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Economic Development and Democracy: An Electoral Connection*

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Abstract

Scholars continue to debate whether economic development affects regime type. We argue that a clear relationship exists between development and the electoral component of democracy, but not – or only very weakly – between development and other components of (the diffuse) democracy concept. This is so because development enhances the power resources of citizens and elections provide a focal point for collective action. The theory is tested with two new datasets – Varieties of Democracy and Lexical Index of Electoral Democracy – that allow us to disaggregate the concept of democracy into meso- and micro-level indicators. Results of these tests corroborate the theory: only election-centered indices are robustly associated with economic development. This may help to account for apparent inconsistencies across extant studies and shed light on the mechanisms at work in a much-studied relationship. Further analysis shows that development affects electoral democracy, in particular, through reducing electoral fraud, election violence and vote buying.

Introduction

In the heyday of modernization theory it was widely accepted that economic development would favor a democratic form of government (Lipset 1959). In subsequent decades, this thesis was severely challenged. Early on, Barrington Moore (1966) and Guillermo O'Donnell (1973) questioned the logic of the argument. More recent challenges focus on empirical relationships discernible from the crossnational data. Adam Przeworski and collaborators argue that richer countries are more likely to maintain democratic rule but that the initial transition to democracy is unrelated to a country's level of economic development (Przeworski & Limongi 1997; Przeworski et al. 2000). Acemoglu, Johnson, Robinson & Yared (hereafter AJRY) claim that even this relationship is spurious, disappearing once country fixed-effects are incorporated into statistical models (AJRY 2008, 2009; see also Alexander, Harding & Lamarche 2011; Moral-Benito & Bartolucci 2012). In this view, the correlation between income and democracy is the product of some unmeasured confounder that affects both income and democracy. Countering these challenges to the orthodoxy, others argue that the relationship between development and democracy is restored if historical data stretching back to the nineteenth century is incorporated, if different estimators are used, or if one conditions the relationship on institutional or leader changes having taken place (Benhabib et al. 2011; Boix 2011; Boix & Stokes 2003; Che et al. 2013; Epstein et al. 2006; Faria et al. 2014; Kennedy 2010; Treisman 2015).

As things now stand, the modernization debate rests upon a complex set of modeling choices, e.g., which time-periods to include, how to overcome the censored nature of democracy indices, what temporal units of analysis to employ, what corresponding lag structure to adopt, whether to apply linear or non-linear models, and which dynamic models to employ. Left out of this long-running debate is any serious consideration of the *outcome*.

A priori, there is no reason to expect the impact of economic development to be uniform across all dimensions of democracy (Aidt & Jensen 2012). Since democracy is a broad concept, open to many interpretations and operationalizations, the issue is non-trivial. We propose that the differential response of various aspects of democracy to changes in economic development, typically operationalized by per capita GDP, may help to account for the fragility of this relationship, as well as for the ongoing and seemingly irresolvable debate about possible mechanisms at work in the development-democracy nexus. Specifically, we argue that economic development primarily affects electoral contestation. Its impact on other aspects of democracy is weaker, and perhaps nonexistent.

Hence, this paper makes an *empirical* contribution to one of the central, long-standing debates in comparative politics, in which many recent contributions have reported mixed or non-

robust findings. We show that when dissecting the democracy concept, economic development displays a very robust relationship with the electoral aspect of democracy (but not with others). Further, using novel, disaggregated data we show that that robust relationship relates to the effect of development on the maintenance of clean – or “free and fair” – elections; rich countries holding elections are far less likely to experience electoral violence, fraud or vote buying than poor countries holding elections.

Our *theoretical* explanation for this finding hinges on power resources and collective action dilemmas. We argue that economic development enhances the power resources of citizens vis-à-vis leaders. However, this shift does not lead to more democratic institutions unless citizens are able to overcome their collective action dilemma. Elections, unlike other aspects of democracy, provide a focal point for collective action, allowing citizens to hold leaders accountable. It is the *combination* of these two factors – a shift in power resources and the focal role of elections – that explains why economic development is robustly associated with electoral contestation but not so clearly with other democratic institutions (which do not provide equally convenient focal points for collective action.)

If our argument is correct, indices that lump many features of democracy together (e.g., Polity and Freedom House), as well as indices that focus on non-electoral elements of democracy (e.g., constitutionalism, civil liberties, participation, deliberation, political equality), will reveal only a weak, or perhaps no, empirical relationship to economic development. Only indices that are tightly focused on the electoral component of democracy should be strongly correlated with previous levels of economic development.

The focal role of elections also suggests that the impact of development on contestation is asymmetric. Our theoretical argument yields no clear reason to expect that economically developed countries will be more likely to introduce elections. But once competitive elections are introduced we expect that it will be more difficult for leaders to abrogate “well-functioning” electoral institutions in a country that is more economically advanced.

Testing this set of hypotheses requires disaggregating the concept of democracy so that its component features can be separately examined. To do so we enlist two new datasets, Varieties of Democracy (“V-Dem”) (Coppedge et al. 2015) and the Lexical Index of Electoral Democracy (Skaaning, Gerring & Bartusevicius 2015). With these new data sources, we conduct extensive empirical tests across a global sample of countries extending back over two centuries. These analyses support our contention that only indicators tightly focused on competitive multi-party elections are robustly and positively associated with economic development. This finding

not only helps to reconcile divergent results in the literature but also sheds new light on causal mechanisms that may be at work in this much-debated relationship.

In Section I, we present our theory. In Section II, we present the data and a benchmark model. In Section III, we probe the robustness of this result. In Section IV, we conduct head-to-head contests between electoral and composite measures of democracy. In Section V, we disaggregate the key index of electoral democracy in order to analyze its component parts, allowing us another peek into the mechanisms that may be at work. In Section VI we distinguish between democratic upturns and downturns. Section VII concludes with a brief discussion of future directions for research on the modernization thesis.

I. Economic Development and Democracy

Democracy is a many-splendored concept including diverse elements such as electoral contestation, constitutionalism (horizontal accountability, rule of law, civil liberties), participation, deliberation, and political equality (Coppedge & Gerring et al. 2011; Cunningham 2002; Diamond & Morlino 2004; Held 2006; Munck 2015). Although these features are correlated, they are not perfectly correlated. Countries scoring high on one dimension may score low, or middling, on another. Well-known examples include early-19th century Britain and Apartheid South Africa, which both scored relatively high on contestation but low on participation.

It follows that economic development may impact some dimensions of democracy more strongly than others, and it may have no effect at all – or perhaps even a negative effect – on other dimensions. To advance our understanding of modernization theory we need to theorize these differential effects. We should not assume that economic prosperity is a juggernaut that brings all good things in its train (though we certainly cannot *a priori* exclude that possibility).

We argue that economic development favors the *electoral* aspect of democracy but that it has less clear impact on other aspects of democracy. To facilitate this argument we distinguish two players: *citizens* (understood here as permanent residents of a sovereign territory, whether formally recognized by the state as citizens or not) and *leaders* (those who control the executive at a particular point in time along with their entourage of family, friends, and advisors).¹

We assume, first, that citizens of a polity are more likely to prefer a democratic regime type than its leaders, other things being equal. Thus, while the preferences of both citizens and leaders may have evolved dramatically over the past two centuries (presumably, in a democratic

¹ We provide a verbal account of the argument here. Elsewhere, we construct a formalized version modelled as a sequential game with incomplete information between citizens and a leader who can manipulate different democratic rights (authors).

direction), we assume that their *relative preferences* remain constant. Note that leaders may derive rents from controlling office (Rowley et al. 1988) as well as the intrinsic rewards inhering in power and status, all of which may incline them to prefer holding onto their positions even in the face of popular opposition. By contrast, surveys of mass publics generally show strong support for democracy, especially when contrasted with other possible options (Chu et al. 2008; Inglehart 2003; Norris 2011).

We assume, second, that economic development increases the *relative power resources* of citizens vis-à-vis leaders. A richer, better educated, more urbanized, more connected citizenry is, by virtue of these traits, more powerful (Inglehart & Welzel 2005; Rueschemeyer et al. 1992). There are many reasons for this, but all point to the idea that wealthier and better educated urbanites are in a better position to engage in oppositional activities (Glaeser et al. 2007). Although development may also enhance the power resources of leaders, leaders in poor countries are *already* in control of considerable resources, especially in autocratic states (Bueno de Mesquita et al. 2003), where they are generally freer to build up police power and to engage in predation. Thus, we expect development to have a differential effect on the power resources of citizens and leaders, with citizens improving their relative position as a society develops.²

However, that citizens acquire more power resources with development is insufficient for ensuring their desired outcome. No citizen, no matter how resourceful, can effectively challenge an incumbent leader alone. In order for citizens to affect the character of national institutions they must overcome collective action dilemmas (Medina 2007). Otherwise, leaders will shirk, preserving power for themselves. A critical feature distinguishing electoral institutions from others is the role that elections play as a *focal point* for citizen action, mitigating collective action problems that would otherwise constrain popular mobilization.³ This protects against democratic backsliding, helping to ensure that electoral institutions, once established, are respected.

The focal role of elections stems from five key features of the electoral process. First, elections are high-stake endeavors, authorizing governments to enact policies influencing the distribution of resources and the sanctioning of values. Second, they are highly visible. One can hardly hold an election in secret. Indeed, elections are likely to be intensively canvassed by the media and by informal networks (which may provide alternative sources of information if the official sources are biased). Third, actions that impair the quality of an election – e.g., widespread

² There may also be alternative mechanisms linking economic development to democracy, pointing in the same direction: As highlighted by, e.g., Boix & Stokes (2003) and Przeworski & Limongi (1997), development may not only reduce the relative power resources of incumbents, but also weaken their *incentives* to fight for maintaining their position if facing an organized (and potentially dangerous) opposition demanding that they liberalize.

³ On problems of collective action pertaining to democracy, see Chong (1991), Fearon (2011), and Weingast (1997). On the role of elections, and electoral fraud, as focal points, see Thompson & Kuntz (2005) and Tucker (2007). On focal points more generally see Schelling (1960).

vote-buying, voter intimidation, denial of access to the ballot to a major party or candidate – are often fairly easy to discern. Although clever leaders have developed subtle ways of manipulating elections (see Birch 2011; Gandhi & Lust-Okar 2009; Lehoucq 2003; Schedler 2013; Simpser 2013), gross infringements are hard to obscure. The most severe infringement upon the principle of free and fair elections – outright cancellation – is also the most visible. Fourth, elections occur across a short period of time and culminate in a single event, the announcement of a winner. At this point, when emotions are running high, it is natural for large numbers of people to mobilize if their preferences are not respected (see, e.g., Beaulieu 2014; Thompson & Kuntz 2005; Tucker 2007). Mobilization is more likely if the will of the majority is denied, for then this majority enjoys the comfort and safety of numbers. Once a tipping point of engagement is reached – making it difficult for the police or army or para-military squads to control a crowd – peripheral actors may enter the fray with minimal risk (Bunce & Wolchik 2011; Beaulieu 2014; Kuran 1989; Lohmann 1994; Tucker 2007).

These characteristics set elections apart from other aspects of democracy, and the prospect of collective action ought to make leaders think twice before manipulating them. By way of contrast, let us consider a non-electoral feature of democracy such as *civil liberties*. While we do not deny that infringements on civil liberties can sometimes engender collective action by regime opponents, we find it less likely that such infringements will constitute as clear focal points as major electoral fraud or cancellation of elections. For example, leaders may infringe upon the right of free speech selectively, arresting only a few individuals at a time and allowing others to bask in (false) security. They may choose an opportune moment, when public attention is focused on another event of great salience (e.g., a natural disaster, international conflict, sporting event). They may even create the conditions for that moment by instigating a distracting event. They may also abridge civil liberties in a clandestine manner, e.g., through disappearances managed by para-military groups or private contracts, thus avoiding direct responsibility. Using various tools of repression, great damage may be done to the democratic ideal of civil liberty without a high level of public awareness and without a single galvanizing event that might prompt the general public to take action. Infringements of civil liberty – in contrast to elections – may be achieved stealthily, providing few natural focal points.

Additionally, elections are mass events, involving the entire citizenry (under conditions of universal suffrage). This sets them apart from civil liberties and other aspects of democracy, which mostly center on the behavior of leaders. When citizens are empowered by education and wealth they are in a better position to resist the blandishments and coercions of the leader and his clique and more likely to behave in a peaceful and orderly manner – all of which contribute

to a free and fair election. This is most obvious in the case of vote-buying, a common strategy of electoral fraud. Mired in poverty, even public-spirited citizens may sell their votes for a modest sum. Well-off citizens, by contrast, are less likely to do so, or will require larger payments (Jensen & Justesen 2014). Electoral fraud may also be less tolerated among wealthier, well-educated middle class citizens on ideological grounds (Aidt & Jensen 2012; Inglehart & Welzel 2005; Stokes et al. 2013; Weitz-Shapiro 2013).

Importantly, focal points operate *only* where elections are already in place. Otherwise, there is no event around which constituencies can mobilize. This suggests that development might have greater impact on the consolidation of electoral democracy (once elections are established) than on the initial transition to electoral rule, following a line of argument initiated by Adam Przeworski and collaborators (Przeworski et al. 2000; Przeworski 2005). In other words, our argument suggests that once established, elections (through providing a focal point) will combine with economic development (providing citizens with more power resources) to form a safeguard against deterioration in electoral democracy. Without such a focal point already in place, our argument provides few clear implications on how economic development should affect the introduction of electoral institutions in regimes that previously had none.⁴

In sum, it is the *combination* of a resourceful, engaged citizenry (which comes from economic development) and a focal point allowing citizens to organize collectively (provided by elections) that allow for effective collective action.⁵ Anticipating this, leaders would be very hesitant to manipulate or even cancel elections in relatively developed countries. Our theoretical discussion suggests several hypotheses which will orient the empirical tests that follow. We expect that economic development is...

1. uncorrelated, or weakly correlated, with *non*-electoral aspects of democracy.
2. strongly correlated with the persistence of contested multi-party elections, and with the quality of elections.

⁴ One line of reasoning would be that the “onset” of electoral institutions should be uncorrelated with economic development, given the lack of a focal point. One might even argue that such onsets should be negatively associated with development, *if* leaders in rich autocracies can anticipate the logic of our argument – they should be fearful of providing citizens that already have ample power resources with focal points for collective action. However, autocratic leaders of developed economies might also expect elections to yield other benefits, and even consider them a tool for gathering information about the opposition or obtain legitimacy (see, e.g., Schedler 2013). Hence, our expectations are not clear on this particular relationship.

⁵ This is then also consistent with recent, intriguing work finding that development increases the probability that institutional changes will be in a democratizing direction, *conditional* on such change (Kennedy 2010) or leader exits (Treisman 2015) actually taking place. The first suggests that collective action problems, for some reason (including elections), have already been solved (if institutional change stems from citizen pressure), whereas the second may either reflect the same or that leader exits (e.g., by natural death) constitute an alternative focal point to elections. Still, we investigate the net effect of development on regime change. In contrast, these studies condition on factors that are endogenous to development, and could arguably be considered part of our outcome variable (and they find no clear unconditional effect of development).

3. strongly correlated, more specifically, with «society-centered» aspects of electoral quality, such as vote-buying, electoral violence, and intimidation.

II. A Benchmark Model

Our main hypothesis centers on the dimension of democracy which we have characterized as *electoral* and which we define narrowly as “clean multiparty elections.” Electoral democracy refers here to the *quality* of the electoral process itself, not the extent of participation in that election (i.e., suffrage or turnout). As noted, we expect that measures focused mainly on the electoral features of democracy will be strongly related to economic development, while measures focused on other aspects of democracy, as well as more comprehensive indices that include both electoral and non-electoral elements, will be only weakly related, or not at all related, to development.

Following Lipset (1959), we shall assume that economic development involves a set of factors including income, industrialization (and attendant changes to class structure), changing sectoral composition, education, communications infrastructure, and urbanization. Since these factors are causally inter-related (in ways that would be difficult to model) and highly correlated (and hence difficult to disentangle), we adopt the usual expedient by which per capita GDP serves as a proxy for the composite concept of economic development. Our chosen indicator is drawn from the Maddison Project (Bolt & van Zanden 2014), transformed by the natural logarithm. Following standard practice (Boix 2011; Treisman 2015), missing data within a time-series is linearly interpolated. However, we provide robustness tests using an alternative proxy, urbanization, in the appendix (Tables B20-B21), and – while not entirely robust – our core result holds up quite well. Other good proxies for economic development with both long time series and extensive cross-country coverage are, unfortunately, hard to identify. It should be noted that we are not concerned with short-term changes in per capita GDP, i.e., economic growth, or with various factors sometimes associated with, but conceptually distinct from, economic development such as wealth distribution or violent conflict.

There is no well-established benchmark model for testing the association between income and democracy, or other determinants of democracy for that matter (Gassebner et al. 2012). Following Boix (2011) and AJRY (2009), we employ a high threshold test in our benchmark model because we want to minimize the possibility of spurious findings. The chosen model features an ordinary least squares estimator along with country and year fixed effects, a lagged dependent variable, and robust standard errors clustered at the country level. Right-side variables are lagged one period behind the outcome and data is analyzed annually. The

benchmark specification is intentionally sparse, disregarding additional factors that might serve as potential confounders but might also introduce post-treatment confounding or greatly truncate the sample. Note that our models include a lengthy time-series, extending for more than 100 years and in some cases up to two centuries, which should provide sufficient within-country information in a fixed-effects framework to mitigate Nickell bias (Nickell 1982).

We begin by assembling indicators that focus on *non-electoral* components of democracy. This includes four meso-level indices from the V-Dem dataset that attempt to measure Liberal, Participatory, Deliberative, and Egalitarian components of democracy (Coppedge et al. 2011; 2015a,b). Additional indices capitalize on the richness of V-Dem data to measure more specific aspects of democracy including Individual Liberty and Rule of Law, Judicial Constraints, Legislative Constraints, Free Expression, Alternative Sources of Information, Free Association, Executive Selection, and (de jure) Adult Suffrage. Detailed definitions of all variables used in this paper are located in Table A1 and descriptive statistics in Table A2. Note that all democracy measures are re-scaled to a 0-1 scale so that coefficients can be directly compared.

Results of these initial tests are shown across the first row of Table 1. Among these twelve non-electoral indicators of democracy only Judicial Constraints is predicted (with the expected sign) by a country's per capita GDP. Somewhat surprisingly, higher income predicts *lower* suffrage – a result that we suspect is spurious. Alternate specifications are reported in Appendix B. There, we show that some aspects of democracy are related to economic development in some specifications, and this goes, for instance, for the liberal component of democracy, free expression and judicial constraints. But none are robust across all specifications, leaving open the question of whether economic development affects non-electoral aspects of democracy. We cannot *conclusively* reject the null hypothesis.

Next, we examine a set of composite indices commonly used to measure democracy in its entirety (following different understandings of the concept). This includes Polity2 from the Polity IV dataset (Marshall, Gurr & Jaggers 2014), the Unified Democracy Scores (“UDS”) from Pemstein et al. (2012), and the Political Rights and Civil Liberties indices from Freedom House (2014). While each of these indices has a somewhat different focus they are all highly aggregated, including a wide variety of underlying concepts and measures. Results of these tests, shown in columns 13-16 in Table 1, suggest that democracy, considered in its entirety, is not clearly identified as a by-product of economic development.

Table 1: Varieties of Democracy

| Outcome | NON-ELECTORAL | | | | | | | | | | | |
|------------------|---------------------------------------|---|--|---|--|--|---|-------------------------------------|---|--------------------------------------|---|------------------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Liberal Component (<i>V-Dem</i>) | Participatory Component (<i>V-Dem</i>) | Deliberative Component (<i>V-Dem</i>) | Egalitarian Component (<i>V-Dem</i>) | Ind. Liberty Rule of Law (<i>V-Dem</i>) | Judicial Constraints (<i>V-Dem</i>) | Legislative Constraints (<i>V-Dem</i>) | Free Expression (<i>V-Dem</i>) | Alternative Information (<i>V-Dem</i>) | Free Association (<i>V-Dem</i>) | Executive Selection (<i>V-Dem</i>) | Adult Suffrage (<i>V-Dem</i>) |
| GDPpc(ln) | 0.003 (0.002) | -0.000 (0.001) | 0.001 (0.003) | -0.001 (0.001) | -0.001 (0.002) | 0.004* (0.002) | 0.004 (0.003) | 0.001 (0.003) | -0.001 (0.002) | 0.001 (0.003) | 0.006 (0.007) | -0.007** (0.003) |
| <i>Years</i> | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |

| Outcome | COMPOSITE | | | | MOSTLY ELECTORAL | | | PURELY ELECTORAL | |
|------------------|---------------------------------|----------------------------|-----------------------------------|----------------------------------|------------------------|--------------------------------|--|--|-------------------------------------|
| | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | Polity2 (<i>Polity IV</i>) | UDS (<i>Pemstein</i>) | Political Rights (<i>FH</i>) | Civil Liberties (<i>FH</i>) | BMR (<i>Boix</i>) | Lexical (<i>Skaaning</i>) | Electoral Contestation (<i>V-Dem</i>) | Competitive Elections (<i>Skaaning</i>) | Clean Elections (<i>V-Dem</i>) |
| GDPpc(ln) | 0.002 (0.003) | 0.001 (0.002) | -0.004 (0.006) | 0.002 (0.005) | 0.007 (0.005) | 0.010** (0.005) | 0.007** (0.003) | 0.013** (0.005) | 0.010*** (0.004) |
| <i>Years</i> | 211 | 62 | 37 | 37 | 207 | 211 | 111 | 211 | 111 |

Ordinary least squares regression with lagged dependent variable, country and year fixed effects, and standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). Units of analysis: country-years. Right-side variables measured at T-1. Scales normalized to 0-1 (1=most democratic)

Of course, there are many additional issues to consider pertaining to samples (e.g., Boix 2011), estimators (e.g., Heid et al. 2012), specifications (e.g., Boix & Stokes 2003), and other matters. These are taken up in the next section of the paper. However, the results shown here indicate that whatever relationship may exist between economic development and macro-indices of democracy is not especially strong. Thus far, the skeptical view of modernization theory, introduced at the outset, is upheld.

In the third section of Table 1 (“mostly electoral”) we examine indices that are focused primarily – but not exclusively – on the electoral component of democracy. We begin with the binary democracy indicator from Boix, Miller & Rosato (2013).¹ Their measure (“BMR”) captures whether the legislature and executive are chosen (directly or indirectly) in free and fair elections in which at least a majority of adult men are enfranchised. Note that the inclusion of suffrage is the only departure from a purely electoral indicator (following our definition). Next, we examine the Lexical index (Skaaning et al. 2015), which is based on a cumulative aggregation of indicators capturing whether national elections are held, opposition parties are allowed to run, elections are competitive, and suffrage is inclusive. Again, the inclusion of a suffrage criterion is the only departure from a purely electoral measure. Finally, we employ an index of Electoral Contestation based on different V-Dem indicators including measures of Freedom of Association (including repression of political parties), Clean Elections, and Executive Selection. These are combined through multiplication based on the idea that they are necessary and mutually dependent conditions for contestation. This also means that any clear relationship with income cannot stem from economic development promoting “Electoral authoritarianism”, as having clean elections without fraud, violence and vote-buying is a prerequisite for high scores on this independent variable. Results from these tests are shown in columns 17-19 of Table 1. All electoral indices bear a positive relationship to economic development, though one (BMR) does not surpass the usual threshold of statistical significance.

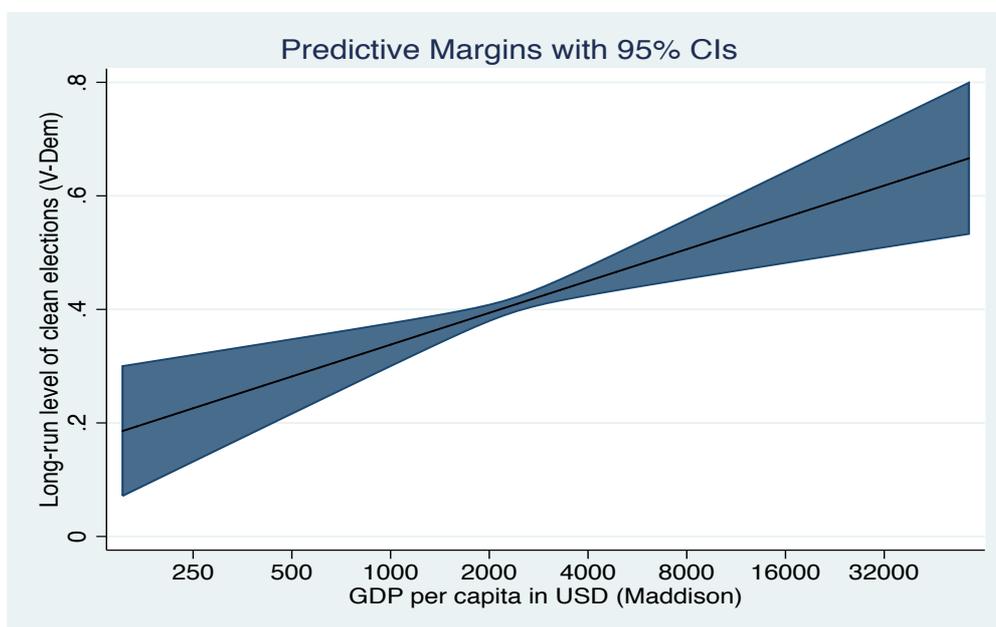
In the final section of Table 1 (“purely electoral”) we examine indicators that are tightly focused on electoral democracy. Competitive Elections focuses on the existence of competitive multi-party elections without any consideration of the extent of suffrage. Specifically, the index is coded 1 in any situation where the chief executive offices and seats in the effective legislative body are filled by multi-party elections characterized by uncertain outcomes – meaning that the elections are, in principle, sufficiently free to enable the opposition to gain government power. Next, we measure Clean Elections, understood as the absence of registration fraud, systematic

¹ It rather closely follows (except for including the participation criterion and some adjustments on how to capture contestedness of elections) an earlier formulation by Przeworski et al. (2000), subsequently known as the Democracy-Dictatorship (DD) measure (Cheibub et al. 2010). We do not include DD here, due to its shorter time series (post-WWII).

irregularities, government intimidation of the opposition, vote buying, and election violence. The index is formed from a Bayesian factor analysis of these component indicators, drawn from the V-Dem dataset. Note that Competitive Elections is a component of the ordinal Lexical index and Clean Elections is a component of Electoral Contestation. These narrower indices are thus nested within the broader indices that we classified as “mostly electoral.” Results of these final tests, shown in columns 20-21 of Table 1, support our argument, as they are all strongly correlated with prior levels of per capita GDP.

To get a sense of the estimated size of the (long-term) causal effect, Figure 1 plots the marginal effect of logged GDP per capita on the long-run predicted equilibrium level of the Clean Elections index based on our benchmark model – Model 1, Table 3. Since our benchmark includes a lagged dependent variable, the coefficient for income reveals only the short-term (yearly) effect – 0.010 for each unit increase in logged income. The long-run effect, however, is $0.010/(1-0.881)$, where 0.881 is the coefficient on the lagged dependent variable, which amounts to roughly 0.080 on the 0-1 Clean Elections index (with a standard error of 0.032). This effect is plotted in Figure 1, surrounded by 95% confidence intervals.²

Figure 1: Long-run Effects



Long-run effects of development (proxied by per capita GDP) on electoral democracy (proxied by Clean Elections).

² The standard errors of the long-run coefficient are calculated using the *ncom* command in Stata 13. They are very similar but slightly larger than those from a Bewley-transformation (De Boef & Keele 2008), where the lag of the dependent variable is used to instrument for its change. The same goes for the long-run equilibrium levels, where the root mean squared error (RMSE) based on the standard errors from Table 1, Model 21, scaled by $(1-0.881)$, yields a slightly larger estimate than the RMSE from the Bewley-transformation. Figure 1 is based on this slightly more conservative RMSE estimate, arrived at through the *margins* and *marginsplot* commands in Stata 13.

To put this in perspective, an extremely poor country, at \$250 USD per capita GDP, is expected to hover around 0.23 on the Clean Elections index – approximately the level observed in Mexico under the PRI in the 1980s. Quadrupling that income level, to \$1000 USD, the expected long-run level of Clean Elections rises to 0.34 – equivalent to the status of Kenya after Arap Moi (but prior to 2007). A median income country by 2010’s standards, at roughly \$7300 USD per capita, is expected to score around the 0.5 midpoint of the Clean Elections scale – corresponding (roughly) to Ghana in the late 1990’s. Given the secular-historical rise of the world economy, these results suggest that economic development brings with it a substantial shift in the quality of elections.

III. Additional Tests

We have demonstrated that measures narrowly focused on the electoral component of democracy are more closely associated with changes in per capita GDP than non-electoral measures or composite indices that include electoral and non-electoral elements. But we have tested only one format: ordinary least squares with a lagged dependent variable, country and year fixed effects, and clustered standard errors. In this section, we explore alternate estimators, samples, and specifications. Our attention is focused on Competitive Elections and Clean Elections since they are narrowly targeted on the concept of theoretical interest. (A similar battery of robustness tests is also conducted on other indices, with results shown in Appendix B.)

Table 2 focuses on Competitive Elections. Model 1 replicates our initial test – Model 20 from Table 1. Subsequent models introduce variations in this benchmark. Model 2 excludes the lagged dependent variable. Model 3 substitutes a trend variable for annual dummies. Model 4 includes a number of control variables that, following the literature, may affect a country’s regime-type: Corruption (Birch 2011), Land Inequality (Ansell & Samuels 2014), neighbor Diffusion (Brinks & Coppedge 2006), Internal Conflict and External Conflict (Reuveny & Li 2003), and (revenues from) Natural Resources (Miller 2015). Descriptions of these variables and their sources can be found in Table A1.

Model 5 repeats this specification without the lagged dependent variable. Model 6 returns to the benchmark model but lags per capita GDP two decades behind the outcome. Indeed, one might expect the effect of development on electoral democracy to work with a fairly long time-lag, and measuring the independent variable as long as 20 years prior to the outcome should also reduce concerns about the relationship being driven by a “reverse effect” of electoral democracy on economic development. (We also tested various other lag structures, and results are stable.)

Model 7 reconstructs the annual panel as a five-year panel (after converting the variables to 5-year moving averages). Given the sluggish nature of right- and left-side variables, this might be regarded as a more plausible formulation, and in this model the outcome is thus measured for the five-year period after the independent variable is measured. Model 8 imputes missing data with the Amelia II algorithm (Honaker & King 2010), extending our benchmark sample with an additional 10,000+ observations. Model 9 presents the second stage of a 2SLS model, where (following Acemoglu et al. 2008), instruments are constructed by using the weighted income of trading partners to capture exogenous international shocks to domestic income.

Table 2: Competitive Elections

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | OLS | IV |
|---------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|--------------------|---------------------|---------------------|--------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | MI | Full |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.013** (0.005) | 0.148*** (0.036) | 0.104*** (0.035) | 0.022* (0.011) | 0.167*** (0.048) | | 0.064*** (0.020) | 0.040*** (0.008) | 0.187** (0.090) |
| GDPpc (ln) L20 | | | | | | 0.165*** (.047) | | | |
| Lagged Y | 0.890*** (0.009) | | | 0.840*** (0.012) | | | 0.578*** (0.031) | 0.544*** (0.031) | |
| Trend | | | 0.002*** (0.001) | | | | | | |
| Corruption | | | | -0.090*** (0.031) | -0.775*** (0.172) | | | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000** (0.000) | | | | |
| Diffusion | | | | 2.108** (0.926) | 10.488** (4.644) | | | | |
| Internal Conflict | | | | 0.008 (0.010) | -0.020 (0.034) | | | | |
| External Conflict | | | | -0.007 (0.008) | -0.039 (0.034) | | | | |
| Natural Resources | | | | 0.000 (0.000) | 0.000 (0.002) | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 157 | 157 | 157 | 132 | 132 | 158 | 156 | 216 | 136 |
| <i>Years</i> | 211 | 211 | 211 | 99 | 99 | 193 | 42 | 213 | 191 |
| <i>Obs</i> | 12947 | 13081 | 13081 | 6683 | 6695 | 12053 | 2509 | 23445 | 9610 |
| R2 (<i>within</i>) | 0.849 | 0.287 | 0.239 | 0.765 | 0.237 | 0.289 | 0.521 | 0.628 | 0.252 |
| <i>Cragg-Donald</i> | | | | | | | | | 156.1 |

Outcome: Competitive Elections. *Estimators:* OLS (ordinary least squares, with standard errors clustered by country), IV (instrumental variable, results from second stage). *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

All tests shown in Table 2 reveal a positive relationship between per capita GDP and Competitive Elections. Remarkably, all robustness tests suggest a stronger relationship between these two variables – judging solely by coefficient estimates – than in our benchmark model

(reproduced as Model 1 in Table 2), although coefficients are not directly comparable across dynamic and non-dynamic models. We also tested alternative models using different sets of control variables – for example omitting the Corruption index, since high income reducing corruption may induce post-treatment bias – and the results do not change. We also experimented with different measures – for instance using oil and gas revenue from Ross (2001) rather than our baseline Natural Resource measure from Miller (2015) – and results are stable.

The tests in Table 2 apply an ordinary least squares estimator, a choice that might seem odd given the binary outcome of interest. OLS provides ease of interpretation, computational simplicity (allowing for unit and time fixed effects along with annual data), and consistency with estimators used for other outcomes (e.g., in Table 1 and Appendix B). Moreover, a linear-probability model provides a sensible estimate of the conditional expectation function without relying heavily on assumptions about the distribution of the error term to produce estimates, as do logit, probit, and other maximum-likelihood models. Granted, the assumptions required for its use are more plausible in settings where the treatment is randomly assigned (Angrist & Pischke 2009: 94-107). To relieve concerns, tests in Table 2 (except the multiple-imputation and instrumental-variable models) are replicated with a logit estimator. Results, shown in Table B22, corroborate OLS estimates.

Table 3 focuses on Clean Elections. Model 1 again replicates our initial test from Table 1. Subsequent models introduce variations in this benchmark, following the template of Table 2 but with a few variations, as discussed below. Clean Elections is a continuous variable, so there is no need to introduce non-linear estimators. However, the variable presents an uneven distribution, with multiple values at the left bound of 0, representing a non-electoral regime. To assure that reported results are not solely the product of an electoral transition (from no elections to elections), Model 7 in Table 3 replicates the benchmark model with a sub-sample of observations in which an electoral regime was in place (elections were on course).

Table 3: Clean Elections

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | IV | |
|---------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | Y>0 | 5-year | 5-year | MI | Full | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
| GDPpc (ln) | 0.010*** (0.004) | 0.100*** (0.026) | 0.074*** (0.026) | 0.015** (0.006) | 0.119*** (0.030) | | | 0.011*** (0.003) | 0.034** (0.014) | 0.083*** (0.015) | 0.009*** (0.003) | 0.116** (0.058) |
| GDPpc (ln) L20 | | | | | | 0.083** (0.037) | | | | | | |
| Lagged Y | 0.879*** (0.010) | | | 0.837*** (0.015) | | | 0.953*** (0.006) | 0.579*** (0.034) | 0.643*** (0.060) | 0.741*** (0.022) | | |
| Trend | | | 0.002*** (0.000) | | | | | | | | | |
| Corruption Index | | | | -0.103*** (0.021) | -0.688*** (0.108) | | | | | | | |
| Land Inequality | | | | -0.000** (0.000) | -0.000** (0.000) | | | | | | | |
| Diffusion | | | | 0.676 (0.500) | 4.189 (2.787) | | | | | | | |
| Internal Conflict | | | | -0.001 (0.005) | -0.008 (0.015) | | | | | | | |
| External Conflict | | | | -0.001 (0.005) | -0.027 (0.018) | | | | | | | |
| Natural Resources | | | | -0.000 (0.000) | -0.000 (0.001) | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 149 | 152 | 152 | 205 | 130 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 111 | 22 | 22 | 114 | 92 | |
| <i>Obs</i> | 11271 | 11375 | 11375 | 6630 | 6649 | 10439 | 8560 | 2211 | 2211 | 21143 | 7789 | |
| <i>R2 (within)</i> | 0.847 | 0.320 | 0.262 | 0.818 | 0.417 | 0.351 | 0.863 | 0.549 | | 0.853 | 0.189 | |
| <i>Cragg-Donald</i> | | | | | | | | | | | 127.6 | |

Outcome: Clean Elections index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), IV (instrumental variables, second stage), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), Y>0 (scores for Clean Elections that surpass 0), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

The continuous nature of Clean Elections allows for the use of a system generalized method of moments estimator (Blundell & Bond 1998), reported in Model 9 of Table 3. This version of GMM is regarded as appropriate for studying sluggish variables. We follow a standard approach for GMM models with long time series in re-coding annual data at five-year intervals (as in Model 8). This reduces the number of time series units and thus the number of instruments, and allows for valid identification (following the assumptions of the model). We enter income and the lagged dependent variable as endogenous and allow two lags for instrumentation. This yields 145 instruments, below the number of cross-sectional units (153), which is the rule-of-thumb threshold (Roodman 2009). The Ar(2) test p-value is .56 and the Hansen J-test p-value is .39, suggesting that Model 9 provides consistent estimates (this holds also for other GMM specifications that we tested).

Overall, the results for Clean Elections are highly robust. Across eleven models shown in Table 3, per capita GDP is related to higher-quality elections in every test, surpassing standard

thresholds of significance. As with Competitive Elections, we find that robustness tests generally show an *enhanced* relationship relative to the benchmark model (Model 1).

Since economic development is a protean concept, amenable to many operationalizations, it is possible that these results may reflect some peculiarity of this particular indicator, drawn from the Maddison project. To alleviate this concern, we replicate the battery of tests in Tables 2 and 3 using Urbanization rather than national income as the key predictor. (Urbanization, the share of population living in cities, is the main alternative to per capita GDP if one requires a measure of economic development with good historical coverage.) Results, shown in Tables B20-21, are generally robust.

At this point, we have subjected two indicators of central theoretical concern – Competitive Elections and Clean Elections – to a litany of empirical tests. But alternatives to these two measures have been tested in only one format, our benchmark model. This incongruity is remedied in a series of tables in Appendix B, where tests contained in Tables 2-3 are replicated for alternate measures of democracy. The general picture that emerges from this interrogation confirms the initial findings presented in Table 1. Non-electoral indicators of democracy, with the notable exception of Judicial Constraints, are not well-predicted (in the expected direction) by per capita GDP (Tables B1-B12). Nor are composite indices (Tables B13-B16). By contrast, indices that focus mostly on the electoral component of democracy are consistently predicted by a lagged measure of per capita GDP (Tables B17-B19). Indeed, Lexical and Electoral Contestation are almost as robust as our “purely electoral” indicators (Competitive Elections and Clean Elections).

The general picture emerging from all these tests is that the relationship between economic development and democracy is dependent on an electoral connection. The more closely an indicator homes in on the purely electoral component of democracy the more sensitive it is to changes in economic development.

IV. Head-to-Head Contests

Measures of democracy are highly correlated, as many studies have pointed out. As such, one must be wary of over-interpreting fine differences in performance across indicators of very similar latent concepts – each of which, we must presume, is affected by potential measurement error. One approach to this problem is to include both measures in the same model so that partial effects (the impact of X controlling for Z) can be calculated. In our setting, this common strategy is more complicated since we are comparing rival measures of the outcome (Y) rather

rival measures of a causal factor. Even so, the strategy of testing rival hypotheses head-to-head in the same model is viable.

Table 4: Head-to-Head Contests

| <i>Outcome</i> | Competitive Elections | Clean Elections | Polity2 | |
|-----------------------|------------------------------|------------------------|---------------------|---------------------|
| | 1 | 2 | 3 | 4 |
| GDPpc (ln) | 0.065*** (0.024) | 0.085*** (0.019) | 0.006 (0.021) | -0.046** (0.022) |
| Polity2 | 0.940*** (0.042) | 0.485*** (0.028) | | |
| Competitive Elections | | | 0.461*** (0.024) | |
| Clean Elections | | | | 0.802*** (0.045) |
| Country FE | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 155 | 149 | 155 | 149 |
| <i>Years</i> | 211 | 112 | 211 | 112 |
| <i>Obs</i> | 12543 | 9739 | 12543 | 9739 |
| <i>R2 (within)</i> | 0.599 | 0.581 | 0.632 | 0.537 |

Ordinary least squares regression with country and year fixed effects, standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). Right-side variables measured at T-1. Units of analysis: country-years.

In Table 4, we build on the benchmark model to test electoral measures of democracy – Competitive Elections and Clean Elections – against the most common composite measure of democracy, Polity2. In Model 1, Competitive Elections is regressed on per capita GDP along with Polity2 plus country and year fixed effects. In Model 2, the analysis is replicated with Clean Elections as the outcome indicator. In both analyses, the relationship between per capita GDP and electoral democracy is robust, even when “controlling” for a composite measure of democracy on the right side of the model. Models 3 and 4 repeat this exercise in reverse. Here, Polity2 forms the outcome while Competitive elections and Clean elections serve as the controls. Here, the result does not survive. Indeed, the relationship turns negative in Model 4.

The set of results presented in Table 4 offers further evidence of our claim that the relationship between development and democracy is not evenly distributed across all aspects of democracy. Composite indices such as Polity2 are not robust to the inclusion of electoral democracy, while electoral democracy measures are robust to including a composite measure.

V. Inside the Box

The Clean Elections index offers a unique opportunity to peak inside the box of an intriguing relationship. Note that this index is composed of eight variables, each of which is measured separately in V-Dem. By testing our benchmark model with each of these outcome variables (separately) we may gain additional insight into the causal mechanisms at work in this relationship.

Four indicators tap into problems of electoral integrity that may be characterized as violence or fraud. *Government intimidation* inquires whether opposition candidates, parties, or campaign workers were subjected to repression, intimidation, violence, or harassment by the government, the ruling party, or their agents. *Other violence* asks whether the campaign period, election day, and post-election process were free from other types of violence related to the conduct of the election and the campaign. *Vote buying* inquires into evidence of vote and/or turnout buying in an election. This refers to the distribution of money or gifts to individuals, families, or small groups in order to influence their decision to vote/not vote, or whom to vote for. *Other irregularities* refers to other irregularities on the part of incumbent and/or opposition parties. Specific examples include use of double IDs, intentional lack of voting materials, ballot-stuffing, misreporting of votes, and false collation of votes. We have strong theoretical reasons to believe that these factors are affected by the the relative power of leaders and citizens, which in turn are responsive to economic development, as articulated in Section I.

Three of the indicators that compose the Clean Elections index measure the capability of a state to manage the election process. *Voter registry* asks whether there was a reasonably accurate voter registry in place at the time of an election and whether it was in fact utilized. *EMB capacity* measures whether the Electoral Management Body in charge of administering national elections has sufficient staff and resources to administer a well-run national election. *EMB autonomy* measures the ability of the Election Management Body to apply election laws and administrative rules impartially in national elections, separate from pressures exerted by the government or governing party. While it is plausible to suppose that economic development might enhance state capacity, this lies outside the ambit of our theory. Thus, we have no strong priors on the relationship of these variables to per capita GDP.

The final indicator comprising the Clean Elections index is *Free and fair elections*. This provides a summary judgment of whether – taking all aspects of the pre-election period, election day, and post-election process into account – the national election was free and fair. It does not consider the extent of suffrage but only the fairness of an election for those who are entitled to

vote. We regard this as an overall measure of electoral democracy, and hence falling within the ambit of our theoretical framework.

In Table 5, we regress each of these outcomes on per capita GDP in our benchmark model (lagged dependent variable, country and year fixed effects, and clustered standard errors). Not all of these variables pass standard tests of statistical significance, suggesting that the meso-level concept – Clean Elections – is more responsive to economic development than several of its components. This could be a product of measurement error, which is generally minimized when a variety of measures are combined in a single index. Note also that these components may perform a substitutive function. When leaders clamp down on (or open up to) electoral democracy they may prioritize one or the other of these factors, leading to variability across time and across countries that serves as noise in the crossnational estimator. For incumbents wanting to manipulate election results, picking one option from the “menu of manipulation” may be sufficient for ensuring election victory (Schedler 2002). For instance, leaders could opt either to stuff ballot boxes or to use party thugs to deter opposition members from voting in the first place; these strategies act as substitutes.

Table 5: Clean Elections, Disaggregated

| <i>Outcome</i> | Fraud & Violence | | | | Capacity | | | General |
|--------------------|-------------------------------------|----------------------------|-------------------------|----------------------------------|----------------------------|--------------------------|--------------------------|-------------------------|
| | Government Intimidation 1 | Other Violence 2 | Vote Buying 3 | Other Irregularities 4 | Voter Registry 5 | EMB Capacity 6 | EMB Autonomy 7 | Free & Fair 8 |
| GDPpc (ln) | 0.027*** (0.009) | 0.029*** (0.009) | 0.034*** (0.007) | 0.032*** (0.009) | 0.012 (0.008) | -0.003 (0.007) | 0.007 (0.008) | 0.029*** (0.010) |
| Lagged Y | 0.924*** (0.007) | 0.901*** (0.008) | 0.917*** (0.007) | 0.918*** (0.007) | 0.910*** (0.009) | 0.960*** (0.005) | 0.950*** (0.005) | 0.914*** (0.008) |
| <i>Countries</i> | 152 | 152 | 152 | 152 | 152 | 151 | 151 | 152 |
| <i>Years</i> | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |
| <i>Obs</i> | 11271 | 11271 | 11271 | 11271 | 11271 | 11227 | 11230 | 11271 |
| <i>R2 (within)</i> | 0.869 | 0.839 | 0.858 | 0.856 | 0.879 | 0.952 | 0.937 | 0.855 |

Outcomes: components of the Clean Elections index. Ordinary least squares regression with country and year fixed effects, standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). Right-side variables measured at T-1. *Units of analysis:* country-years.

Even so, it is worth comparing those indicators that pass our threshold test to those that do not. In line with our expectations, Table 5 shows that all indicators associated with electoral violence and fraud bear a strong relationship to economic development (Models 1-4) while indicators of state capacity do not (Models 5-7). The overall measure of election quality – Free and Fair – is also strongly correlated with per capita GDP, though this result does not help in

disentangling causal mechanisms as it rests at roughly the same level of aggregation as our summary index (Clean Elections).

This set of tests provides additional fodder for our argument that a richer economy empowers citizens to deter leaders from engaging in blatant manipulation of elections and weakens the incentives of leaders to do so. By contrast, other aspects of election quality that derive more from state capacity bear little relationship to income. Also when we disaggregate the index of theoretical interest the “electoral connections” theory makes accurate predictions.

VI. Upturns and Downturns

Finally, we investigate whether the relationship between income and electoral democracy is symmetric or asymmetric. Does economic development enhance the probability of *upturns* (transitions to greater democracy, aka “democratization”) as well as reduce the probability of *downturns* (to greater autocracy, aka “democratic breakdown”), as argued by Boix (2011), Boix & Stokes (2003), and Epstein et al. (2006)? Or does it only affect the probability of downturns, as argued by Przeworski and colleagues (Przeworski et al. 2000; Przeworski 2005)?

Following our theoretical argument, we note that elections cannot serve as focal points in a non-elective regime. Where the established method for selecting leaders is by appointment or inheritance, there are few recognized events – perhaps outside of the death or otherwise abrupt departure of the chief executive (see Treisman 2015) – that might galvanize opposition at a single point in time. Thus, we expect that the impact of economic development is asymmetric – assisting in the consolidation of an electoral regime but not (or only minimally) in the initial transition to an electoral regime.

To analyze this question we return to our preferred measures of electoral democracy – Competitive Elections and Clean Elections – along with a third measure that registers the existence of an Electoral Regime (a regime in which regular elections are on course). Units of analysis are comprised of election-years, as previously. But we also conduct tests with elections as the units of analysis to ensure that our results are not driven by the expansion of observations related to counting non-election years. (Recall that annual data is generated from election data by filling in non-election years with scores from the previous election – unless there is an interruption in the electoral regime, in which case the period of interruption is coded as 0).

Since some of our dependent variables are continuous, we follow Boix (2011: 822) and run two regressions for each dependent variable to differentiate movements in either direction, i.e. toward, or away from, electoral democracy (see also, e.g., Teorell 2010; we also conduct tests

using dynamic probit models on our dichotomous measures, following, e.g., Przeworski et al. 2000; Boix & Stokes 2003). The “Up” model re-codes the outcome to register instances of positive change since the previous year, setting all cases of no change or negative change to zero. The “Down” model re-codes the outcome to register instances of negative change since the previous year, setting all cases of no change or positive change to zero. By comparing the coefficients on GDP across these two regressions we can differentiate the influence of economic development on democratization and on backsliding (away from the democratic ideal).

Table 6: Upturns and Downturns

| <i>Outcome</i> | Competitive Elections | | Electoral Regime | | Clean Elections | | Clean Elections | |
|------------------------|------------------------------|----------------------|-------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|
| <i>Sample</i> | 1801-2011 | | 1901-2011 | | 1901-2011 | | 1901-2011 | |
| <i>Units</i> | Country-year | | Country-year | | Country-year | | Election-year | |
| <i>Direction</i> | Up | Down | Up | Down | Up | Down | Up | Down |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| GDPpc (ln) | 0.004 (0.004) | 0.009*** (0.003) | -0.008 (0.006) | 0.012*** (0.004) | 0.002 (0.004) | 0.008*** (0.002) | -0.002 (0.009) | 0.011*** (0.003) |
| Lagged Y | -0.057*** (0.004) | -0.052*** (0.006) | -0.139*** (0.009) | -0.054*** (0.005) | -0.084*** (0.007) | -0.037*** (0.005) | -0.110*** (0.016) | -0.052*** (0.010) |
| <i>Countries</i> | 157 | 157 | 156 | 156 | 152 | 152 | 149 | 149 |
| <i>Years/elections</i> | 211 | 211 | 111 | 111 | 111 | 111 | 56 | 56 |
| <i>Obs</i> | 12947 | 12970 | 11792 | 11797 | 11271 | 11283 | 2720 | 2723 |
| <i>R2 (within)</i> | 0.047 | 0.051 | 0.110 | 0.031 | 0.076 | 0.029 | 0.090 | 0.089 |

Ordinary least squares regression with country and year fixed effects, standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). Right-side variables measured at T-1.

- “Up” (toward greater democracy): $D_{i,t}^+ = \gamma_1 * D_{t-1} + \beta_1 * GDP_{t-1} + c_i + u_t + e_{i,t}$, where D is the democracy measure (dependent variable), and $D_{i,t}^+ = \max(D_t, D_{t-1})$ after recoding.
- “Down” (avoiding backsliding): $D_{i,t}^- = \gamma_1 * D_{t-1} + \beta_1 * GDP_{t-1} + c_i + u_t + e_{i,t}$, where $D_{i,t}^- = \min(D_t, D_{t-1})$ after recoding.
- c_i and u_t are country- and year-fixed effects.

Results from these analyses, shown in Table 6, support the asymmetric hypothesis.³ Higher income discourages downturns but does not encourage upturns. This is so regardless of whether we focus on dichotomous measures – Competitive Elections (Models 1-2) and Electoral Regime (Models 3-4) – or the more fine-grained Clean Elections index (Models 5-8). It is so regardless of whether the sample includes the twentieth century only (Models 3-8) or the entire modern period (Models 1-2). And, it is so regardless of whether years (Models 5-6) or elections (Models 7-8) provide the units of analysis. (The latter tests suggest that the asymmetric relationship is not solely the product of electoral interruptions, which are not included in the

³ Coefficients on the lagged dependent variable in Table 6 are negative because these models look at change in the dependent variable as the outcome, as opposed to the other tests in this paper where current level is the dependent variable.

election-year panel analysis.) In other words, as per capita GDP rises it becomes less likely that election quality will deteriorate.⁴

As noted, we also tested dynamic probit models for our two binary measures (Electoral regime, V-Dem; Competitive Elections, Skaaning et al. 2015), differentiating between effects of development on the introduction of Electoral regime/Competitive Elections and on their survival (once adopted). The results for Electoral Regime, reported in Appendix Table B.23, follow the results in Table 6: Whereas there is a highly significant coefficient of development on the survival of electoral regimes, there is no significant coefficient on transitions into being one (the point estimate is actually negative). However, when Competitive Elections is the dependent variable, we actually find a positive coefficient significant at 1%, both on the onset and survival of competitive elections. Given that this measure extends back to 1800 rather than 1900, the result corresponds well with those in Boix & Stokes (2003), suggesting that economic development might have had a stronger influence on democratic transitions in the 19th century.⁵

Nonetheless, we note that the dynamic probit models do not include country-fixed effects, and that the results for development inducing the introduction of competitive elections is at best mixed, given the results from Table 6. In contrast, the stabilizing effect of economic development on competitive elections is highly robust, conforming with our clear theoretical expectation that a combination of economic development and pre-existing elections should prevent leaders from discontinuing elections, or blatantly manipulating them (in which case the elections would no longer be competitive).

VII. Conclusion

Since democracy is a diffuse, multi-dimensional concept it stands to reason that if economic development affects democracy, the causal connections are likely to be stronger for some aspects of democracy than for others. Only by disaggregating the concept can this issue be addressed.

In this study, we find that the relationship between economic development and democracy is robust only with respect to the electoral component of democracy, narrowly construed as the existence of competitive national elections and the procedural integrity of the electoral process. Other aspects of democracy such as those associated with the participatory, deliberative, liberal, and egalitarian ideals or with state capacity are not related, or are only weakly

⁴ In addition to this, Models 3-4 indicates that there is also an ‘interruptions/coup effect’; income does not foster the introduction of elections, but it decreases the chances of electoral interruptions such as coups or autogolpes (i.e., the leader altering the regime and concentrating power, discontinuing the practice of holding elections).

⁵ In line with this, the coefficient on transitions is reduced, both in terms of point estimate and t-value, when we restrict the sample to 1900 also for Competitive Elections.

related, to national income and its correlates (e.g., urbanization). This may help to explain why empirical tests employing composite indices such as Polity2 or Freedom House show inconsistent results, leading to a long and seemingly irresolvable debate over modernization theory, referenced at the outset. We also find that while economic development prevents democratic backsliding it does not show a significant relationship to democratization, corroborating the thesis of asymmetric effects (Przeworski et al. 2000).

As part of the contribution of this study, we propose a theoretical framework to explain the differential effects of economic development on democracy. This framework, presented in Section I, suggests that economic development reduces the relative power and alters the utility calculus of leaders, who are in a position to respect or subvert multi-party elections. In a developed society, the direct costs of subversion (e.g., through vote-buying) are raised while the opportunity costs of leaving office are lowered (by virtue of offering remunerative nongovernmental career options). Likewise, the focal role of elections provides a coordination mechanism for citizens who wish to see the will of the people respected. All of these mechanisms are election-centered, having little applicability to other elements of democracy or to state capacity (often viewed as a facilitating condition of democracy).

This explanation is put forth in a stipulative fashion, based on extant studies, and is consistent with the evidence presented here. However, the mechanisms are not directly measured and tested. Future research should aim to get further inside the box so as to show the micro-level connections between economic development and improved prospects for democracy.

VIII. References

- Acemoglu, Daron, Simon Johnson, James A. Robinson, Pierre Yared. 2008. "Income and Democracy." *American Economic Review* 98(3): 808–842.
- Acemoglu, Daron, Simon Johnson, James A. Robinson, Pierre Yared. 2009. "Reevaluating the Modernization Hypothesis." *Journal of Monetary Economics* 56(8): 1043–1058.
- Aidt, Toke S., Peter S. Jensen. 2012. "From Open to Secret Ballot: Vote Buying and Modernization." Working paper, Department of Economics, University of Cambridge.
- Alexander, Marcus, Matthew Harding, Carlos Lamarche. 2011. "Quantile Regression for Time-Series-Cross-Section Data." *International Journal of Statistics and Management System* 6(1–2): 47–72.
- Angrist, Joshua D., Jorn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press.
- Beaulieu, Emily. 2014. *Electoral Protest and Democracy in the Developing World*. New York: Cambridge University Press.
- Benhabib, Jess, Alejandro Corvalan, Mark M. Spiegel. 2011. *Reestablishing the Income-Democracy Nexus*. Federal Reserve Bank of San Francisco Working Paper 2011-09.
- Birch, Sarah. 2011. *Electoral Malpractice*. Oxford: Oxford University Press.
- Blundell, Richard, Stephen Bond. 1998. "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models." *Journal of Econometrics* 87(1): 115-143.
- Boix, Carles. 2003. *Democracy and Redistribution*. Cambridge: Cambridge University Press.
- Boix, Carles, Susan C. Stokes. 2003. "Endogenous Democratization." *World Politics* 55(4): 517-49.
- Boix, Carles, Michael K. Miller, Sebastian Rosato. 2013. "A Complete Data Set of Political Regimes, 1800-2007." *Comparative Political Studies* 46(12): 1523-1554.
- Bolt, J., J. L. van Zanden. 2014. "The Maddison Project: collaborative research on historical national accounts." *The Economic History Review* 67(3): 627–651.

- Brinks, Daniel, Michael Coppedge. 2006. "Diffusion Is No Illusion: Neighbor Emulation in the Third Wave of Democracy." *Comparative Political Studies* 39(4): 463-89.
- Bunce, Valerie, Sharon Wolchik. 2011. *Defeating Authoritarian Leaders in Postcommunist Countries*. New York: Cambridge University Press.
- Che, Yi, Yi Lub, Zhigang Tao, Peng Wang. 2013. "The Impact of Income on Democracy Revisited." *Journal of Comparative Economics* 41(1): 159–169.
- Cheibub, Jose Antonio, Jennifer Gandhi, James Raymond Vreeland. 2010. "Democracy and Dictatorship Revisited." *Public Choice* 143(1-2): 67-101.
- Chong, Dennis. 1991. *Collective Action and the Civil Rights Movement*. Chicago: University of Chicago Press.
- Chu, Y.-H., Michael Bratton, Marta Lagos, S. Shastri, Marc Tessler. 2008. "Public Opinion and Democratic Legitimacy." *Journal of Democracy* 19(2): 74-87.
- Coppedge, Michael, John Gerring, with David Altman, Michael Bernhard, Steven Fish, Allen Hicken, Matthew Kroenig, Staffan I. Lindberg, Kelly McMann, Pamela Paxton, Holli A. Semetko, Svend-Erik Skaaning, Jeffrey Staton, and Jan Teorell. 2011. "Conceptualizing and Measuring Democracy: A New Approach." *Perspectives on Politics* 9(1): 247-67.
- Coppedge, Michael, John Gerring, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Adam Glynn, Allen Hicken, Carl Henrik Knutsen, Kelly McMann, Daniel Pemstein, Megan Reif, Svend-Erik Skaaning, Jeffrey Staton, Eitan Tzelgov, Yi-ting Wang, Brigitte Zimmerman. 2015a. *Varieties of Democracy: Methodology v4*. Varieties of Democracy (V-Dem) Project.
- Coppedge, Michael, John Gerring, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Adam Glynn, Allen Hicken, Carl Henrik Knutsen, Kelly McMann, Daniel Pemstein, Megan Reif, Svend-Erik Skaaning, Jeffrey Staton, Eitan Tzelgov, Yi-ting Wang, Brigitte Zimmerman. 2015b. *Varieties of Democracy: Codebook v4*. Varieties of Democracy (V-Dem) Project.

- Cunningham, Frank. 2002. *Theories of Democracy*. London: Routledge.
- Dahl, Robert A. 1971. *Polyarchy: Participation and Opposition*. New Haven: Yale University Press.
- Diamond, Larry, Leonardo Morlino. 2004. "Quality of democracy: an overview." *Journal of Democracy*, 15(4): 20-31.
- Epstein, David L., Robert Bates, Jack Goldstone, Ida Kristensen, Sharyn O'Halloran. 2006. "Democratic Transitions." *American Journal of Political Science* 50(3): 551-69.
- Fearon, James. 2011. "Self-Enforcing Democracy." *Quarterly Journal of Economics* 126(4): 1661-1708.
- Freedom House. 2014. *Freedom in the World Survey*, <http://www.freedomhouse.org> (last visited 4/11 2016).
- Gandhi, Jennifer, Ellen Lust-Okar. 2009. "Elections under Authoritarianism." *Annual Review of Political Science* 12: 403-422.
- Gassebner, Martin, Michael J. Lamla, James R. Vreeland. 2011. "Extreme Bounds of Democracy." *Journal of Conflict Resolution* 57(2): 171-195.
- Glaeser, Edward L., Giacomo Ponzetto, Andrei Shleifer. 2007. "Why Does Democracy Need Education?" *Journal of Economic Growth* 12(2): 77-99.
- Heid, Benedikt, Julian Langer, Mario Larch. 2012. "Income and democracy: Evidence from system GMM estimates." *Economics Letters* 116: 166-169.
- Held, David. 2006. *Models of Democracy*. Cambridge: Polity Press
- Honaker, James, Gary King. 2010. "What to Do about Missing Values in Time-Series Cross-Section Data." *American Journal of Political Science* 54(2): 561-581.
- Inglehart, Ronald. 2003. "How Solid is Mass Support for Democracy—And How Do We Measure It?" *PS: Political Science and Politics* 36(1): 51-57.
- Inglehart, Ronald, Christian Welzel. 2005. *Modernization, Cultural Change, and Democracy*. Cambridge: Cambridge University Press.
- Jensen, Peter, Mogens Justesen. 2014. "Poverty and Vote Buying: Survey-based Evidence from Africa." *Electoral Studies* 33(1): 220-232.

- Kennedy, Ryan. 2010. "The Contradiction of Modernization: A Conditional Model of Endogenous Democratization". *Journal of Politics* 72(3): 785-98.
- Kuran, Timur. 1989. "Sparks and Prairie Fires." *Public Choice* 61(1): 41-74.
- Lehoucq, Fabrice. 2003. "Electoral Fraud: Causes, Types, and Consequences." *Annual Review of Political Science* 6: 233-56
- Lipset, Seymour Martin. 1959. "Some Social Requisites of Democracy: Economic Development and Political Legitimacy." *American Political Science Review* 53(1): 69-105.
- Lohman, Susanne. 1994. "The Dynamics of Informal Cascades." *World Politics* 47(1): 42-101.
- Marshall, Monty, Ted Gurr & Keith Jagers. 2014. *Polity IV project: Dataset users' manual*.
- Medina, Luis Fernando. 2007. *A Unified Theory of Collective Action and Social Change*. Ann Arbor: University of Michigan Press.
- Miller, Michael. 2015. "Democratic Pieces: Autocratic Elections and Democratic Development since 1815." *British Journal of Political Science* 45(3): 501-30.
- Moore, Barrington. 1966. *Social Origins of Dictatorship and Democracy*. Boston: Beacon Press.
- Moral-Benito, Enrique, Cristian Bartolucci. 2012. *Income and Democracy: Revisiting the Evidence*. Banco de Espana Working Paper No. 1115
- Munck, Gerardo. 2016. "What is Democracy? A Reconceptualization of the Quality of Democracy." *Democratization* 23(1): 1-26.
- Nickell, Stephen. 1982. "The Determinants of Occupational Success in Britain." *Review of Economic Studies* 49(1): 43-53.
- Norris, Pippa. 2011. *Democratic Deficit*. New York: University of Cambridge Press.
- O'Donnell, Guillermo. 1973. *Modernization and Bureaucratic-Authoritarianism: Studies in South American Politics*. Berkeley: Institute of International Studies.
- Pemstein, Daniel, Stephen A. Meserve, James Melton. 2010. "Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type." *Political Analysis* 18(4): 426-449.
- Przeworski, Adam. 2005. "Democracy as an Equilibrium." *Public Choice* 123(3-4): 253-273.

- Przeworski, Adam, Fernando Limongi. 1997. "Modernization: Theories and Facts." *World Politics* 49(1): 155-83.
- Przeworski, Adam, Michael Alvarez, Jose Antonio Cheibub, Fernando Limongi. 2000. *Democracy and Development: Political Institutions and Material Well-Being in the World, 1950-1990*. New York: Cambridge University Press.
- Reuveny Raphael, Li Quan. 2003. "The Joint Democracy-Dyadic Conflict Nexus." *International Studies Quarterly* 47(3): 325–346.
- Roodman, David. 2009. "A Note on the Theme of too many Instruments." *Oxford Bulletin of Economics and Statistics* 71(1): 135-158.
- Ross, Michael L. 2001. "Does Oil Hinder Democracy?" *World Politics* 53(3): 325-361.
- Rowley, Charles, Robert D. Tollison, Gordon Tullock. 1988. *The Political Economy of Rent-Seeking*. Springer.
- Rueschemeyer, Dietrich, Evelyne Huber Stephens, John D. Stephens. 1992. *Capitalist Development and Democracy*. Chicago: University of Chicago Press.
- Schedler, Andreas. 2002. "The Menu of Manipulation." *Journal of Democracy* 13(2): 36-50.
- Schedler, Andreas. 2013. *The Politics of Uncertainty: Sustaining and Subverting Electoral Authoritarianism*. Oxford: Oxford University Press.
- Schelling, Thomas. 1960. *The Strategy of Conflict*. Cambridge: Harvard University Press.
- Schumpeter, Joseph A. 1942/1950. *Capitalism, Socialism and Democracy*. New York: Harper & Bros.
- Simpser, Alberto. 2013. *Why Governments and Parties Manipulate Elections: Theory, Practice, and Implications*. Cambridge: Cambridge University Press.
- Skaaning, Svend-Erik, John Gerring, Henrikas Bartusevičius. 2015. "A Lexical Index of Electoral Democracy." *Comparative Political Studies* 48(12): 1491-1525.
- Stokes, Susan C., Thad Dunning, Marcelo Nazareno, Valeria Brusco. 2013. *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics*. New York: Cambridge University Press.

- Teorell, Jan. 2010. *Determinants of Democratization: Explaining Regime Change in the World, 1972-2006*. Cambridge: Cambridge University Press.
- Thompson, Mark R., Philipp Kuntz. 2005. "More than Just the Final Straw: Stolen Elections as Revolutionary Triggers." Presented at the Conference on Authoritarian Regimes: Conditions for Stability and Change, Swedish Institute, Istanbul, Turkey, May 29-31.
- Treisman, Daniel. 2015. "Income, Democracy, and Leader Turnover." *American Journal of Political Science* 59(4): 927-42.
- Tucker, Joshua A. 2007. "Enough! Electoral Fraud, Collective Action Problems, and Post-Communist Colored Revolutions." *Perspectives on Politics* 5(3): 535-51.
- Weingast, Barry M. 1997. «The Political Foundations of Democracy and the Rule of Law.» *American Political Science Review* 91(2): 245-63.
- Weitz-Shapiro, Rebecca. 2013. *Curbing Clientelism in Argentina: Politics, Poverty, and Social Policy*. Cambridge: Cambridge University Press.

Appendix A: Data

Table A1: Variable Definitions

Democracy Indices

Polity2 (Polity IV). Measures the extent to which democratic or autocratic “authority patterns” are institutionalized in a given country. It takes into account how the executive is selected, the degree of checks on executive power, and the form of political competition (Marshall et al. 2014). *polity2*

UDS (Pemstein). A democracy index comprised of multiple indicators and aggregated through a Bayesian IRT measurement model (Pemstein et al. 2010). *uds_mean*

Political Rights (FH). An annual comparative assessment of political rights based on a 1 to 7 scale (Freedom House 2014). *fb_pr*

Civil Liberties (FH). An annual comparative assessment of civil liberties based on a 1 to 7 scale (Freedom House 2014). *fb_cl*

Liberal Component (V-Dem). The liberal principle of democracy emphasizes the importance of protecting individual and minority rights against the tyranny of the state and the tyranny of the majority. The liberal model takes a “negative” view of political power insofar as it judges the quality of democracy by the limits placed on government. This is achieved by constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks and balances that, together, limit the exercise of executive power. This index is formed by averaging the following indices: equality before the law and individual liberties (*v2xcl_rol*), judicial constraints on the executive (*v2x_jucon*), and legislative constraints on the executive (*v2xlg_legcon*). *v2x_liberal*

Participatory Component (V-Dem). The participatory principle of democracy emphasizes active participation by citizens in all political processes, electoral and non-electoral. It is motivated by uneasiness about a bedrock practice of electoral democracy: delegating authority to representatives. Thus, direct rule by citizens is preferred, wherever practicable. This model of democracy thus takes suffrage for granted, emphasizing engagement in civil society organizations, direct democracy, and subnational elected bodies. This index is formed by averaging the following indices: civil society participation (*v2x_cspart*), direct popular vote (*v2xdd_dd*), elected local government power (*v2xel_locelec*), and elected regional government power (*v2xel_regelec*). *v2x_partip*

Deliberative Component (V-Dem). The deliberative principle of democracy focuses on the process by which decisions are reached in a polity. A deliberative process is one in which public reasoning focused on the common good motivates political decisions—as contrasted with emotional appeals, solidary attachments, parochial interests, or coercion. According to this principle, democracy requires more than an aggregation of existing preferences. There should also be respectful dialogue at all levels—from preference formation to final decision—among informed and competent participants who are open to persuasion. To measure these features of a polity we try to determine the extent to which political elites give public justifications for their positions on matters of public policy, justify their positions in terms of the public good, acknowledge and respect counter-arguments; and how wide the range of consultation is at elite levels. The index is formed by point estimates drawn from a Bayesian factor analysis model including the following indicators: reasoned justification (*v2dlreason*), common good justification (*v2dlcommon*), respect for counterarguments (*v2dlcountr*), range of consultation (*v2dlconslt*), and engaged society (*v2dlengage*). *v2xdl_delib*

Egalitarian Component (V-Dem). The egalitarian principle of democracy addresses the distribution of political power across social groups, i.e., groups defined by class, sex, religion, and ethnicity. This perspective on democracy emphasizes that a formal guarantee of political rights and civil liberties are not always sufficient for political equality. Ideally, all social groups should have approximately equal participation, representation, agenda-setting power, protection under the law, and influence over policymaking and policy implementation. If such equality does not exist, the state ought to seek to redistribute socio-economic resources, education, and health so as to enhance political equality. The index is formed by point estimates drawn from a Bayesian factor analysis model including indicators of power distribution according to socioeconomic position (*v2pepwrsec*), power distribution according to social group (*v2pepwrsoc*), social group equality in respect for civil liberties (*v2clsocgrp*), equal access to education (*v2peedueq*), equal access to health (*v2pehealth*), power distribution according to gender (*v2pepwrngen*), share of budget allocated to public/common goods (*v2dlencmps*), and the share of welfare programs that provide universal rather than means-tested benefits (*v2dlunivl*). *v2x_egal*

Individual Liberty/Rule of Law (V-Dem). To what extent are laws transparent and rigorously enforced and public administration impartial, and to what extent do citizens enjoy access to justice, secure property rights,

freedom from forced labor, freedom of movement, physical integrity rights, and freedom of religion? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for rigorous and impartial public administration (v2clrspct), transparent laws with predictable enforcement (v2cltrnslw), access to justice for men/women (v2clacjstm, v2clacjstw), property rights for men/women (v2clprptym, v2clprptyw), freedom from torture (v2cltort), freedom from political killings (v2clkill), from forced labor for men/women (v2clslavem v2clslavf), freedom of religion (v2clreli), freedom of foreign movement (v2clfmov), and freedom of domestic movement for men/women (v2cldmovm, v2cldmovw). *v2xcl_rol*

Judicial Constraints (V-Dem). To what extent does the executive respect the constitution and comply with court rulings, and to what extent is the judiciary able to act in an independent fashion? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for executive respects constitution (v2exrescon), compliance with judiciary (v2jucomp), compliance with high court (v2juhccomp), high court independence (v2juhcind), and lower court independence (v2juncind). *v2x_jucon*

Legislative Constraints (V-Dem). To what extent is the legislature and government agencies (e.g., comptroller general, general prosecutor, or ombudsman) capable of questioning, investigating, and exercising oversight over the executive? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for legislature questions officials in practice (v2lgqstexp), executive oversight (v2lgotovst), legislature investigates in practice (v2lginvstp), and legislature opposition parties (v2lgoppart). *v2xlg_legcon*

Free Expression (V-Dem). To what extent does government respect press & media freedom, the freedom of ordinary people to discuss political matters at home and in the public sphere, as well as the freedom of academic and cultural expression? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for print/broadcast censorship effort (v2mecenefm), internet censorship effort (v2mecenefi), harassment of journalists (v2meharjrn), media self-censorship (v2meslfcen), freedom of discussion for men/women (v2cldiscm, v2cldiscw) and freedom of academic and cultural expression (v2clacfree). *v2x_freexp*

Alternative Sources of Information (V-Dem). To what extent is the media (a) un-biased in their coverage (or lack of coverage) of the opposition, (b) allowed to be critical of the regime, and (c) representative of a wide array of political perspectives? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for media bias (v2mebias), print/broadcast media critical (v2mecrit), and print/broadcast media perspectives (v2merange). *v2xme_altinf*

Free Association (V-Dem). To what extent are parties, including opposition parties, allowed to form and to participate in elections, and to what extent are civil society organizations able to form and to operate freely? The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for party ban (v2psparban), barriers to parties (v2psbars), opposition parties autonomy (v2psoppaut), elections multiparty (v2elmulpar), CSO entry and exit (v2cseeorgs) and CSO repression (v2csreprss). Since the multiparty elections indicator is only observed in election years, its values have first been repeated within election regime periods (as defined by v2x_elecrg). *v2x_frassoc_thick*

Executive Selection (V-Dem). Is the chief executive appointed through popular elections (either directly or indirectly)? There are six different chains of appointment/selection to take into account in constructing this index, all of which are scaled to vary from 0 to 1. First, whether the head of state is directly elected ($a=1$) or not ($a=0$). Second, the extent to which the legislature is popularly elected (b), measured as the proportion of legislators elected (if legislature is unicameral), or the weighted average of the proportion elected for each house, with the weight defined by which house is dominant (if legislature is bicameral). Third, whether the head of state is appointed by the legislature, or the approval of the legislature is necessary for the appointment of the head of state ($c1=1$, otherwise 0). Fourth, whether the head of government is appointed by the legislature, or the approval of the legislature is necessary for the appointment of the head of government ($c2=1$, otherwise 0). Fifth, whether the head of government is appointed by the head of state ($d=1$) or not ($d=0$). Sixth, whether the head of government is directly elected ($e=1$) or not ($e=0$). Define $hosw$ as the weight for the head of state. If the head of state is also head of government (v2exhoshog=1), $hosw=1$. If the head of state has more power than the head of government over the appointment and dismissal of cabinet ministers, then $hosw=1$; if the reverse is true, $hosw=0$. If they share equal power, $hosw=.5$. Define the weight for the head of government as $hogw=1-hosw$. *v2x_accex*

Adult Suffrage (V-Dem). What share of adult citizens (as defined by statute) has the legal right to vote in national elections? This question does not take into consideration restrictions based on age, residence, having been convicted for crime, or being legally incompetent. It covers legal (de jure) restrictions, not restrictions that may be operative in practice (de facto). The scores reflect de jure provisions of suffrage extension in percentage of the adult population as of January 1 in a particular year. The adult population (as defined by statute) is defined by citizens in the case of independent countries or the people living in the territorial entity in the case of colonies. Universal suffrage is coded as 100%. Universal male suffrage only is coded as 50%. Years before electoral provisions are introduced are scored 0%. The scores do not reflect whether an electoral regime was interrupted or not. Only if new constitutions,

electoral laws, or the like explicitly introduce new regulations of suffrage, the scores were adjusted accordingly if the changes suggested doing so. If qualifying criteria other than gender apply (such as property, tax payments, income, literacy, region, race, ethnicity, religion, and/or 'economic independence'), estimates have been calculated by combining information on the restrictions with different kinds of statistical information (on population size, age distribution, wealth distribution, literacy rates, size of ethnic groups, etc.), secondary country-specific sources, and – in the case of very poor information – the conditions in similar countries or colonies. *v2x_suffr*

BMR (Boix et al.). Dichotomous democracy measure based on contestation and participation. Countries coded democratic have (1) political leaders that are chosen through free and fair elections and (2) a minimal level of suffrage (Boix, Miller & Rosato, 2013). *e_mibmr*

Lexical (Skaaning et al.). A lexical index of electoral democracy based on six conditions and seven levels: (L0) no elections; (L1) no-party or one-party elections; (L2) multiparty elections for legislature; (L3) multiparty elections for legislature and executive; (L4) minimally competitive, multiparty elections for legislature and executive; (L5) minimally competitive, multiparty elections with full male or female suffrage for legislature and executive; and (L6) minimally competitive, multiparty elections with universal suffrage for legislature and executive (Skaaning et al. 2015). *lexical_scale*

Competitive Elections (Skaaning et al.). An index of electoral competition coded 1 in any situation where the chief executive offices and seats in the effective legislative body are filled by multi-party elections characterized by uncertain outcomes – meaning that the elections are, in principle, sufficiently free to enable the opposition to gain government power (Skaaning et al. 2015). *competitive_elections*

Electoral Contestation (V-Dem). An index of electoral contestation, which combines, through multiplication, measures of Freedom of Association (*v2x_frassoc_thick*), Clean Elections (*v2xel_frefair*), and Executive Selection (*v2x_accex*). *v2x_contest*

Clean Elections (V-Dem). To what extent are elections free and fair? Free and fair connotes an absence of registration fraud, systematic irregularities, government intimidation of the opposition, vote buying, and election violence. The index is formed by taking the point estimates from a Bayesian factor analysis model of the indicators for EMB Autonomy (*v2elembaut*), EMB Capacity (*v2elembcap*), Election Voter Registry (*v2elrgstry*), Election Vote Buying (*v2elvotbuy*), Election Other Voting Irregularities (*v2elirreg*), Election Government Intimidation (*v2elintim*), Election Other Electoral Violence (*v2elpeace*), and Election Free and Fair (*v2elfrfair*). Since the bulk of these indicators are only observed in election years, the index scores have then been repeated within election regime periods (as defined by *v2x_elecreg*). *v2xel_frefair*

Components of Clean Elections index

Government Intimidation (V-Dem). In this national election, were opposition candidates/parties/campaign workers subjected to repression, intimidation, violence, or harassment by the government, the ruling party, or their agents? Responses: (0) Yes: the repression and intimidation by the government or its agents was so strong that the entire period was quiet; (1) Yes, frequent: there was systematic, frequent and violent harassment and intimidation of the opposition by the government or its agents during the election period; (2) Yes, some: there was periodic, not systematic, but possibly centrally coordinated – harassment and intimidation of the opposition by the government or its agents; (3) Restrained: there were sporadic instances of violent harassment and intimidation by the government or its agents, in at least one part of the country, and directed at only one or two local branches of opposition groups; (4) None: there was no harassment or intimidation of opposition by the government or its agents, during the election campaign period and polling day. *v2x_elintim*

Other Violence (V-Dem). In this national election, was the campaign period, election day, and post-election process free from other types (not by the government, the ruling party, or their agents) of violence related to the conduct of the election and the campaigns (but not conducted by the government and its agents)? Responses: (0) No: there was widespread violence between civilians occurring throughout the election period, or in an intense period of more than a week and in large swaths of the country; it resulted in a large number of deaths or displaced refugees; (1) Not really: there were significant levels of violence but not throughout the election period or beyond limited parts of the country; a few people may have died as a result, and some people may have been forced to move temporarily; (2) Somewhat: there were some outbursts of limited violence for a day or two, and only in a small part of the country; the number of injured and otherwise affected was relatively small; (3) Almost: there were only a few instances of isolated violent acts, involving only a few people; no one died and very few were injured; (4) Peaceful: no election-related violence between civilians occurred. *v2x_elpeace*

Vote Buying (V-Dem). In this national election, was there evidence of vote and/or turnout buying? Responses: (0) Yes: there was systematic, widespread, and almost nationwide vote/turnout buying by almost all parties and candidates; (1) Yes, some: there were non-systematic but rather common vote-buying efforts, even if only in some

parts of the country or by one or a few parties; (2) Restricted: money and/or personal gifts were distributed by parties or candidates but these offerings were more about meeting an 'entry-ticket' expectation and less about actual vote choice or turnout, even if a smaller number of individuals may also be persuaded; (3) Almost none: there was limited use of money and personal gifts, or these attempts were limited to a few small areas of the country; in all, they probably affected less than a few percent of voters; (4) None: there was no evidence of vote/turnout buying. *v2x_elvotbuy*

Other Irregularities (V-Dem). In this national election, was there evidence of other *intentional* irregularities by incumbent and/or opposition parties, and/or vote fraud? Responses: (0) Yes: there were systematic and almost nationwide other irregularities; (1) Yes, some: there were non-systematic, but rather common other irregularities, even if only in some parts of the country; (2) Sporadic: there were a limited number of sporadic other irregularities, and it is not clear whether they were intentional or disfavored particular groups; (3) Almost none: there were only a limited number of irregularities, and many were probably unintentional or did not disfavor particular groups' access to participation; (4) None: there was no evidence of intentional other irregularities; unintentional irregularities resulting from human error and/or natural conditions may still have occurred. *v2x_elirreg*

Voter Registry (V-Dem). In this national election, was there a reasonably accurate voter registry in place and was it used? Responses: (0) No: there was no registry, or the registry was not used; (1) No: there was a registry but it was fundamentally flawed (meaning 20% or more of eligible voters could have been disenfranchised or the outcome could have been affected significantly by double-voting and impersonation); (2) Uncertain: there was a registry but it is unclear whether potential flaws in the registry had much impact on electoral outcomes; (3) Yes, somewhat: the registry was imperfect but less than 10% of eligible voters may have been disenfranchised, and double-voting and impersonation could not have affected the results significantly; (4) Yes: the voter registry was reasonably accurate (less than 1% of voters were affected by any flaws) and it was applied in a reasonable fashion. *v2x_elrgstry*

EMB Capacity (V-Dem). Does the Election Management Body (EMB) have sufficient staff and resources to administer a well-run national election? Responses: (0) No: there are glaring deficits in staff, financial, or other resources affecting the organization across the territory; (1) Not really: deficits are not glaring but they nonetheless seriously compromised the organization of administratively well-run elections in many parts of the country; (2) Ambiguous: there might be serious deficiencies compromising the organization of the election but it could also be a product of human errors and co-occurrence or other factors outside the control of the EMB; (3) Mostly: there are partial deficits in resources but these are neither serious nor widespread; (4) Yes: the EMB has adequate staff and other resources to administer a well-run election. *v2elemcap*

EMB Autonomy (V-Dem). Does the Election Management Body (EMB) have autonomy from government to apply election laws and administrative rules impartially in national elections? Responses: (0) No: the EMB is controlled by the incumbent government, the military, or other *de facto* ruling body; (1) Somewhat: the EMB has some autonomy on some issues but on critical issues that influence the outcome of elections, the EMB is partial to the *de facto* ruling body; (2) Ambiguous: the EMB has some autonomy but is also partial, and it is unclear to what extent this influences the outcome of the election; (3) Almost: the EMB has autonomy and acts impartially almost all the time. It may be influenced by the *de facto* ruling body in some minor ways that do not influence the outcome of elections; (4) Yes: the EMB is autonomous and impartially applies elections laws and administrative rules. *v2elembaut*

Free & Fair (V-Dem). Taking all aspects of the pre-election period, election day, and the post-election process into account, would you consider this national election to be free and fair? Responses: (0) No, not at all: the elections were fundamentally flawed and the official results had little if anything to do with the 'will of the people' (i.e., who became president; or who won the legislative majority); (1) Not really: while the elections allowed for some competition, the irregularities in the end affected the outcome of the election (i.e., who became president; or who won the legislative majority); (2) Ambiguous: there was substantial competition and freedom of participation but there were also significant irregularities; it is hard to determine whether the irregularities affected the outcome or not; (3) Yes, somewhat: there were deficiencies and some degree of fraud and irregularities but these did not in the end affect the outcome; (4) Yes: there was some amount of human error and logistical restrictions but these were largely unintentional and without significant consequences. *v2x_elfrfair*

Independent variables

GDPpc(ln). Gross domestic product per capita, transformed by the natural logarithm, missing data interpolated within a time-series. *Source:* Maddison Project (Bolt & van Zanden 2014). *e_migdppln_ipo*

Corruption (V-Dem). Includes indicators of corruption in the executive, the legislature, the judiciary, and the public sector at-large, aggregated with Bayesian factor analysis and then constructed as a historical stock with a 10% annual depreciation rate. *v2x_icorr*

Land Inequality. A measure of land inequality, which combines the urbanization rate (Vanhanen 2003) with the

percentage of cultivated land area comprised by family farms (also Vanhanen 2003), according to the formula: $(100 - [\text{urbanization rate}] * (100 - [\text{family farms}]))$. *land_inequality*

Diffusion variables. Diffusion of a variable for country *X* measured as a sum of that variable for all countries except country *X*, weighted by the distance (in kilometers) between the capital of each country and that of country *X*. *[variable name]_geo*

Internal Conflict. Coded 1 if the country suffered in an internal armed conflict in a given year, 0 otherwise. The original source codebook (Brecke 2001) states that no war is coded as 0 and war is coded as 1. However, the data contains only 1's along with missing data (no 0's). Following the authors' instructions (personal communication), we re-code missing observations as non-conflict (0) for countries where at least one year in the original times series (which runs from 1500 until present) was coded as 1. *Sources:* Clio Infra (clio-infra.eu), drawing on Brecke (2001), compiled by V-Dem. *conflict_int*

External Conflict. Coded 1 if the country participated in an international armed conflict in a given year, 0 otherwise. The original source codebook (Brecke 2001) states that no war is coded as 0 and war is coded as 1. However, the data contains only 1's along with missing data (no 0's). Following the authors' instructions (personal communication), we re-code missing observations as non-conflict (0) for countries where at least one year in the original times series (which runs from 1500 until present) was coded as 1. *Sources:* Clio Infra (clio-infra.eu), drawing on Brecke (2001), compiled by V-Dem. *conflict_ext*

Natural Resources. Dependence on natural resources, measured by revenues from oil, gas, coal, and metals as a percentage of GDP (Miller 2015). *e_resdep2*

Urbanization. Urban population divided by total population. Data on urban population and total population from Clio Infra (clio-infra.eu); missing data within a time-series interpolated using a linear model. *urban_clio_ipo*

Table A2: Descriptive Statistics

| | Obs. | Mean | SD | Min | Max |
|--|-------------|-------------|-----------|------------|------------|
| DEMOCRACY INDICATORS | | | | | |
| Polity2 (Polity IV) | 15,903 | 0.477 | 0.352 | 0 | 1 |
| UDS (Pemstein) | 8,802 | 0.502 | 0.232 | 0 | 1 |
| Political Rights (FH) | 6,986 | 0.537 | 0.374 | 0 | 1 |
| Civil Liberties (FH) | 6,986 | 0.543 | 0.326 | 0 | 1 |
| Liberal Component (V-Dem) | 16,992 | 0.438 | 0.280 | 0.000 | 0.984 |
| Participatory Component (V-Dem) | 20,009 | 0.240 | 0.197 | 0.000 | 0.828 |
| Deliberative Component (V-Dem) | 16,437 | 0.491 | 0.298 | 0.019 | 0.994 |
| Egalitarian Component (V-Dem) | 16,509 | 0.490 | 0.295 | 0.021 | 0.993 |
| Individual Liberty/Rule of Law (V-Dem) | 16,515 | 0.491 | 0.290 | 0.003 | 0.993 |
| Judicial Constraints (V-Dem) | 16,333 | 0.493 | 0.290 | 0.010 | 0.986 |
| Legislative Constraints (V-Dem) | 12,114 | 0.499 | 0.300 | 0.023 | 0.990 |
| Free Expression (V-Dem) | 15,969 | 0.492 | 0.296 | 0.018 | 0.993 |
| Alternative Sources of Information (V-Dem) | 15,986 | 0.493 | 0.305 | 0.033 | 0.989 |
| Free Association (V-Dem) | 16,172 | 0.495 | 0.310 | 0.043 | 0.976 |
| Executive Selection (V-Dem) | 16,358 | 0.518 | 0.483 | 0 | 1 |
| Adult Suffrage (V-Dem) | 16,474 | 0.639 | 0.436 | 0 | 1 |
| BMR (Boix et al.) | 15,739 | 0.317 | 0.465 | 0 | 1 |
| Lexical (Skaaning et al.) | 18,142 | 0.457 | 0.391 | 0 | 1 |
| Competitive Elections (Skaaning) | 18,142 | 0.347 | 0.476 | 0 | 1 |
| Electoral Contestation (V-Dem) | 16,018 | 0.209 | 0.299 | 0 | 0.957 |
| Clean Elections (V-Dem) | 16,317 | 0.309 | 0.333 | 0 | 0.989 |
| Government Intimidation (V-Dem) | 16,325 | 0.202 | 0.900 | -2.293 | 3.276 |
| Other Violence (V-Dem) | 16,325 | 0.392 | 0.756 | -2.163 | 2.615 |
| Vote Buying (V-Dem) | 16,325 | 0.298 | 0.854 | -1.900 | 2.776 |
| Other Irregularities (V-Dem) | 16,325 | 0.189 | 0.864 | -2.079 | 2.518 |
| Voter Registry (V-Dem) | 16,325 | 0.257 | 0.831 | -2.233 | 2.724 |
| EMB Capacity (V-Dem) | 16,204 | 0.136 | 1.078 | -1.742 | 3.210 |
| EMB Autonomy (V-Dem) | 16,210 | -0.090 | 1.138 | -1.997 | 2.864 |
| Free & Fair (V-Dem) | 16,317 | 0.167 | 0.978 | -2.058 | 2.589 |
| CAUSAL FACTORS | | | | | |
| GDPpc (ln) | 17,932 | 7.510 | 1.011 | 5.315 | 10.667 |
| Corruption index | 16,403 | 0.518 | 0.284 | 0.014 | 0.986 |
| Land Inequality | 9,764 | 5,040.182 | 2,474.755 | 0 | 9,603 |
| Internal Conflict | 30,753 | 0.064 | 0.245 | 0 | 1 |
| External Conflict | 30,753 | 0.098 | 0.297 | 0 | 1 |
| Natural Resources | 13,541 | 3.560 | 9.714 | 0 | 100 |
| Urbanization rate | 39,879 | 0.234 | 0.233 | 0.002 | 1 |
| Diffusion variables: | | | | | |
| Polity2 (Polity IV) | 40,660 | 0.009 | 0.011 | 0.000 | 0.100 |
| UDS (Pemstein) | 11,970 | 0.020 | 0.024 | 0.002 | 0.260 |
| Political Rights (FH) | 7,600 | 0.029 | 0.037 | 0.005 | 0.312 |
| Civil Liberties (FH) | 7,600 | 0.030 | 0.036 | 0.006 | 0.313 |
| Liberal Component (V-Dem) | 21,850 | 0.017 | 0.011 | 0.003 | 0.078 |
| Participatory Component (V-Dem) | 21,850 | 0.011 | 0.008 | 0.001 | 0.067 |
| Deliberative Component (V-Dem) | 21,850 | 0.018 | 0.013 | 0.003 | 0.107 |
| Egalitarian Component (V-Dem) | 21,850 | 0.018 | 0.013 | 0.002 | 0.081 |
| Individual Liberty/Rule of Law (V-Dem) | 21,850 | 0.018 | 0.012 | 0.003 | 0.084 |
| Judicial Constraints (V-Dem) | 21,850 | 0.018 | 0.011 | 0.004 | 0.075 |
| Legislative Constraints (V-Dem) | 21,850 | 0.014 | 0.011 | 0.002 | 0.096 |
| Free Expression (V-Dem) | 21,850 | 0.018 | 0.012 | 0.003 | 0.089 |
| Alternative Sources of Information (V-Dem) | 21,850 | 0.017 | 0.012 | 0.003 | 0.109 |
| Free Association (V-Dem) | 21,850 | 0.018 | 0.013 | 0.002 | 0.105 |
| Executive Selection (V-Dem) | 21,850 | 0.019 | 0.016 | 0.002 | 0.132 |
| Adult Suffrage (V-Dem) | 21,850 | 0.023 | 0.020 | 0.001 | 0.137 |
| BMR (Boix et al.) | 39,472 | 0.007 | 0.017 | 0.000 | 0.311 |
| Lexical (Skaaning et al.) | 40,660 | 0.011 | 0.022 | 0.000 | 0.315 |
| Competitive Elections (Skaaning) | 40,630 | 0.009 | 0.020 | 0.000 | 0.313 |

| | | | | | |
|--------------------------------|--------|-------|-------|-------|-------|
| Electoral Contestation (V-Dem) | 21,850 | 0.008 | 0.008 | 0.000 | 0.053 |
| Clean Elections (V-Dem) | 21,850 | 0.012 | 0.010 | 0.000 | 0.065 |

Democracy indices are normalized to 0-1, where 1=most democratic.

Appendix B: Robustness Tests

Table B1: Liberal Component (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|--------------------|---------------------|---------------------|---------------------|--------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| GDPpc (ln) | 0.003 (0.002) | 0.074*** (0.023) | 0.048** (0.024) | 0.004 (0.004) | 0.098*** (0.027) | | | 0.018* (0.011) | 0.037*** (0.010) | 0.005** (0.002) |
| GDPpc (ln) | | | | | | | | | | |
| L20 | | | | | | 0.082** (0.036) | | | | |
| Lagged Y | 0.942*** (0.005) | | | 0.935*** (0.009) | | | 0.676*** (0.025) | 0.780*** (0.046) | 0.804*** (0.021) | |
| Trend | | | 0.002*** (0.000) | | | | | | | |
| Corruption | | | | -0.014* (0.008) | -0.576*** (0.111) | | | | | |
| Land | | | | -0.000 (0.000) | -0.000*** (0.000) | | | | | |
| Inequality | | | | 0.217 (0.387) | 4.742 (2.989) | | | | | |
| Diffusion | | | | -0.000 (0.003) | -0.019 (0.015) | | | | | |
| Internal | | | | -0.001 (0.003) | -0.033** (0.016) | | | | | |
| Conflict | | | | 0.000 (0.000) | -0.001 (0.001) | | | | | |
| External | | | | | | | | | | |
| Conflict | | | | | | | | | | |
| Natural | | | | | | | | | | |
| Resources | | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 154 | 154 | 154 | 132 | 132 | 154 | 154 | 154 | 205 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 | |
| <i>Obs</i> | 11571 | 11664 | 11664 | 6752 | 6752 | 10617 | 2288 | 2288 | 21143 | |
| <i>R2 (within)</i> | 0.920 | 0.288 | 0.187 | 0.900 | 0.384 | 0.301 | 0.616 | | 0.905 | |

Outcome: Liberal Component index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B2: Participatory Component (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|----------------------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | Y>0 | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| GDPpc | -0.000 | 0.011 | -0.001 | 0.001 | 0.058*** | | 0.000 | 0.001 | 0.018** | 0.000 |
| (ln) | (0.001) | (0.014) | (0.014) | (0.002) | (0.019) | | (0.001) | (0.006) | (0.008) | (0.001) |
| GDPpc | | | | | | 0.024 | | | | |
| (ln) L20 | | | | | | (0.021) | | | | |
| Lagged Y | 0.957*** | | | 0.947*** | | | 0.956*** | 0.739*** | 0.812*** | 0.890*** |
| | (0.004) | | | (0.007) | | | (0.004) | (0.024) | (0.048) | (0.013) |
| Trend | | | 0.003*** | | | | | | | |
| | | | (0.000) | | | | | | | |
| Corruption | | | | -0.008 | -0.246*** | | | | | |
| | | | | (0.005) | (0.069) | | | | | |
| Land | | | | -0.000* | -0.000*** | | | | | |
| Inequality | | | | (0.000) | (0.000) | | | | | |
| Diffusion | | | | 0.047 | 3.371 | | | | | |
| | | | | (0.234) | (2.760) | | | | | |
| Internal | | | | 0.002 | 0.000 | | | | | |
| Conflict | | | | (0.002) | (0.008) | | | | | |
| External | | | | -0.000 | -0.023* | | | | | |
| Conflict | | | | (0.002) | (0.013) | | | | | |
| Natural | | | | -0.000 | -0.001 | | | | | |
| Resources | | | | (0.000) | (0.000) | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Countries | 159 | 159 | 159 | 132 | 132 | 160 | 155 | 159 | 159 | 205 |
| Years | 111 | 112 | 112 | 99 | 99 | 115 | 111 | 22 | 22 | 114 |
| Obs | 11998 | 12095 | 12095 | 6751 | 6751 | 10997 | 11545 | 2370 | 2370 | 21143 |
| R2 (<i>within</i>) | 0.952 | 0.483 | 0.402 | 0.931 | 0.476 | 0.479 | 0.953 | 0.758 | | 0.959 |

Outcome: Participatory Component index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***, .01 (two-sided tests). *Sample:* Full (all available data), Y>0 (scores for Participatory Component that surpass 0), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B3: Deliberative Component (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|---------------------------|---------------------|--------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| GDPpc (ln) | 0.001 (0.003) | 0.056** (0.027) | 0.020 (0.029) | 0.006 (0.005) | 0.115*** (0.038) | | | 0.011 (0.012) | 0.034*** (0.010) | 0.003 (0.003) |
| GDPpc (ln) L20 | | | | | | 0.058 (0.045) | | | | |
| Lagged Y | 0.943*** (0.004) | | | 0.928*** (0.007) | | | 0.668*** (0.023) | 0.767*** (0.039) | 0.798*** (0.020) | |
| Trend | | | 0.004*** (0.001) | | | | | | | |
| Corruption | | | | -0.018* (0.010) | -0.688*** (0.142) | | | | | |
| Land Inequality | | | | -0.000* (0.000) | -0.000*** (0.000) | | | | | |
| Diffusion | | | | 0.170 (0.280) | 4.893** (2.263) | | | | | |
| Internal Conflict | | | | 0.004 (0.004) | -0.009 (0.021) | | | | | |
| External Conflict | | | | -0.000 (0.004) | -0.033 (0.022) | | | | | |
| Natural Resources | | | | -0.000 (0.000) | -0.001 (0.001) | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 | |
| <i>Obs</i> | 11449 | 11543 | 11543 | 6751 | 6751 | 10524 | 2262 | 2262 | 21143 | |
| <i>R2 (within)</i> | 0.930 | 0.361 | 0.274 | 0.901 | 0.396 | 0.363 | 0.654 | | 0.864 | |

Outcome: Deliberative Component index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B4: Egalitarian Component (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------------|---------------------|------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | -0.001 (0.001) | 0.012 (0.022) | 0.022 (0.020) | 0.000 (0.002) | 0.006 (0.028) | | -0.001 (0.007) | 0.007 (0.005) | 0.001 (0.003) |
| GDPpc (ln) L20 | | | | | | 0.006 (0.031) | | | |
| Lagged Y | 0.962*** (0.003) | | | 0.963*** (0.005) | | | 0.776*** (0.016) | 0.947*** (0.022) | 0.722*** (0.027) |
| Trend | | | 0.005*** (0.000) | | | | | | |
| Corruption | | | | -0.008* (0.004) | -0.388*** (0.070) | | | | |
| Land Inequality Diffusion | | | | -0.000 (0.000) | -0.000 (0.000) | | | | |
| Internal Conflict | | | | -0.246* (0.143) | 0.261 (2.234) | | | | |
| External Conflict | | | | 0.005** (0.002) | 0.002 (0.011) | | | | |
| Natural Resources | | | | 0.002 (0.002) | -0.019 (0.014) | | | | |
| Country FE | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.001 (0.001) | | | | |
| Year FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11447 | 11541 | 11541 | 6749 | 6750 | 10522 | 2261 | 2261 | 21143 |
| <i>R2 (within)</i> | 0.972 | 0.611 | 0.595 | 0.970 | 0.686 | 0.631 | 0.849 | | 0.878 |

Outcome: Egalitarian Component index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***, .01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B5: Individual Liberty/Rule of Law (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------------|---------------------|--------------------|---------------------|---------------------|----------------------|-------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | -0.001 (0.002) | 0.059** (0.025) | 0.036 (0.026) | 0.000 (0.003) | 0.099*** (0.029) | | 0.005 (0.010) | 0.021** (0.009) | 0.003 (0.002) |
| GDPpc (ln) L20 | | | | | | 0.068* (0.040) | | | |
| Lagged Y | 0.961*** (0.003) | | | 0.952*** (0.007) | | | 0.738*** (0.021) | 0.873*** (0.044) | 0.799*** (0.022) |
| Trend | | | 0.003*** (0.001) | | | | | | |
| Corruption | | | | -0.004 (0.008) | -0.540*** (0.129) | | | | |
| Land Inequality Diffusion | | | | 0.000 (0.000) | -0.000*** (0.000) | | | | |
| | | | | 0.145 (0.278) | 5.522* (3.196) | | | | |
| Internal Conflict | | | | 0.002 (0.003) | -0.050*** (0.015) | | | | |
| External Conflict | | | | -0.001 (0.003) | -0.035** (0.016) | | | | |
| Natural Resources | | | | 0.000 (0.000) | -0.001 (0.001) | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11449 | 11543 | 11543 | 6751 | 6751 | 10524 | 2262 | 2262 | 21143 |
| <i>R2 (within)</i> | 0.944 | 0.324 | 0.230 | 0.915 | 0.380 | 0.327 | 0.690 | | 0.893 |

Outcome: Individual Liberty/Rule of Law index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B6: Judicial Constraints (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| GDPpc (ln) | 0.004* (0.002) | 0.091*** (0.022) | 0.071*** (0.021) | 0.005 (0.003) | 0.089*** (0.025) | | | 0.020** (0.009) | 0.031*** (0.011) | 0.007*** (0.002) |
| GDPpc (ln) | | | | | | | | | | |
| L20 | | | | | | 0.099*** (0.033) | | | | |
| Lagged Y | 0.956*** (0.006) | | | 0.934*** (0.011) | | | 0.753*** (0.023) | 0.918*** (0.041) | 0.737*** (0.031) | |
| Trend | | | -0.000 (0.000) | | | | | | | |
| Corruption | | | | -0.016** (0.008) | -0.521*** (0.095) | | | | | |
| Land | | | | -0.000** (0.000) | -0.000*** (0.000) | | | | | |
| Inequality | | | | 0.184 (0.238) | 3.192 (2.179) | | | | | |
| Diffusion | | | | 0.001 (0.003) | -0.006 (0.012) | | | | | |
| Internal | | | | -0.002 (0.003) | -0.028* (0.016) | | | | | |
| Conflict | | | | -0.000 (0.000) | -0.001 (0.001) | | | | | |
| External | | | | | | | | | | |
| Conflict | | | | | | | | | | |
| Natural | | | | | | | | | | |
| Resources | | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 | |
| <i>Obs</i> | 11429 | 11524 | 11524 | 6751 | 6751 | 10524 | 2258 | 2258 | 21143 | |
| <i>R2 (within)</i> | 0.916 | 0.139 | 0.0801 | 0.887 | 0.304 | 0.154 | 0.606 | | 0.894 | |

Outcome: Judicial Constraints index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B7: Legislative Constraints (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|-------------------|---------------------|---------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.004 (0.003) | 0.065* (0.033) | 0.027 (0.032) | 0.006 (0.005) | 0.082** (0.040) | | 0.013 (0.013) | 0.021* (0.013) | 0.012*** (0.003) |
| GDPpc (ln) L20 | | | | | | 0.112** (0.045) | | | |
| Lagged Y | 0.960*** (0.004) | | | 0.956*** (0.006) | | | 0.772*** (0.022) | 0.915*** (0.031) | 0.701*** (0.025) |
| Trend | | | 0.002*** (0.001) | | | | | | |
| Corruption | | | | -0.015 (0.011) | -0.626*** (0.148) | | | | |
| Land | | | | 0.000 (0.000) | -0.000*** (0.000) | | | | |
| Inequality | | | | 0.118 (0.381) | 5.846* (3.448) | | | | |
| Diffusion | | | | -0.001 (0.004) | 0.014 (0.023) | | | | |
| Internal | | | | -0.001 (0.003) | -0.039* (0.021) | | | | |
| Conflict | | | | -0.000 (0.000) | -0.001 (0.001) | | | | |
| External | | | | | | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | | | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 9551 | 9839 | 9839 | 5834 | 5969 | 9133 | 1801 | 1801 | 21143 |
| <i>R2 (within)</i> | 0.940 | 0.253 | 0.154 | 0.927 | 0.359 | 0.284 | 0.694 | | 0.814 |

Outcome: Legislative Constraints index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B8: Free Expression (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|-------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.001 (0.002) | 0.077*** (0.029) | 0.031 (0.033) | 0.003 (0.005) | 0.145*** (0.042) | | 0.013 (0.012) | 0.036*** (0.010) | 0.007*** (0.002) |
| GDPpc (ln) L20 | | | | | | 0.090* (0.049) | | | |
| Lagged Y | 0.958*** (0.004) | | | 0.948*** (0.006) | | | 0.717*** (0.024) | 0.821*** (0.043) | 0.802*** (0.021) |
| Trend | | | 0.002*** (0.001) | | | | | | |
| Corruption | | | | 0.000 (0.007) | -0.577*** (0.159) | | | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000*** (0.000) | | | | |
| Diffusion | | | | 0.076 (0.290) | 5.998* (3.275) | | | | |
| Internal Conflict | | | | 0.002 (0.004) | -0.035* (0.020) | | | | |
| External Conflict | | | | -0.001 (0.004) | -0.054** (0.021) | | | | |
| Natural Resources | | | | -0.000 (0.000) | -0.003** (0.001) | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11244 | 11339 | 11339 | 6601 | 6605 | 10340 | 2221 | 2221 | 21143 |
| R2 (<i>within</i>) | 0.939 | 0.292 | 0.127 | 0.915 | 0.348 | 0.305 | 0.657 | | 0.864 |

Outcome: Free Expression index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B9: Alternative Sources of Information (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | -0.001 (0.002) | 0.020 (0.029) | -0.023 (0.032) | 0.003 (0.004) | 0.120*** (0.040) | | -0.000 (0.012) | 0.028*** (0.010) | 0.005* (0.003) |
| GDPpc (ln) L20 | | | | | | 0.039 (0.049) | | | |
| Lagged Y | 0.955*** (0.004) | | | 0.945*** (0.006) | | | 0.724*** (0.026) | 0.812*** (0.050) | 0.789*** (0.022) |
| Trend | | | 0.003*** (0.001) | | | | | | |
| Corruption | | | | 0.004 (0.007) | -0.449*** (0.154) | | | | |
| Land | | | | -0.000 (0.000) | -0.000*** (0.000) | | | | |
| Inequality | | | | 0.309 (0.321) | 6.712** (2.781) | | | | |
| Diffusion | | | | 0.005 (0.004) | 0.012 (0.018) | | | | |
| Internal | | | | -0.001 (0.004) | -0.043** (0.020) | | | | |
| Conflict | | | | -0.000 (0.000) | -0.003** (0.001) | | | | |
| External | | | | | | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | | | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11244 | 11339 | 11339 | 6601 | 6605 | 10340 | 2221 | 2221 | 21143 |
| <i>R2 (within)</i> | 0.938 | 0.325 | 0.154 | 0.915 | 0.341 | 0.331 | 0.678 | | 0.869 |

Outcome: Alternative Sources of Information index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B10: Free Association (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------------|---------------------|------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.001 (0.003) | 0.044 (0.030) | -0.008 (0.033) | 0.003 (0.005) | 0.102** (0.043) | | 0.010 (0.014) | 0.031*** (0.009) | 0.007** (0.003) |
| GDPpc (ln) L20 | | | | | | 0.063 (0.050) | | | |
| Lagged Y | 0.951*** (0.005) | | | 0.938*** (0.007) | | | 0.673*** (0.028) | 0.730*** (0.059) | 0.800*** (0.020) |
| Trend | | | 0.003*** (0.001) | | | | | | |
| Corruption | | | | 0.004 (0.009) | -0.533*** (0.138) | | | | |
| Land Inequality Diffusion | | | | -0.000** (0.000) | -0.000*** (0.000) | | | | |
| | | | | -0.093 (0.296) | 4.624* (2.699) | | | | |
| Internal Conflict | | | | 0.005 (0.004) | 0.009 (0.020) | | | | |
| External Conflict | | | | -0.003 (0.005) | -0.022 (0.022) | | | | |
| Natural Resources | | | | -0.000 (0.000) | -0.001 (0.001) | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11226 | 11330 | 11330 | 6585 | 6605 | 10338 | 2202 | 2202 | 21143 |
| <i>R2 (within)</i> | 0.932 | 0.315 | 0.131 | 0.907 | 0.346 | 0.346 | 0.627 | | 0.870 |

Outcome: Free Association index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B11: Executive Selection (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|---------------------------|---------------------|------------------|---------------------|---------------------|---------------------|------------------|---------------------|---------------------|---------------------|------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| GDPpc (ln) | 0.006 (0.007) | 0.033 (0.042) | 0.019 (0.039) | 0.043*** (0.015) | 0.223*** (0.061) | | | -0.001 (0.026) | 0.051** (0.022) | 0.007 (0.005) |
| GDPpc (ln) L20 | | | | | | 0.041 (0.065) | | | | |
| Lagged Y | 0.849*** (0.009) | | | 0.800*** (0.015) | | | 0.476*** (0.029) | 0.466*** (0.039) | 0.757*** (0.017) | |
| Trend | | | 0.005*** (0.001) | | | | | | | |
| Corruption | | | | -0.059 (0.041) | -0.455** (0.175) | | | | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000 (0.000) | | | | | |
| Diffusion | | | | 0.256 (0.688) | 3.436* (1.898) | | | | | |
| Internal Conflict | | | | -0.027** (0.013) | -0.042 (0.031) | | | | | |
| External Conflict | | | | -0.012 (0.010) | -0.040 (0.034) | | | | | |
| Natural Resources | | | | 0.000 (0.000) | 0.001 (0.001) | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 | |
| <i>Obs</i> | 11295 | 11402 | 11402 | 6716 | 6717 | 10394 | 2226 | 2226 | 21143 | |
| <i>R2 (within)</i> | 0.778 | 0.189 | 0.169 | 0.690 | 0.134 | 0.195 | 0.376 | | 0.785 | |

Outcome: Executive Selection index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B12: Adult Suffrage (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | -0.007** (0.003) | -0.111*** (0.030) | -0.067** (0.030) | -0.009** (0.004) | -0.074* (0.039) | | -0.025** (0.012) | 0.001 (0.009) | -0.010** (0.004) |
| GDPpc (ln) L20 | | | | | | -0.087** (0.039) | | | |
| Lagged Y | 0.922*** (0.005) | | | 0.918*** (0.009) | | | 0.664*** (0.017) | 0.736*** (0.028) | 0.776*** (0.018) |
| Trend | | | 0.009*** (0.001) | | | | | | |
| Corruption | | | | -0.015** (0.007) | -0.220** (0.093) | | | | |
| Land | | | | -0.000 (0.000) | -0.000* (0.000) | | | | |
| Inequality | | | | 0.042 (0.203) | 1.181 (2.252) | | | | |
| Diffusion | | | | 0.006 (0.004) | 0.024 (0.020) | | | | |
| Internal | | | | -0.000 (0.004) | -0.005 (0.020) | | | | |
| Conflict | | | | 0.000** (0.000) | 0.001* (0.001) | | | | |
| External | | | | | | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | | | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 152 | 152 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 11438 | 11532 | 11532 | 6750 | 6750 | 10513 | 2260 | 2260 | 21143 |
| <i>R2 (within)</i> | 0.944 | 0.579 | 0.520 | 0.948 | 0.623 | 0.623 | 0.780 | | 0.842 |

Outcome: Mass Suffrage index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B13: Polity2 (Polity IV)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|--------------------|---------------------|--------------------|---------------------|----------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.002 (0.003) | 0.071** (0.032) | 0.021 (0.028) | 0.008 (0.006) | 0.094** (0.037) | | 0.016 (0.014) | 0.064*** (0.013) | 0.009*** (0.003) |
| GDPpc (ln) | | | | | | 0.098** (0.039) | | | |
| L20 | | | | | | | | | |
| Lagged Y | 0.928*** (0.006) | | | 0.893*** (0.010) | | | 0.666*** (0.029) | 0.663*** (0.050) | 0.732*** (0.022) |
| Trend | | | 0.003*** (0.001) | | | | | | |
| Corruption | | | | | | | | | |
| Land | | | | -0.019 (0.016) | -0.536*** (0.136) | | | | |
| Inequality | | | | | | | | | |
| Diffusion | | | | -0.000*** (0.000) | -0.000*** (0.000) | | | | |
| Internal | | | | 0.083 (0.442) | 5.139** (2.347) | | | | |
| Conflict | | | | | | | | | |
| External | | | | 0.011** (0.005) | 0.037* (0.021) | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | -0.009 (0.006) | -0.028 (0.026) | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 155 | 155 | 155 | 132 | 132 | 156 | 154 | 154 | 216 |
| <i>Years</i> | 211 | 211 | 211 | 99 | 99 | 193 | 42 | 42 | 213 |
| <i>Obs</i> | 12676 | 12823 | 12823 | 6647 | 6666 | 11854 | 2465 | 2465 | 23445 |
| <i>R2 (within)</i> | 0.912 | 0.354 | 0.275 | 0.845 | 0.282 | 0.355 | 0.655 | | 0.798 |

Outcome: Polity2 index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B14: UDS (Pemstein)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|-------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.001 (0.002) | 0.033* (0.017) | 0.003 (0.016) | 0.003 (0.004) | 0.026 (0.023) | | 0.012 (0.011) | 0.054*** (0.010) | 0.013*** (0.003) |
| GDPpc (ln) L20 | | | | | | 0.025 (0.026) | | | |
| Lagged Y | 0.892*** (0.009) | | | 0.869*** (0.012) | | | 0.523*** (0.044) | 0.638*** (0.075) | 0.513*** (0.022) |
| Trend | | | 0.003*** (0.000) | | | | | | |
| Corruption | | | | -0.022* (0.012) | -0.334*** (0.081) | | | | |
| Land | | | | 0.000 (0.000) | -0.000 (0.000) | | | | |
| Inequality | | | | 0.378 (0.317) | 4.417** (2.221) | | | | |
| Diffusion | | | | 0.000 (0.003) | -0.009 (0.010) | | | | |
| Internal | | | | -0.004 (0.003) | 0.001 (0.016) | | | | |
| Conflict | | | | -0.000 (0.000) | -0.000 (0.001) | | | | |
| External | | | | | | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | | | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 156 | 156 | 156 | 131 | 131 | 155 | 155 | 155 | 205 |
| <i>Years</i> | 62 | 63 | 63 | 53 | 53 | 63 | 11 | 11 | 114 |
| <i>Obs</i> | 7390 | 7538 | 7538 | 4840 | 4846 | 6883 | 1296 | 1296 | 21143 |
| <i>R2 (within)</i> | 0.862 | 0.282 | 0.216 | 0.829 | 0.322 | 0.309 | 0.502 | | 0.755 |

Outcome: UDS index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B15: Political Rights (FH)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|------------------|---------------------|---------------------|---------------------|-------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | -0.004 (0.006) | 0.008 (0.033) | -0.009 (0.031) | -0.022 (0.014) | -0.064 (0.050) | | -0.002 (0.021) | 0.092*** (0.020) | 0.026*** (0.005) |
| GDPpc (ln) L20 | | | | | | -0.021 (0.036) | | | |
| Lagged Y | 0.849*** (0.013) | | | 0.797*** (0.021) | | | 0.436*** (0.042) | 0.652*** (0.064) | 0.481*** (0.018) |
| Trend | | | 0.006*** (0.001) | | | | | | |
| Corruption | | | | -0.067* (0.035) | -0.383** (0.173) | | | | |
| Land | | | | -0.000 (0.000) | -0.000 (0.000) | | | | |
| Inequality | | | | 0.186 (0.583) | 0.661 (2.660) | | | | |
| Diffusion | | | | | | | | | |
| Internal | | | | -0.009 (0.008) | -0.057** (0.028) | | | | |
| Conflict | | | | | | | | | |
| External | | | | -0.005 (0.012) | 0.024 (0.033) | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | 0.001*** (0.000) | 0.003*** (0.001) | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 157 | 157 | 157 | 132 | 132 | 157 | 155 | 155 | 205 |
| <i>Years</i> | 37 | 39 | 39 | 25 | 25 | 40 | 7 | 7 | 114 |
| <i>Obs</i> | 5247 | 5540 | 5540 | 2746 | 2749 | 5733 | 994 | 994 | 21143 |
| <i>R2 (within)</i> | 0.774 | 0.137 | 0.125 | 0.695 | 0.170 | 0.139 | 0.297 | | 0.666 |

Outcome: Political Rights index, inverted scale. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B16: Civil Liberties (FH)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|---------------------------|---------------------|------------------|---------------------|---------------------|----------------------|------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| GDPpc (ln) | 0.002 (0.005) | 0.028 (0.027) | 0.030 (0.025) | -0.018 (0.012) | -0.025 (0.043) | | 0.012 (0.017) | 0.053*** (0.015) | 0.022*** (0.004) |
| GDPpc (ln) L20 | | | | | | 0.012 (0.031) | | | |
| Lagged Y | 0.845*** (0.012) | | | 0.791*** (0.018) | | | 0.468*** (0.035) | 0.673*** (0.047) | 0.415*** (0.019) |
| Trend | | | 0.005*** (0.001) | | | | | | |
| Corruption | | | | -0.014 (0.023) | -0.215 (0.138) | | | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000 (0.000) | | | | |
| Diffusion | | | | 0.124 (0.631) | 2.677 (2.410) | | | | |
| Internal Conflict | | | | -0.006 (0.007) | -0.060*** (0.021) | | | | |
| External Conflict | | | | -0.001 (0.011) | -0.020 (0.031) | | | | |
| Natural Resources | | | | 0.001*** (0.000) | 0.002 (0.001) | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 157 | 157 | 157 | 132 | 132 | 157 | 155 | 155 | 205 |
| <i>Years</i> | 37 | 39 | 39 | 25 | 25 | 40 | 7 | 7 | 114 |
| <i>Obs</i> | 5247 | 5540 | 5540 | 2746 | 2749 | 5733 | 994 | 994 | 21143 |
| <i>R2 (within)</i> | 0.788 | 0.179 | 0.154 | 0.685 | 0.126 | 0.182 | 0.416 | | 0.663 |

Outcome: Civil Liberties index, inverted scale. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***, 0.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B17: BMR (Boix et al.)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | Logit | OLS |
|---------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| GDPpc (ln) | 0.007 (0.005) | 0.109*** (0.041) | 0.084** (0.041) | 0.012 (0.010) | 0.139** (0.054) | | 1.400*** (0.439) | 0.046*** (0.008) |
| GDPpc (ln) L20 | | | | | | 0.175*** (0.051) | | |
| Lagged Y | 0.904*** (0.007) | | | 0.869*** (0.010) | | | 2.268*** (0.219) | 0.507*** (0.029) |
| Trend | | | 0.003*** (0.001) | | | | | |
| Corruption | | | | -0.068*** (0.025) | -0.821*** (0.178) | | | |
| Land Inequality | | | | -0.000* (0.000) | -0.000*** (0.000) | | | |
| Diffusion | | | | 1.237 (0.749) | 9.517** (4.598) | | | |
| Internal Conflict | | | | 0.008 (0.008) | 0.015 (0.029) | | | |
| External Conflict | | | | -0.006 (0.006) | -0.034 (0.032) | | | |
| Natural Resources | | | | 0.000 (0.000) | 0.000 (0.001) | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 156 | 156 | 156 | 132 | 132 | 155 | 76 | 216 |
| <i>Years</i> | 207 | 207 | 207 | 99 | 99 | 187 | 41 | 213 |
| <i>Obs</i> | 12232 | 12351 | 12351 | 6735 | 6737 | 11010 | 1550 | 23445 |
| <i>R2 (within)</i> | 0.873 | 0.312 | 0.279 | 0.805 | 0.255 | 0.322 | | 0.578 |

Outcome: BMR index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *, **, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B18: Lexical (Skaaning)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|---------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| GDPpc (ln) | 0.010** (0.005) | 0.104*** (0.027) | 0.064** (0.025) | 0.016* (0.009) | 0.124*** (0.037) | | | 0.040** (0.017) | 0.097*** (0.019) | 0.009*** (0.003) |
| GDPpc (ln) L20 | | | | | | 0.079** (0.037) | | | | |
| Lagged Y | 0.849*** (0.010) | | | 0.814*** (0.014) | | | 0.479*** (0.037) | 0.442*** (0.064) | 0.715*** (0.017) | |
| Trend | | | 0.003*** (0.000) | | | | | | | |
| Corruption | | | | -0.069** (0.028) | -0.625*** (0.142) | | | | | |
| Land | | | | -0.000*** (0.000) | -0.000*** (0.000) | | | | | |
| Inequality | | | | 1.144* (0.665) | 6.447** (2.915) | | | | | |
| Diffusion | | | | 0.006 (0.009) | -0.015 (0.028) | | | | | |
| Internal | | | | -0.003 (0.007) | -0.015 (0.024) | | | | | |
| Conflict | | | | -0.000 (0.000) | 0.000 (0.001) | | | | | |
| External | | | | | | | | | | |
| Conflict | | | | | | | | | | |
| Natural | | | | | | | | | | |
| Resources | | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 157 | 157 | 157 | 132 | 132 | 158 | 156 | 156 | 216 | |
| <i>Years</i> | 211 | 211 | 211 | 99 | 99 | 193 | 42 | 42 | 213 | |
| <i>Obs</i> | 12947 | 13081 | 13081 | 6683 | 6695 | 12053 | 2509 | 2509 | 23445 | |
| <i>R2 (within)</i> | 0.825 | 0.378 | 0.305 | 0.740 | 0.266 | 0.374 | 0.523 | | 0.799 | |

Outcome: Lexical index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B19: Electoral Contestation (V-Dem)

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS | |
|--------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | Y>0 | 5-year | 5-year | MI | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| GDPpc (ln) | 0.007** (0.003) | 0.095*** (0.022) | 0.069*** (0.022) | 0.014*** (0.005) | 0.147*** (0.026) | | | 0.007** (0.003) | 0.025* (0.013) | 0.061*** (0.014) | 0.007*** (0.003) |
| GDPpc (ln) | | | | | | | | | | | |
| L20 | | | | | | 0.110*** (0.033) | | | | | |
| Lagged Y | 0.912*** (0.008) | | | 0.893*** (0.010) | | | 0.956*** (0.006) | 0.640*** (0.030) | 0.689*** (0.056) | 0.777*** (0.021) | |
| Trend | | | 0.003*** (0.000) | | | | | | | | |
| Corruption | | | | -0.053*** (0.015) | -0.589*** (0.112) | | | | | | |
| Land | | | | -0.000** (0.000) | -0.000*** (0.000) | | | | | | |
| Inequality | | | | 0.401 (0.492) | 6.131* (3.600) | | | | | | |
| Diffusion | | | | -0.001 (0.004) | -0.010 (0.013) | | | | | | |
| Internal | | | | -0.003 (0.004) | -0.037** (0.018) | | | | | | |
| Conflict | | | | -0.000* (0.000) | -0.002** (0.001) | | | | | | |
| External | | | | | | | | | | | |
| Conflict | | | | | | | | | | | |
| Natural | | | | | | | | | | | |
| Resources | | | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| <i>Countries</i> | 152 | 152 | 152 | 132 | 132 | 153 | 144 | 152 | 152 | 205 | |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 111 | 22 | 22 | 114 | |
| <i>Obs</i> | 11076 | 11193 | 11193 | 6551 | 6572 | 10212 | 7146 | 2168 | 2168 | 21143 | |
| <i>R2 (within)</i> | 0.900 | 0.395 | 0.338 | 0.884 | 0.465 | 0.411 | 0.915 | 0.643 | | 0.875 | |

Outcome: Electoral Contestation index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), Y>0 (scores for Electoral Contestation that surpass 0), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B20: Urbanization and Competitive Elections

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | Logit | OLS |
|------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Urbaniz | 0.077*** (0.026) | 0.711*** (0.202) | 0.712*** (0.164) | 0.040 (0.067) | 0.284 (0.326) | | 1.424 (1.767) | 0.195*** (0.050) |
| Urbaniz L20 | | | | | | 0.648*** (0.218) | | |
| Lagged Y | 0.892*** (0.008) | | | 0.843*** (0.012) | | | 2.243*** (0.198) | 0.577*** (0.031) |
| Trend | | | 0.001*** (0.000) | | | | | |
| Corruption | | | | -0.090*** (0.031) | -0.797*** (0.184) | | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000 (0.000) | | | |
| Diffusion | | | | 1.959** (0.899) | 9.613** (4.453) | | | |
| Internal Conflict | | | | 0.006 (0.010) | -0.023 (0.034) | | | |
| External Conflict | | | | -0.007 (0.007) | -0.050 (0.035) | | | |
| Natural | | | | 0.000 (0.000) | 0.001 (0.002) | | | |
| Resources | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 188 | 188 | 188 | 135 | 135 | 188 | 95 | 213 |
| <i>Years</i> | 211 | 211 | 211 | 99 | 99 | 193 | 42 | 216 |
| <i>Obs</i> | 16165 | 16357 | 16357 | 7087 | 7101 | 16161 | 2063 | 23445 |
| <i>R2 (within)</i> | 0.850 | 0.288 | 0.253 | 0.765 | 0.222 | 0.282 | | 0.669 |

Outcome: Competitive Elections index. *Estimators:* OLS (ordinary least squares), logit (conditional logit), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B21: Urbanization and Clean Elections

| <i>Estimator</i> | OLS | OLS | OLS | OLS | OLS | OLS | OLS | GMM | OLS |
|--------------------|---------------------|--------------------|---------------------|----------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| <i>Sample</i> | Full | Full | Full | Full | Full | Full | 5-year | 5-year | MI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Urbaniz | 0.034** (0.016) | 0.285** (0.128) | 0.305** (0.124) | 0.082*** (0.030) | 0.387** (0.165) | | 0.155*** (0.058) | 0.265*** (0.058) | 0.062*** (0.020) |
| Urbaniz | | | | | | 0.275** (0.127) | | | |
| L20 | | | | | | | | | |
| Lagged Y | 0.897*** (0.009) | | | 0.841*** (0.015) | | | 0.636*** (0.031) | 0.622*** (0.061) | 0.742*** (0.022) |
| Trend | | | 0.003*** (0.000) | | | | | | |
| Corruption | | | | -0.106*** (0.022) | -0.730*** (0.122) | | | | |
| Land | | | | -0.000 (0.000) | -0.000 (0.000) | | | | |
| Inequality | | | | 0.632 (0.486) | 4.357 (2.829) | | | | |
| Diffusion | | | | -0.001 (0.005) | -0.013 (0.015) | | | | |
| Internal | | | | -0.002 (0.004) | -0.035* (0.018) | | | | |
| Conflict | | | | -0.000 (0.000) | -0.000 (0.001) | | | | |
| External | | | | | | | | | |
| Conflict | | | | | | | | | |
| Natural | | | | | | | | | |
| Resources | | | | | | | | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 160 | 160 | 160 | 135 | 135 | 160 | 160 | 160 | 205 |
| <i>Years</i> | 111 | 112 | 112 | 99 | 99 | 115 | 22 | 22 | 114 |
| <i>Obs</i> | 15011 | 15193 | 15193 | 7061 | 7081 | 15530 | 2926 | 2926 | 21143 |
| <i>R2 (within)</i> | 0.873 | 0.354 | 0.320 | 0.820 | 0.401 | 0.365 | 0.611 | | 0.856 |

Outcome: Clean Elections index. *Estimators:* OLS (ordinary least squares), GMM (generalized method of moments), standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Sample:* Full (all available data), 5-year (data aggregated at 5-year intervals, after constructing 5-year moving averages), MI (missing data imputed with the Amelia multiple imputation algorithm). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B22: Competitive Elections (logit models)

| <i>Sample</i> | Full 1 | Full 2 | Full 3 | Full 4 | Full 5 | 5-year 6 | Full 7 |
|----------------------------|---------------------|---------------------|---------------------|------------------------|-----------------------|---------------------|---------------------|
| GDPpc (ln) | 0.945*** (0.334) | 1.749*** (0.463) | 0.194 (0.383) | 1.691*** (0.428) | 2.649*** (0.611) | 1.682*** (0.508) | |
| GDPpc (ln), L20 | | | | | | | 2.263*** (0.705) |
| Lagged Y | 6.338*** (0.252) | | | 5.900*** (0.358) | | 2.345*** (0.269) | |
| Trend | | | 0.054*** (0.010) | | | | |
| Corruption | | | | -5.131*** (1.272) | -11.125*** (2.264) | | |
| Land Inequality | | | | -0.000 (0.000) | -0.000 (0.000) | | |
| Diffusion | | | | 106.088*** (40.382) | 141.724** (67.440) | | |
| Internal Conflict | | | | 0.397 (0.414) | -0.034 (0.446) | | |
| External Conflict | | | | -0.571 (0.503) | -0.854* (0.502) | | |
| Natural Resources | | | | 0.028 (0.019) | 0.004 (0.044) | | |
| Country FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year FE | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| <i>Countries</i> | 86 | 87 | 89 | 60 | 60 | 78 | 82 |
| <i>Years</i> | 152 | 152 | 211 | 99 | 99 | 31 | 154 |
| <i>Obs</i> | 7351 | 7434 | 8831 | 3842 | 3848 | 1370 | 6910 |
| <i>R2 (pseudo)</i> | 0.827 | 0.519 | 0.502 | 0.802 | 0.559 | 0.562 | 0.529 |
| <i>Log likelihood</i> | -839.2 | -2363 | -2857 | -517.4 | -1154 | -396.6 | -2198 |

Outcome: Competitive Elections index. Logistic regression, standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Units of analysis:* country-years, unless otherwise noted. Right-side variables measured at T-1.

Table B23: Dynamic Probit Models on binary measures (Electoral Regime/Competitive Elections)

| <i>Dependent variable</i> | Electoral Regime 1 | Competitive Elections 2 |
|--|------------------------------|-----------------------------------|
| GDPpc (ln) (Coefficient relevant for transition into ER/CE) | -0.078 (0.069) | 0.162*** (0.059) |
| Lagged Y | 0.273 (0.615) | 1.510* (0.772) |
| GDPpc (ln)X Lagged Y | 0.423*** (0.087) | 0.349*** (0.102) |
| Estimated coeff. of GDPpc (ln) on “survival” of ER/CE | 0.344*** (0.044) | 0.511*** (0.071) |
| Country FE | | |
| Year FE | ✓ | ✓ |
| <i>Countries</i> | 111 | 211 |
| <i>Years</i> | 156 | 157 |
| <i>Obs</i> | 11792 | 12947 |
| R2 (<i>pseudo</i>) | 0.745 | 0.875 |
| <i>Log pseudolikelihood</i> | -1702.74 | -1067.32 |

Outcome: Competitive Elections index. Probit regression, standard errors clustered by country. *.1, **.05, ***.01 (two-sided tests). *Units of analysis:* country-years. Right-side variables measured at T-1.