared		–	–

Panel-corrected standard errors. The estimates below the dotted line are interactions with democracy and thus can be interpreted as the *additional* effect within democracies. * = 10% significance level. ** = 5% significance level. *** = 1% significance level

have tended to censor academic work over the course of history) and movements wanting to restrict academic freedom based on concerns for the presumed well-being of vulnerable minorities (not least in the student population).
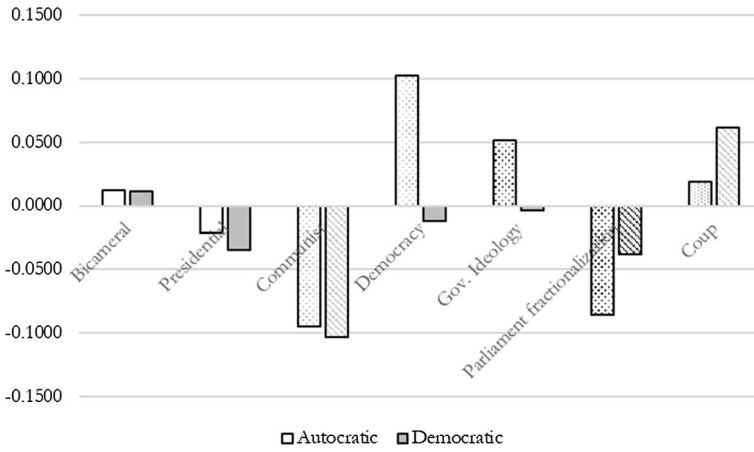
Fig. 5 Overview of short-run estimates. Dots indicate statistical significance at 5% or lower.
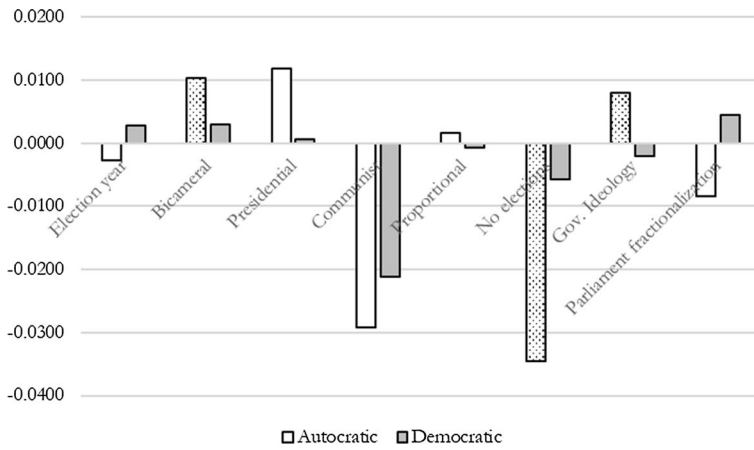

Fig. 6 Overview of long-run estimates. Dots indicate statistical significance at 5% or lower.

Appendix

See Appendix Tables 4 and 5 and Figs. 7 and 8.

Table 4 Correlation matrix

Indicator	1	2	3	4	5
1. Research and Teach	1	0.95	0.85	0.86	0.84
2. Academic Exchange and Dissemination		1	0.85	0.88	0.87
3. Institutional Autonomy			1	0.85	0.78
4. Campus Integrity				1	0.82
5. Academic and Cultural Expression					1
Academic freedom	0.96	0.97	0.92	0.94	0.92

Table 5 Error correction results without ideology variables

Dependent variable:		Δ Academic freedom	Δ Academic freedom
Sample:		All	No single-party
		1	2
Academic freedom	t-1	− 0.025***	− 0.027***
		(0.006)	(0.007)
Judicial accountability	Δ	0.021**	0.024***
		(0.009)	(0.009)
	t-1	0.001	− 0.001
		(0.001)	(0.001)
Electoral autocracy	Δ	− 0.055***	0.036**
		(0.013)	(0.017)
	t-1	− 0.009*	− 0.012**
		(0.005)	(0.006)
Democracy	Δ	0.017	0.105***
		(0.022)	(0.025)
	t-1	− 0.001	− 0.004
		(0.005)	(0.007)
Election year	t-1	0.002*	0.003**
		(0.001)	(0.001)
Communist regime	Δ	− 0.059***	− 0.084***
		(0.023)	(0.027)
	t-1	0.000	0.002
		(0.003)	(0.011)
Bicameral system	Δ	0.008	0.008
		(0.011)	(0.011)
	t-1	0.001	0.002
		(0.001)	(0.001)
Presidential system	Δ	0.005	− 0.003
		(0.014)	(0.019)
	t-1	0.000	− 0.001
		(0.001)	(0.001)
Proportional voting	Δ	0.012	0.025*
		(0.011)	(0.014)
	t-1	0.001	0.002
		(0.001)	(0.001)
No elections	t-1	− 0.091**	–
		(0.006)	
Successful coup	t-1	− 0.003	− 0.006
		(0.015)	(0.015)
Log GDP per capita	Δ	− 0.008	− 0.006
		(0.011)	(0.013)
	t-1	− 0.000	− 0.000
		(0.001)	(0.001)
Log population size	Δ	− 0.065*	− 0.049
		(0.039)	(0.045)
	t-1	− 0.001**	− 0.001**
		(0.000)	(0.000)

Table 5 (continued)

Dependent variable:		Δ Academic freedom	Δ Academic freedom
Sample:		All	No single-party
		1	2
Trade volume	Δ	− 0.001**	− 0.001**
		(0.001)	(0.001)
	t-1	− 0.001	− 0.001
		(0.001)	(0.001)
Annual FE		Yes	Yes
Observations		5073	4161
Countries		128	125
Within R squared		0.243	0.287
Wald Chi squared		–	–

Panel-corrected standard errors. $*=10\%$ significance level. $**=5\%$ significance level. $***=1\%$ significance level
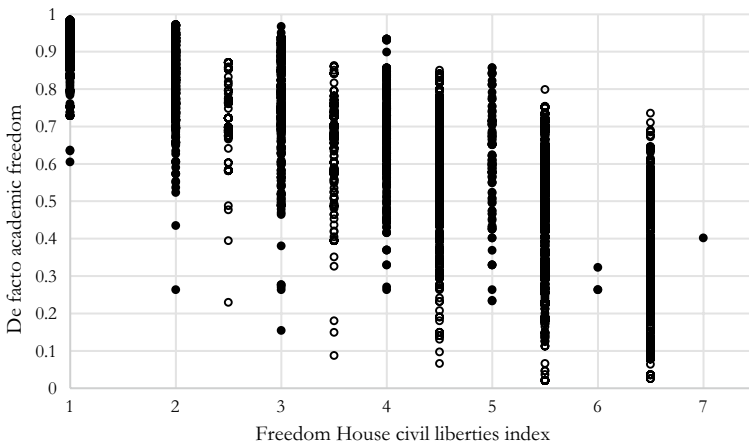
Fig. 7 Academic freedom and civil liberties.
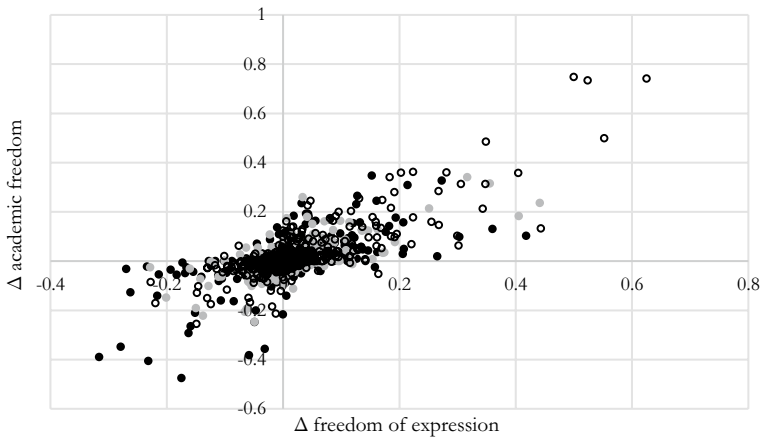
Fig. 8 Changes in overall freedom of expression and academic freedom

Declarations

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