



# Governing Countries: A Theory of Subnational Regime Variation

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# **Governing Countries: A Theory of Subnational Regime Variation\***

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## **Abstract**

Studies of a small number of countries have revealed that both democratic and non-democratic subnational governments can exist within a single country. However, these works have neither demonstrated how common subnational regime variation is nor explained why some countries are more prone to it. This paper does both. Using Varieties of Democracy subnational data for countries of the world from 1900 to 2012, we show that subnational regime variation exists throughout all regions, in both unitary and federal states, and in both the present and past. The paper also demonstrates theoretically and empirically how social heterogeneity and factors undermining the national government's ability to broadcast power promote this variation. Specifically, subnational regime variation is more common in countries that are ethnically and economically diverse, rugged, and populous. These measures, our theory, and the benchmark models we developed will spur new research in regime types and change.

## Introduction

The study of political regimes has focused primarily on differences at the country-level. Yet, in depth research on individual countries has demonstrated that country-level point scores—as reported by crossnational indices, such as Polity and Freedom House—hide enormous within-country variability. In other words, the same regime type does not necessarily exist throughout a country. This has mostly been shown for countries that we typically label as democratic or democratizing: some territories in these countries enjoy a high degree of democracy while others qualify as “authoritarian enclaves”. Residents of one province enjoy free and fair elections and numerous civil liberties, for example, whereas residents of a neighboring province do not. Similar subnational regime variation, or unevenness, can exist within authoritarian countries.

This paper offers a theory of why some countries are more prone to subnational regime variation than others, and it provides data depicting how common this unevenness is. The topic is of normative, practical, and theoretical importance. In countries with democratic or democratizing national regimes all citizens, regardless of their location, should enjoy the benefits of democratic institutions and liberties. A better understanding of subnational regime variation can be helpful to democracy advocates and policymakers who are trying to extend these benefits to all. A clearer picture of unevenness can also illuminate national regime change, highlighting which democratic or democratizing countries might be susceptible to democratic breakdowns due to authoritarian enclaves and which authoritarian national regimes might be vulnerable as a result of democratic enclaves. A better understanding of unevenness can help scholars improve regime typologies as well; currently countries with minimal and substantial subnational regime variation are treated identically.

Existing works have addressed a different question—why some regions within a country have a lower level of democracy than others—rather than our question of why some countries are more susceptible to subnational regime variation (e.g. [Behrend 2011](#); [Gel'man and Lankina 2008](#); [Gervasoni 2010](#); [Giraudy 2015](#); [McMann 2006](#)). The questions are related, but not identical, because the factors that make a country prone to variation might differ from the factors that make a particular region an outlier. Findings from this existing literature have pointed to proximate causes of subnational levels of democracy. These factors are typically endogenous to the government and related to elites' strategies. The factors include political institutions that reduce the national government's interest in democratizing regions and economic monopolies created by elites and used to restrict political freedoms ([Gervasoni 2010](#); [Gibson 2013](#); [McMann 2006](#); [Ziblatt 2009](#)).

Our theory, by contrast, focuses on distal causes of subnational regime variation. Specifically, we show that countries with great unevenness are hard to govern by virtue of their diversity, topography, and/or size. These geographic and demographic features increase social heterogeneity and challenge the national government's control over subnational units, generating and enabling variation across subnational regimes.

We agree that actors are important, as emphasized in earlier studies, but in this paper our focus is on an earlier link in the causal chain. The features we identify are exogenous to government, constituting fundamental structures that condition the behavior of elites.

In accounting for unevenness we find that some factors that might be expected to affect unevenness are not influential. Specifically, our analysis suggests that modernization, the resource curse, country-level inequality, federalism, and electoral and party rules do not account for (or account for very little) subnational regime variation.

Our methodological approach differs from prior studies. Rather than examine regions in one or two countries in the contemporary period, we conduct a crossnational analysis that encompasses the past century. To do so we enlist the Varieties of Democracy (V-Dem) dataset, which includes measures of subnational dispersion in all countries of the world with annual data beginning in 1900 (Coppedge, et al. 2015a).<sup>1</sup> This dataset enables us to provide the first global and historical study of unevenness. Among social science studies, our approach is also innovative because our statistical analysis takes into account measurement uncertainty, thus providing a better estimate of overall uncertainty in reported results. In addition, our model allows us to distinguish “within-country” and “between-country” effects. This approach avoids the kind of omitted variable bias that plagues most random effects models, without discarding time-invariant observations, as one would in a fixed-effects model (Bell and Jones 2015).

The V-Dem measures provide empirical evidence about subnational regime variation not yet revealed by earlier work. Prior research investigated a small number of countries with fairly similar characteristics. Most are located in Latin America or the post-Soviet region, have newly democratic or hybrid regimes, are federal states, and are examined in the contemporary era. We find that the unevenness exists in all regions of the world. It is most common in countries with hybrid national regimes, and it exists in both unitary and federal states and different time periods.

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<sup>1</sup> Data are available at <https://www.v-dem.net/en/>. They extend to 2012; some of our analysis ends at 2010 due to non-V-Dem data limitations. Microstates are currently excluded from V-Dem, but their inclusion and updating to the current year are in progress.

In sum, this paper offers a new question, theory, approach, and empirical findings to understanding subnational regime variation. The paper proceeds in seven sections: (I) theoretical framework, (II) hypotheses, (III) measurement of unevenness, (IV) general empirical patterns, (V) tests, (VI) alternate explanations and tests, and (VII) conclusions.

## I. Theoretical Framework

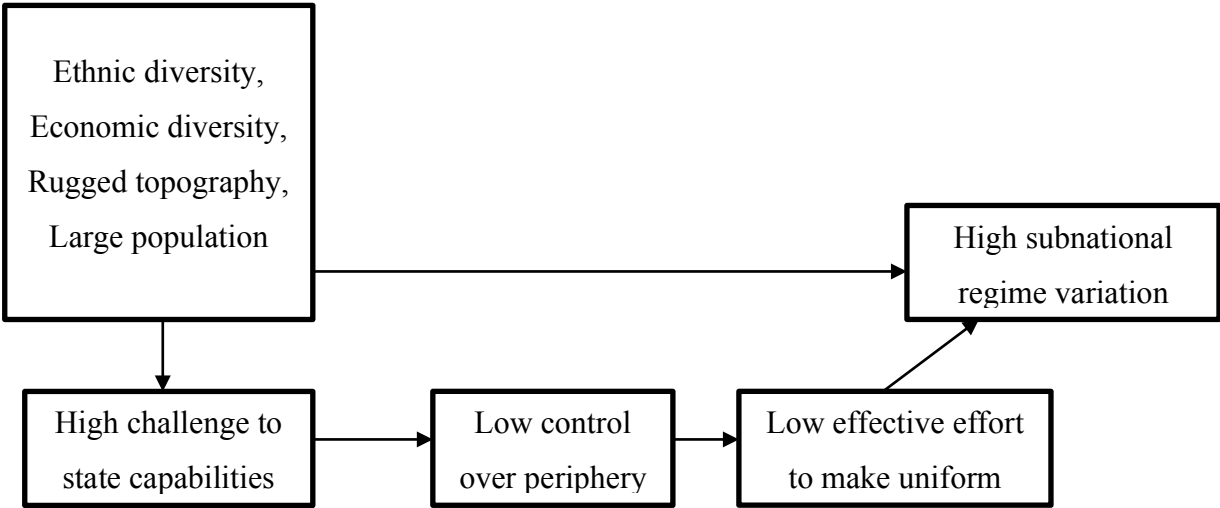
We argue that greater social heterogeneity and structural challenges to the state's ability to govern the periphery result in little state control outside the capital and thus little effective effort to bring subnational regimes into line with the laws and practices of the national government. As a consequence, there is greater subnational regime variation.

As depicted in Figure 1, high social heterogeneity, in the form of ethnic or economic diversity promotes subnational regime variation in two ways. First, this diversity can directly result in subnational political units having different regime characteristics. This claim resonates with one strand of the subnational democracy literature, which has shown how local cultural or economic conditions can shape subnational regime type. For example, scholars have demonstrated that in recent decades indigenous groups with strong patriarchal norms in the Mexican state Oaxaca have created municipal institutions that prohibit women's participation in the selection of mayors; whereas those with more progressive norms have not done so (e.g. [Danielson and Eisenstadt 2009](#)). Regarding economic diversity, research has shown that in the 1990s Russian regions offering more limited economic opportunities developed governments that were significantly less democratic than those in regions providing more economic opportunities ([McMann 2006](#)).

A second way that significant ethnic or economic diversity can promote subnational regime variation is by challenging the national government. This is true by virtue of the fact that governing many different units is more challenging than governing similar units. In addition, subnational elites, and sometimes average residents themselves, will defend their political practices and thus can be hostile to national government homogenization efforts, as research on nation- and state-building has alluded to ([Migdal 1988](#); [Scott 2009](#); [Smith 1988](#)). When a particular distinct group is concentrated in a subnational territory rather than dispersed throughout a country, their resistance is likely to be even more effective ([Cederman and Girardin 2007](#)). As an illustration of this, consider the Thai province of Pattani. Since its integration into Thailand in the early 1900s, the majority Muslim Malay population there has struggled against homogenization, including national efforts to end local governance by Sharia law. A separatist

movement—the country’s strongest minority resistance—and the Thai military response have resulted in gross violations of civil liberties and local elections marred by voter intimidation, unseen in most provinces of the country (Gunaratna and Acharya 2012; McCargo, et al. 2012).

**Figure 1: Depiction of Argument**



Besides social heterogeneity, the national government can also face structural challenges that result in higher subnational regime variation. A rugged topography and large population can promote subnational regime variation through the same two pathways as social heterogeneity. A rugged landscape encourages the development of distinctive cultures, and a large population results in a greater diversity of preferences, norms, and practices (Easterly and Kraay 2000). Both factors result in a greater diversity of political institutions and practices and thus directly promote subnational regime variation. They also are additional obstacles to extending state power territorially and eliminating this variation. Regardless of state wealth and other measures of state strength, it is more difficult to broadcast power over a rugged country with a large population than a topographically more forgiving country with a small population. This has been true for India, a country with the world’s second largest population and some of the Earth’s tallest mountains and densest forests. For example, the national government has failed to bring the state of Jammu and Kashmir, covered by five mountain ranges, into the democratic national fold since the country’s independence. Instead a non-democratic regime has ruled the state, engaging in election fraud and violating civil rights and fueling violent separatism by prohibiting legal means of protest (Malik 2002).



These challenges to state capabilities reduce the national government's control over the periphery and thus the likelihood of it making effective efforts to homogenize subnational regimes and bring them into line with national laws and practices. This holds true whether those national laws and practices lean democratic or authoritarian. The important role played by national officials resonates with the prominence given to state actions in the general literature on nation- and state-building ([Mann 1986](#); [Tilly 1992](#)).

Unlike most works, our framework emphasizes that national officials' inabilities, not only their will, can prevent homogenization of subnational political regimes. Whether, or to what extent, the central state wishes to impose its will on the various regions of a country has been the motif in the existing literature ([Benton 2012](#); [Gibson 2013](#); [Goodnow, et al. 2014](#)). Yet, even national leaders interested in broadcasting power into the periphery can be stymied by ethnic and economic diversity, rugged terrain, and a large population.

Our focus on exogenous factors clarifies the causal pathways to subnational regime variation. The factors we identify contribute to subnational regime variation, not the reverse. It is unfathomable that subnational regime variation caused ruggedness in the country. It is also difficult to imagine the variation affected population size. There is, however, likely a feedback mechanism between subnational regime variation and social heterogeneity: distinct local political practices might help preserve social differences.

## II. Hypotheses

According to our theoretical framework, subnational regime variation is a product of two intertwined factors: social heterogeneity and structural challenges to the state's ability to govern. It follows that any factor contributing to one or the other (or both) should also affect the level of unevenness in a country. We propose four hypotheses.

First, we hypothesize that a country's ruggedness conditions its sociology and its political institutions. A rugged topography is an incubator for distinctive cultures and a barrier to involvement by the central government, thus promoting varied political institutions and practices and also hindering the national government extension of power territorially. We measure ruggedness by the average *Elevation* across regions of a country. Countries with higher average elevations tend to be more rugged. Citations and additional details about this and other independent variable measures appear in Table A1 in the appendix; summary statistics appear in Table A2.

Second, we posit that the demographic size of a country should lead to greater diversity of preferences, norms, and practices—thus fostering greater heterogeneity in political institutions and practices across regions and also complicating the central government’s task of governing (Easterly and Kraay 2000). Demographic size is measured by *Population*, transformed by the natural logarithm.

Third, we expect that ethnic diversity fosters greater unevenness by cultivating varied political institutions and practices within the country and hindering national government efforts’ at homogenization. We use a measure, *Ethnic frac* (fractionalization) that defines ethnicity as a combination of racial and linguistic characteristics and represents the probability that two people chosen at random will not share any characteristic.

Fourth, we consider economic inequality a form of economic diversity. We hypothesize that variability in economic performance affects variability in the extent of subnational democracy. National and subnational democratization studies have shown that wealthier territories—whether countries or provinces—are more likely to sustain democracy (Boix and Stokes 2003; Giraudy 2013; Lipset 1959). Both the fact that locals might defend their institutions and practices and that there are a variety of subnational regimes complicate governance by national elites. We measure variability in economic performance by gross domestic product across geographic cells, measured at a 1-degree longitude by 1-degree latitude resolution. We regard this as a reasonable proxy for geographic inequality, labelled *Geo Inequality*.

In testing our theory in section five we take advantage of our crossnational, historical dataset to evaluate to what extent the factors we identify, versus those typically associated with subnational regime type, make countries more prone to this variation. Prior to this analysis, we first turn to measurement of subnational regime variation and general patterns.

### III. Measuring Unevenness

The V-Dem dataset includes two measures of within-country unevenness, one focused on the freeness and fairness of subnational elections (*Subnational election unevenness*) and the other focused on government officials’ respect for civil liberties (*Civil liberties unevenness*). The first is central to the electoral conceptualization of democracy and the second is central to the liberal conceptualization of democracy (Coppedge, et al. 2011). Poor electoral quality or respect for civil liberties indicates a less democratic, more authoritarian regime. Together, the measures should provide an overall picture of the extent to which regime type varies across regions within a country.

The structure of these two questions is identical, allowing for easy comparisons. Question one asks “Does the freeness and fairness of subnational elections vary across different areas of the country?” Question two asks “Does government respect for civil liberties vary across different areas of the country?” There are three possible response categories: 0 = equivalence across most or all subnational units, 1 = some variation across units, and 2 = significant variation.<sup>2</sup> The complete text of the two questions and various response-categories are listed in Table A1 in the appendix.

Data for these two measures comes from country-expert coders, generally academics or members of nongovernmental organizations and typically residents or citizens of the country they are coding. For each indicator, an average of five coders with expertise in elections or civil liberties are enlisted, resulting in five separate codings. Coders’ responses are aggregated in a measurement model that employs Bayesian item response theory (IRT) modeling techniques to estimate latent polity characteristics from each set of expert ratings. This model provides point estimates as well as estimates of uncertainty, which are based on inter-coder reliability and other features of the coders.<sup>3</sup> Validity tests of these two subnational measures show that they capture the underlying concepts well ([McMann 2016](#)).

The resulting variables are only moderately correlated (Pearson’s  $r=0.39$ ), suggesting that they measure different dimensions of regime type at the subnational level. For this reason, we do not attempt to construct a single index of unevenness in the analyses that follow. We do propose our theory and conduct tests with the aim of explaining unevenness generally, not just for one type. Histograms of each variable demonstrate a continuous distribution (Figures A1 and A2 in the appendix), justifying our use of linear models in subsequent analyses.

## IV. General Patterns

The V-Dem data expand upon the existing literature to show the scope of subnational regime variation. This variation exists across the globe and back in time. Also, it has persisted despite the democratization waves.

Unevenness is a global phenomenon. In 2012, approximately 57 percent of all countries experienced either some unevenness or significant unevenness in freedom and fairness of

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<sup>2</sup> To clarify, were there no or barely any subnational political unit outliers, the country would score a zero. As the number of units that differs from others grows the country would score a one and then a two.

<sup>3</sup> Additional details about coder recruitment, selection, and characteristics and the measurement model are available in online V-Dem documents ([Coppedge, et al. 2015b](#); [Pemstein, et al. 2015](#)).

subnational elections. For unevenness in civil liberties, the value was approximately 60 percent.<sup>4</sup> Subnational regime variation is not limited to particular regions of the world, as Figures 2 and 3 depict. Significant unevenness in freeness and fairness of subnational elections or respect for civil liberties, as illustrated with black, and some unevenness, depicted with dark gray, exist in every region of the world.

**Figure 2: World Map of Unevenness in Freeness and Fairness of Subnational Elections in 2012**

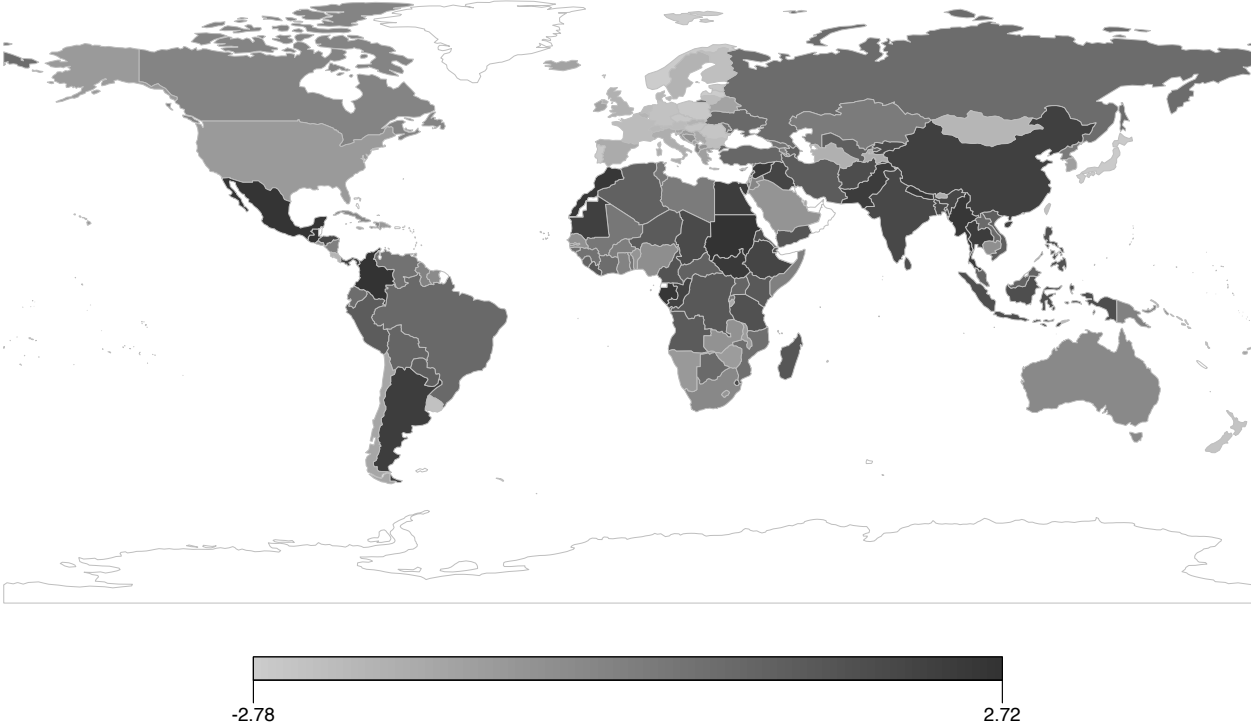


*Note: Darker shades indicate greater unevenness.*

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<sup>4</sup> Percentages were calculated using the ordinal values of the variables. The rest of the paper uses the interval measures.

Figure 3: World Map of Unevenness in Civil Liberties in 2012

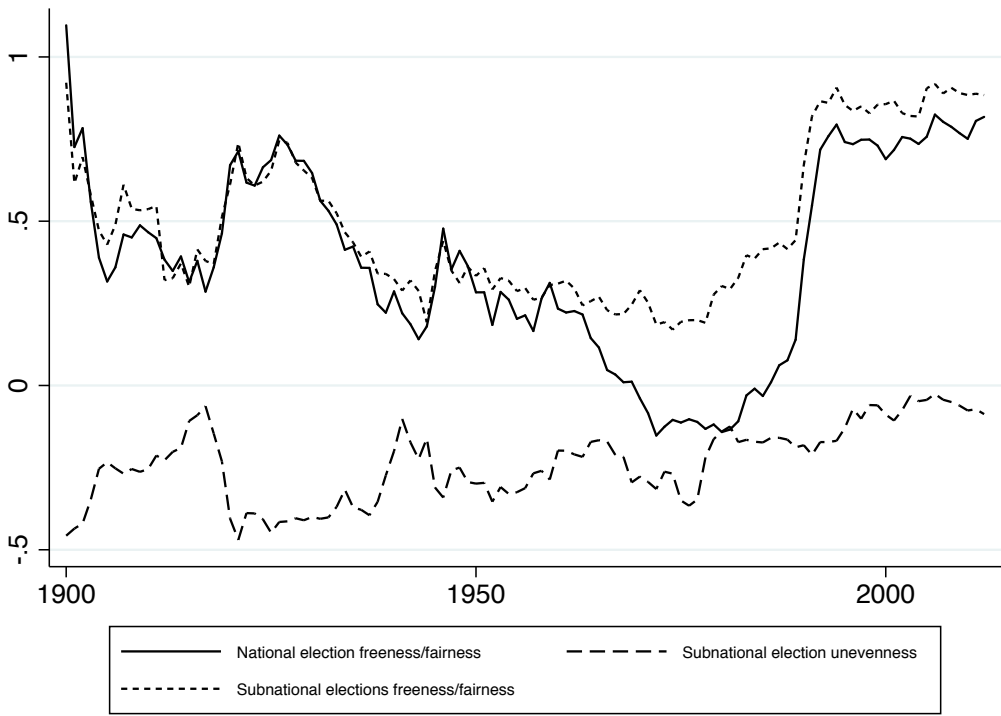


Note: Darker shades indicate greater unevenness.

Subnational regime variation exists throughout the observed period, as shown in Figures 4 and 5 by the dashed lines. The general trend over the past century indicates an increase in election unevenness and a very slight decline in civil liberties unevenness, especially over the past few decades, coincident with the so-called third wave of democratization (Huntington 1991). Despite vast improvements that have been realized in the overall quality of elections, unevenness has remained. This is evident from two additional lines in Figure 1. The dotted line shows the mean value of the average freeness and fairness of subnational elections in countries across the time period. The solid line displays comparable data for national (rather than subnational) elections. The subnational and national elections questions asked V-Dem coders to evaluate elections based on a five-point scale of not free and fair to free and fair (See v2elffelr, v2elfrfair in Coppedge, et al. 2015b) We see that the quality of national and subnational elections drops dramatically through the interwar and postwar era—the latter due, in part, to the birth of new nation states and the advent of electoral regimes in countries where they were previously absent.

The quality then recovers in the final decades of the twentieth century. Throughout these eras unevenness persists, meaning that even as electoral democracy has strengthened in some countries, there are subnational units in those countries that suffer from poor quality elections. (And, in the authoritarian countries, some subnational units have higher quality elections than the country average.) Likewise, while immense improvements have been realized in the overall level of civil liberties in countries throughout the world, unevenness has declined only slightly, as revealed in Figure 2. Here, the solid line—representing the mean value across all countries in the sample in a particular year—shows that civil liberties expanded in countries over the latter half of the twentieth century. Civil liberties is measured by an index of multiple V-Dem questions about different civil liberties.<sup>5</sup>

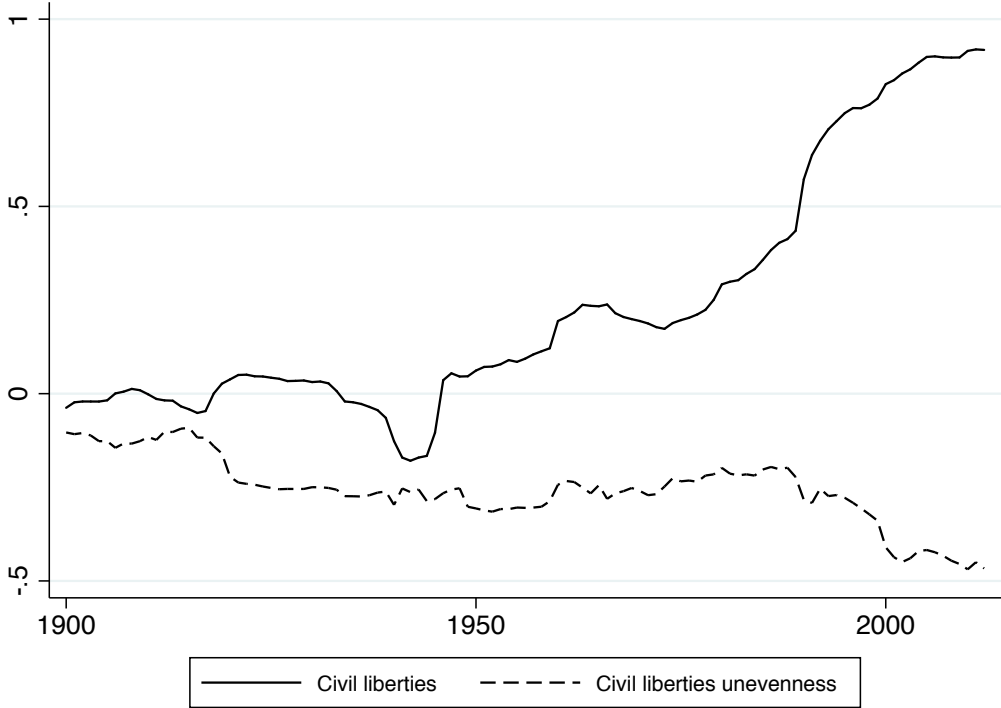
**Figure 4: Free and Fair Elections**



*Note: This figure provides the annual, global means. It uses interval measures helpful to examining relative change across time, but not to interpreting absolute values. The full scale extends from -3 to 3.*

<sup>5</sup> This index is formed with the 15 variables that do not distinguish between men and women and appear in the Civil Liberty section ([Coppedge, et al. 2015b](#)).

Figure 5: Civil Liberties



*Note: This figure provides the annual, global means. It uses interval measures helpful to examining relative change across time, but not to interpreting absolute values. The full scale extends from -3 to 3.*

## V. Tests

The hypotheses introduced in Section II are tested in Table 1. The first half of the table is devoted to unevenness in civil liberties (Models 1-5) and the second half to unevenness in free and fair elections (Models 6-10). The two sections of the table replicate each other, with the exception of the dependent variable.

**Table 1: Civil Liberties Unevenness (CL) and Subnational Election Unevenness (FF)**

Outcome	CL 1	CL 2	CL 3	CL 4	CL 5	FF 6	FF 7	FF 8	FF 9	FF 10
<b>Elevation (b)</b>	0.381** [0.189]	0.336* [0.196]	0.363** [0.181]	0.360* [0.187]	0.234 [0.218]	0.490** [0.197]	0.439** [0.206]	0.419** [0.202]	0.451** [0.201]	0.328 [0.240]
<b>Ethnic fract (b)</b>		1.333*** [0.474]	0.916* [0.484]	0.890* [0.484]	0.794 [0.557]		0.852* [0.494]	0.704 [0.527]	0.590 [0.489]	0.676 [0.587]
<b>Geo. inequality (w)</b>					0.086 [0.208]					-0.000 [0.184]
<b>Geo. inequality (b)</b>					0.113* [0.061]					0.117* [0.063]
<b>Population (w)</b>	-0.053 [0.284]	-0.046 [0.285]	0.094 [0.285]	0.077 [0.287]	0.444 [0.697]	0.291 [0.309]	0.288 [0.308]	0.142 [0.310]	0.137 [0.315]	0.738 [0.588]
<b>Population (b)</b>	0.159** [0.080]	0.146** [0.074]	0.147** [0.071]	0.132* [0.070]	0.040 [0.090]	0.123 [0.078]	0.119 [0.075]	0.115 [0.080]	0.076 [0.077]	0.738 [0.588]
GDPpc, ln (w)	-0.149 [0.098]	-0.151 [0.099]	-0.133 [0.104]	-0.125 [0.104]	-0.117 [0.165]	-0.097 [0.106]	-0.099 [0.106]	-0.045 [0.106]	-0.065 [0.106]	0.065 [0.145]
GDPpc, ln (b)	-0.135 [0.198]	-0.150 [0.205]	0.088 [0.188]	0.082 [0.214]	0.157 [0.242]	-0.076 [0.212]	-0.090 [0.203]	0.008 [0.214]	-0.019 [0.215]	-0.175 [0.265]
Corruption (w)			-0.092** [0.039]	-0.080* [0.041]	-0.011 [0.046]			-0.025 [0.045]	-0.046 [0.044]	-0.012 [0.095]
Corruption (b)			-0.292*** [0.079]	-0.274*** [0.092]	-0.294*** [0.099]			-0.121 [0.084]	-0.105 [0.093]	-0.030 [0.047]
Democracy (w)				-0.279 [0.483]	-0.304 [0.643]				1.179** [0.529]	0.638 [0.745]
Democracy (b)				2.952 [2.375]	3.432 [2.799]				8.191*** [2.488]	7.764** [3.189]
Democracy <sup>2</sup> (w)				0.031 [0.520]	-0.038 [0.613]				-0.791 [0.551]	-0.661 [0.685]
Democracy <sup>2</sup> (b)				-3.118 [2.566]	-4.084 [3.025]				-8.011*** [2.704]	-8.087** [3.505]
Regions										
E. Eur, C Asia (b)	0.099 [0.397]	-0.089 [0.405]	-0.677 [0.417]	-0.835** [0.416]	-0.509 [0.461]	0.542 [0.416]	0.427 [0.409]	0.056 [0.444]	-0.111 [0.456]	0.013 [0.484]
Latin America (b)	1.845*** [0.400]	1.555*** [0.431]	0.852** [0.428]	0.757* [0.453]	0.583 [0.516]	1.498*** [0.404]	1.321*** [0.420]	1.000** [0.458]	0.861* [0.467]	0.785 [0.553]
MENA (b)	1.320*** [0.428]	1.087** [0.440]	0.601 [0.432]	0.602 [0.474]	0.997* [0.522]	1.477*** [0.456]	1.350*** [0.449]	1.066** [0.454]	1.305** [0.529]	1.189** [0.600]
Africa (b)	0.983* [0.513]	0.331 [0.576]	0.202 [0.528]	0.195 [0.559]	0.768 [0.619]	1.519*** [0.551]	1.091* [0.590]	0.977* [0.582]	1.238** [0.587]	1.059 [0.673]
East Asia (b)	0.226 [0.579]	0.403 [0.569]	-0.255 [0.571]	-0.200 [0.582]	0.448 [0.745]	-0.221 [0.608]	-0.118 [0.595]	-0.231 [0.605]	0.114 [0.615]	-0.013 [0.823]
SE Asia (b)	1.491*** [0.541]	1.190** [0.559]	0.802 [0.560]	0.796 [0.565]	1.126* [0.611]	1.943*** [0.581]	1.750*** [0.566]	1.517** [0.609]	1.803*** [0.587]	1.986*** [0.823]
South Asia (b)	1.646*** [0.624]	1.324** [0.625]	1.108* [0.598]	1.045 [0.637]	2.210*** [0.718]	1.225* [0.631]	0.999 [0.633]	0.873 [0.641]	0.926 [0.661]	1.694** [0.734]
Caribbean (b)	0.511 [1.164]	0.626 [1.151]	-0.304 [1.138]	-0.416 [1.105]	-0.241 [1.153]	2.401** [1.155]	2.455** [1.200]	1.999 [1.225]	1.861 [1.136]	1.813 [1.289]
<b>Years</b>	110	110	110	110	15	110	110	110	110	15
<b>Countries</b>	138	137	137	137	129	134	133	133	133	120
<b>Observations</b>	9431	9411	9054	8815	1892	8218	8198	8029	7817	1715
<b>AIC</b>	17087.72	17061.24	15791.34	15136.74	1434.47	12517.03	13482.82	13038.89	12536.93	1668.32
<b>BIC</b>	17996.00	17976.41	16715.75	16086.01	1661.86	14407.81	14380.30	13947.71	13470.13	1891.64
<b>Deviance</b>	16833.72	16805.24	15531.34	14868.74	1352.48	13263.03	13226.82	12778.89	12268.93	1586.32
<b>Log-likelihood</b>	-8416.85	-8402.62	-7765.68	-7434.36	-676.24	-6631.52	-6613.40	-6389.45	-6134.49	-793.16

Within-between models. For time-varying variables: (w) = “within” variables are group mean centered. (b) = “between” variables are grand mean centered. All right-side variables measured at t-1. Western Europe & North America is the reference group for regions. All models include year fixed effects and incorporate measurement error for V-Dem variables. \*\*\*( $p < .01$ ) \*\*( $p < .05$ ) \*( $p < .10$ )

We test our hypotheses using time-series cross-sectional data from 138 countries between 1900 and 2010. In order to consider the effect on unevenness of both time-varying and time-invariant variables, we employ a ‘within-between’ random-effects model (Bell and Jones 2015;



Mundlak 1978). For time-varying variables, we estimate both a within-country effect (i.e. by group mean centering) and a between-country effect (i.e. by grand mean centering). For time-invariant variables, only the between-country effect is estimated. We include year fixed effects in all models.

Our benchmark models also incorporate measurement uncertainty for all V-Dem variables. Although measurement uncertainty is rarely taken into account, we do so here by running each model on 900 draws from the posterior distribution of each V-Dem variable (including both left- and right-side variables). For comparison, we also run each model using single point estimates from the V-Dem measurement model (see Table A6), producing very similar coefficients but with much smaller standard errors. Incorporating measurement uncertainty increases our confidence that our results reveal true relationships.

In devising plausible specifications we begin with those variables assumed to be most exogenous. Models 1 and 6 include two such factors—Elevation and Population (logged). Elevation is significant in the predicted direction in both benchmark models, confirming that countries with more rugged terrain experience greater unevenness across regions. The between-effect of Population is also positive in both models (and significant in the case of civil liberties), indicating that larger countries also tend to experience greater unevenness.<sup>6</sup> When measurement uncertainty is not taken into account Population is also significant for elections (Table A6).

Models 2 and 7 add Ethnic Fract. As hypothesized, the results indicate a positive and statistically significant association between ethnic fractionalization and unevenness. The inclusion of this factor improves model-fit relative to Models 1 and 7 only somewhat, presumably because ethnic fractionalization is endogenous to topography and population size.

Models 5 and 10 test Geo Inequality. The samples in this analysis are restricted to a decade and a half because of limitations of the data. Nonetheless, these measures prove robust in both models. Greater variance in gross domestic product across geographic cells corresponds to greater unevenness in the quality of elections and respect for civil liberty.

In developing these benchmark models, we experimented with the inclusion of other variables. In earlier analyses, we consistently found that typical measures of a state's ability to broadcast power did not account for unevenness. These measures included the World Governance Indicators (excluding the one about democracy), the World Bank's data on tax

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<sup>6</sup> As expected, within-effects are not significant because population changes slowly over time, whereas the difference in population between countries is consistently large. The same logic holds true for the findings for geographic inequality. We found that population density does not influence unevenness as population size does.

revenue as a percentage of GDP, Kugler's relative political extraction indicator, and Putterman's measure of the presence of a supra-tribal polity within the present-day boundaries of countries. Here in models 1 and 6 we also introduced GDP per capita (logged) to illustrate that, despite many studies indicating that a country's wealth affects regime type and states' abilities to govern, country wealth does not account for unevenness. Although the within-effect of GDP per capita negative in most models, it is not statistically significant under any specification, once we account for measurement uncertainty. Because GDP per capita is not consistently associated with unevenness, it is evident that other factors drive the relationship. The negative findings for traditional state measures and GDP bolster our argument that, regardless of state wealth and other measures of state strength, it is more difficult to broadcast power over a rugged country with a large population than a topographically more forgiving country with a small population.

While our theory and models are focused on exogenous factors, we did find support for one endogenous influence. Models 3 and 8 add *Corruption*, which is measured using an index comprised of V-Dem measures about political corruption. Because of the coding of the component variables, a high score on this index indicates a low level of corruption. The coefficient is negative in all models and statistically significant in the case of civil liberties unevenness. This factor also dramatically improves model fit. Although an endogenous factor, it is consistent with our theory: corruption can reduce a national government's ability to broadcast power because corrupt bureaucrats and subnational officials will not carry out directives when they conflict with schemes for personal enrichment or they will manipulate their implementation for personal gain.

We suspected that unevenness was more likely to occur under certain national regime types, by definition rather than due to a causal relationship. For that reason, we excluded it from our theoretical framework but test it here. Models 4 and 9 add *Democracy* and *Democracy*<sup>2</sup>, as measured by the V-Dem Electoral Democracy index and its quadratic, respectively. (See Table A1 for details.) Results show that democracy has a curvilinear relationship to unevenness (particularly in the case of elections), with the greatest unevenness occurring near the middle of the democracy scale. It is important to note that the relationship between country-level democracy and cross-regional dispersion is apt to be circular. A region that lags behind, or forges ahead, will affect a country's overall score just as a country's overall score may affect the status of particular regions. In particular, because democracy is a constrained scale (in fact, if not also in principle) there is greater room for variability when a country occupies a middle position. In this sense also, we would do well to regard the relationship between country-level democracy and within-country unevenness as a descriptive, rather than causal, relationship.

We have shown (Section IV) that unevenness is not limited to particular regions of the world. However, it could be that some parts of the world, by virtue of a shared culture, religion, or historical experience, are more prone to unevenness than others. Indeed, one might infer from the focus of many subnational studies – many of which examine Latin American countries or Russia – that these regions are more susceptible to unevenness than others.

To measure these complex cultural and historical features we rely on regional dummies for Western Europe and North America, Eastern Europe and Central Asia, Latin America, Middle East and North Africa (MENA), Sub-Saharan Africa, East Asia, Southeast Asia, South Asia, and the Caribbean. We find that, compared to Western Europe and North America—a region of the world where unevenness is rarely identified—unevenness is significantly more likely to be found in Latin America, MENA, Sub-Saharan Africa, Southeast Asia, and South Asia. Existing literature does not provide guidance on this issue, in part, because it is dominated by work in Latin America and Russia. It is possible that we omitted a variable that could explain greater levels of unevenness in all these regions, but, due to the diversity of the regions and the many alternative explanations we test (below), we suspect that there might be idiosyncratic factors that operate within particular regions. Either way, our analysis boosts confidence that the factors we have identified are important determinants of unevenness, even though there is still more variation left to explain.<sup>7</sup>

Naturally, there are alternate approaches one might take to modeling the complex relationships of theoretical interest. One might include a lagged dependent variable rather than year dummies in order to model time-dependent relationships and block potential confounders. One might employ pooled ordinary least squares or between-effects ordinary least squares in order to emphasize the cross-sectional component of the analysis. This makes a certain amount of sense with respect to fixed covariates such as those measuring geography or ethnicity. Tests conducted with these estimators confirm the results posted in Table 1—although naturally the size of the estimated coefficients depends upon the structure of the model. We also found that these factors remain influential across different regime types.

A final concern is measurement error. While Elevation and Population seem fairly secure, one might wonder about measurements of concepts such as ethnic fractionalization, democracy,

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<sup>7</sup> As additional tests of culture and history, we include the percent of the population born into a Protestant family, the percent of the population born into a Muslim family, and, as a proxy for history as an English colony, whether English common law is the origin of company law or the commercial code. No results were consistent and significant.

and corruption. Reassuringly, alternate measures of ethnic fractionalization (Fearon 2003) and democracy (Polity2 from the Polity IV dataset) show identical patterns, suggesting that the results posted in Table 1 are not the product of idiosyncratic errors in measurement (though naturally we cannot rule out systematic errors in measurement).

Corruption is more complicated, as there are no other comprehensive measures of corruption stretching back through the twentieth century. Since this index is based on expert judgments from the same project, though not necessarily the same coders, as are the outcomes of interest one might suspect that the association is spurious, a product of common impressions of a country that inform the coding for both indices. Note, however, that whatever underlying factor might be driving these results must be time-varying, as the relationship persists in fixed-effect models. Equally important, we do not find a relationship between unevenness and other indices of democracy and governance produced by the V-Dem project. Specifically, when tested in models 4 and 9, we find no relationship between unevenness and indices of property rights, judicial independence, rule of law, or public administration. This suggests that it is the specific content of the Corruption measure—not some generic feature of the data collection process—that accounts for the observed covariation.

## VI. Alternate Explanations and Tests

These findings support our theoretical framework, which posits that subnational regime variation is driven primarily—though of course not exclusively—by societal heterogeneity and structural challenges to the state’s ability to govern the periphery. In order to show that these factors are fundamental, and not disturbed by or overwhelmed by additional factors, we offer some preliminary tests of alternate hypotheses. These tests also enable us to assess whether a variable omitted in our models might be causing social heterogeneity and other challenges to state power as well as unevenness. The alternative hypotheses concern modernization, the resource curse, inequality, federalism, and electoral and party rules.

Each general hypothesis is tested with one or several variables, as shown in Table 2. For each variable, we indicate the direction of the expected causal effect ( $H_i$ ). Next, we indicate the statistical models from Table 2 that are used to test that variable. We choose one minimal specification, which includes only basic geographic and demographic factors, and one maximal specification, which includes variables measuring sociological and political institutions. For each model, we display the number of observations (N), coefficient ( $\beta$ ), and standard error (SE), along with asterisks marking the approximate p value if it surpasses traditional thresholds of statistical

significance. Two sets of tests are included for each variable, one focused on unevenness in the freeness and fairness of subnational elections and the other on unevenness in government officials' respect for civil liberties. In the final column, we summarize the evidence of these four tests for and against each hypothesis. Passing a statistical threshold counts as evidence for a hypothesis only if it is in the expected direction. Finally, unlike in Table 1, these models do not incorporate measurement uncertainty for V-Dem variables, producing smaller standard errors than what we would find otherwise. (See Table A3 in the appendix for a direct comparison with our benchmark models).

**Table 2: Additional Factors**

	<u>H<sub>1</sub></u>	<u>Unevenness: Civil liberties</u>			<u>Unevenness: Elections</u>			<u>Result</u>
		M	N	$\beta$ /SE	M	N	$\beta$ /SE	
<b>Modernization</b>								
Urbanization (within)	-	1	9620	-0.617/[0.140]***	6	8422	0.236/[0.135]*	?
		4	8228	-0.848/[0.152]***	9	7473	0.681/[0.143]***	
Urbanization (between)	-	1	9620	-1.423/[0.833]*	6	8422	1.055/[0.808]	N
		4	8228	-1.426/[0.766]*	9	7473	1.186/[0.767]	
<b>Resource curse</b>								
Mineral wealth (within)	+	1	8157	0.000/[0.000]	6	7287	-0.000/[0.000]	N
		4	7183	-0.000/[0.000]	9	6563	-0.000/[0.000]	
Mineral wealth (between)	+	1	8157	-0.000/[0.000]	6	7287	-0.000/[0.000]	N
		4	7183	-0.000/[0.000]	9	6563	0.000/[0.000]	
<b>Inequality</b>								
Income inequality (within)	+	1	5280	-0.001/[0.001]	6	4858	-0.002/[0.001]	N
		4	4832	-0.003/[0.001]**	9	4501	-0.003/[0.001]***	
Income inequality (between)	+	1	5280	0.004/[0.014]	6	4858	0.026/[0.014]*	N
		4	4832	-0.001/[0.012]	9	4501	0.023/[0.014]	
Family farms (within)	-	1	6295	0.004/[0.001]***	6	5592	0.005/[0.001]***	N
		4	5491	0.003/[0.001]***	9	4990	0.005/[0.001]***	
Family farms (between)	-	1	6295	0.002/[0.006]	6	5592	0.011/[0.005]**	N
		4	5491	0.010/[0.005]*	9	4990	0.015/[0.005]***	
<b>Federalism</b>								
Federalism (P/T) (between)	+	1	1786	0.278/[0.347]	6	1736	-0.308/[0.289]	N
		4	1661	0.260/[0.335]	9	1625	-0.267/[0.266]	
Federalism Henisz (between)	+	1	4864	0.304/[0.399]	6	4257	-0.043/0.383]	N
		4	4227	0.020/[0.369]	9	3794	-0.295/[0.371]	
Federalism (IEAP) (between)	+	1	4132	0.065/[0.111]	6	3658	0.322/[0.110]***	N
		4	3667	-0.021/[0.101]	9	3339	0.315/[0.103]***	
Federalism (Polity III) (between)	+	1	6179	0.268/[0.160]*	6	5519	0.269/[0.144]*	?
		4	5390	0.182/[0.144]	9	4917	0.218/[0.139]	
Local authority (between)	+	1	1499	0.064/[0.296]	6	1441	0.047/[0.306]	N
		4	1443	0.268/[0.277]	9	1393	0.314/[0.264]	
Primary subnational units (between)	+	1	2128	0.000/[0.003]	6	1969	0.003/[0.003]	N
		4	2023	0.002/[0.003]	9	1892	0.004/[0.003]	
Secondary subnational units (between)	+	1	2156	0.000/[0.000]	6	1970	0.000/[0.000]**	N
		4	2033	0.000/[0.000]	9	1879	0.000/[0.000]**	
<b>Electoral/Party rules</b>								
Malapportionment (between)	+	1	5579	0.212/[2.357]	6	5269	-1.065/[1.953]	N
		4	5090	1.036/[2.165]	9	4879	0.859/[1.572]	
PR (between)	-	1	2992	-0.258/[0.197]	6	2855	0.217/[0.207]	N
		4	2931	-0.082/[0.178]	9	2798	0.357/[0.200]*	
PR closed-list (between)	-	1	4495	-0.062/[0.116]	6	4293	-0.159/[0.105]	N
		4	4268	-0.063/[0.103]	9	4091	-0.142/[0.101]	
Candidate selection (within)	+	1	9562	-0.072/[0.009]***	6	8371	0.079/[0.009]***	?
		4	8228	-0.041/[0.011]***	9	7473	0.026/[0.011]***	
Candidate selection (between)	+	1	9562	-0.114/[0.089]	6	8371	-0.028/[0.089]	N
		4	8228	-0.040/[0.090]	9	7473	-0.020/[0.091]	

$H_i$ : hypothesized relationship of  $Z$  to  $Y$  (+/-).  $N$ : observations  $M$ : model from Table 1.  $\beta/SE$ : coefficient/standard error  $p < .10$  (\*),  $p < .05$  (\*\*),  $p < .01$  (\*\*\*). *Result*: Y (hypothesis confirmed across most tests), N (hypothesis not confirmed across most tests), ? (evidence ambiguous). Note: These models do not incorporate measurement uncertainty for V-Dem variables (and thus standard errors are smaller).

*Modernization.* Democracy is strongly correlated with economic development, which is often regarded as one of democracy's fundamental causes (Epstein, et al. 2006). It seems plausible that modernization might help homogenize subnational regimes within a country if either of the following mechanisms are operative. First, citizens are empowered when they have financial, human, and social capital, all of which are positively affected by economic development and all of which could promote a democratization of subnational institutions and practices over time. Second, economic development may enhance the national government's ability to broadcast its power, and thus bring subnational outliers into line.

We already tested GDP per capita above and found that it did not account for unevenness. Here we operationalize economic development as *Urbanization*. (Further details regarding this and other measures and their summary statistics can be found in Tables A1 and A3, respectively.) We find conflicting results, however: while urbanization is negatively associated with unevenness in the case of civil liberties, the relationship appears to be positive in the case of elections. We therefore reject modernization theory as an explanation of unevenness generally.

*Resource curse.* The resource curse literature suggests that natural resource endowments of oil, diamonds, or precious metals, for example, can hinder state capacity and the achievement of social equality, as well as democratization (Brollo, et al. 2013; Morrison 2013; Ross 2012). Thus, we might expect resource wealth to be positively associated with unevenness through both social heterogeneity and challenges to national government capabilities. To measure the resource curse we employ Haber and Menaldo's (2011) per capita indicator, labelled *Mineral wealth*. We find no evidence of a resource curse effect in any of our models.

*Inequality.* We have shown that geographically based inequality is associated with greater unevenness. Here we test an alternative hypothesis: overall inequality in a society may foster subnational regime variation. For this, we employ the traditional GINI coefficient of income inequality, as compiled by UNU-WIDER (*Inequality*). We also employ Vanhanen's measure of family farms as a share of agricultural holdings (*Family Farms*). This should provide a proxy for inequality in predominantly agricultural economies, which constituted much of the world over the course of the 20<sup>th</sup> century. Results shown in Table 2 offer no consistent support for this thesis. We find statistically significant results in only one model; other findings are significant but

in the opposite direction. So far as we can tell, inequality affects unevenness only if it is geographically based.

*Federalism.* Most studies of subnational democracy postulate, or at least implicitly assume, that unevenness across regions of a country is primarily a product of federal systems of government. This is reflected in the frequency by which federal states are selected for study; Argentina, Brazil, Mexico, Russia, and the United States are most commonly examined ([Beer 2003](#); [Behrend 2011](#); [Benton 2012](#); [Borges 2011](#); [Hale 2007](#); [Herrmann 2010](#); [Gervasoni 2010](#); [Giraudy 2015](#); [Gibson 2013](#); [Hill 1994](#); [Lankina and Getachew 2006](#); [Lawson 2000](#); [Magaloni, et al. 2007](#); [McMann and Petrov 2000](#); [Mickey 2015](#); [Montero 2010](#); [Moraski and Reisinger 2003](#)). The central idea is that greater autonomy allows for greater subnational diversity.

Because of the conceptual and empirical complexity of federalism we adopt several empirical indicators—*Federalism (P/T)*, *Federalism Henisz*, *Federalism (LAEP)*, and *Federalism (Polity III)*, developed by Persson and Tabellini ([2003](#)), Henisz ([2000](#)), the Institutions and Elections Project, and Polity III, respectively. We also include a direct measure of whether states and provinces are granted power over taxing, spending, or legislating, a dummy variable called *Local authority*, which is coded by the Database of Political Institutions (DPI). Finally, we include measures for the total number of primary and secondary administrative subdivisions of a country, *Primary subnational units* and *Secondary subnational units*. The tests do not show the expected relationship to unevenness; indeed, the estimated coefficient is in the opposite direction in several models and only significant in four of the 20 tests with the first five measures. The coefficient for the number of units is significant in only one of four models, for secondary units. To test the robustness of these findings, we restricted the sample to countries in the middle of the democracy scale (i.e. between -8 and +8 on the Polity2 index) in case the presence of federalist democracies and autocracies was masking the influence of federalism on unevenness in hybrid regimes. But, again we found no relationship between federalism and unevenness.

*Electoral and Party Rules.* The subnational democracy literature suggests that local leaders are sometimes able to maintain non-democratic regimes by ensuring that national leaders do not get drawn into local political conflicts, an event that might compel them to enforce national laws and disrupt local power structures ([Behrend 2011](#); [Benton 2012](#); [Gibson 2013](#)). Thus, we assume that when conflict is localized it will generate greater unevenness across regions. Since electoral and party rules help to structure competition in a way that either nationalizes or localizes political conflict, they may have an important impact on the overall level of unevenness.

For example, malapportionment in national legislatures may afford nondemocratic subnational leaders additional protection by enabling those governing overrepresented territories

to exercise greater influence in national politics (Gibson 2013, 164). *Malapportionment* is measured by summing the difference between each district's share of legislative seats and its population (Samuels and Snyder 2001). Proportional representation (PR) electoral rules, especially if combined with a closed party list, are likely to centralize power within political parties by enhancing national party leaders' influence over candidate selection and by encouraging party-centered, rather than candidate-centered, voting decisions (Carey and Shugart 1995). This is measured with DPI's binary *PR* measure and Gerring and Thacker's *PR closed-list* trichotomous measure that incorporates district magnitude and ballot structure. As a similar measure, we use a question from the V-Dem survey pertaining to how centralized *Candidate selection* is across all political parties. Conceivably a PR, or, more generally, a centralized candidate selection, system would reduce subnational leaders' national influence because they cannot put loyalists in national offices as easily. Yet, none of these variables demonstrates a consistent relationship to unevenness in the predicted direction, as shown in Table 2.

In sum, we considered a variety of alternative explanations, and the tests confirmed none of them. These negative results suggest that the factors in our theory are fundamental to subnational regime variation.

## VII. Conclusions

In examining subnational regime variation, this article makes three contributions. First, it demonstrates theoretically and empirically how social heterogeneity and other factors undermining the national government's ability to broadcast power promote subnational regime variation. Whereas much of the existing literature examines more proximate, endogenous causes, this article reveals underlying, exogenous factors. Our empirical results demonstrate that countries that are rugged, more populous, and more ethnically and economically diverse are more likely to exhibit subnational regime variation. Our theoretical framework proposes how this collection of fundamental geographic and sociological characteristics diversifies the political practices and institutions in countries while also weakening the ability of national governments to impose uniformity. Statistical analysis using multilevel models and the innovation of incorporating measurement uncertainty provides support for our theory.

In addition, those factors not highlighted by our theory—our negative findings—are notable. We show that many factors that might be expected to bear a relationship to subnational regime variation show no such relationship, or only a tenuous relationship. Of course, we cannot discount the possibility of measurement error or errors in modeling these complex macro-level



relationships. Likewise, available indicators of most factors of theoretical interest constrain us from measuring subnational variation in those factors. This is one of the costs of imposing a crossnational format on a subject that often begs subnational data, and where the latter can usually be collected only in a painstaking fashion across one or several cases.

Second, the article reveals the scope of the phenomenon. Something that previous works have been unable to do due to the limited number of countries, parts of the globe, state structures, and eras examined. We show that unevenness is common in all regions of the world. Our findings also suggest that unevenness exists in both unitary and federal states. This finding likely relates to our point about the causal importance of the national government being able to extend its power into the periphery. Just because a country has a unitary system of government with relatively great powers granted to national leaders does not mean that they have the ability to act on those *de jure* powers. Finally, this paper has shown that unevenness is not a contemporary phenomenon, but something that existed during different democratization waves and reversals and despite the influences of different eras, such as the post-war periods and the Cold War.

Finally, our development of benchmark models and introduction of global measures of unevenness from the V-Dem dataset will hopefully encourage new lines of inquiry. Looking forward, in-depth country studies will continue to be important for developing new hypotheses and revealing causal mechanisms. Our models and measures will be useful for the testing of hypotheses and uncovering crossnational patterns. The models and measures can also help us to examine additional questions, for example, how is unevenness overcome and when does it result in democratic reversals. Ultimately, this crossnational approach, coupled with in-depth country studies, can improve our understanding of regime type and democratization by illuminating how politics outside of national capitals impacts entire countries.

# Appendix

**Table A1: Variable Definitions**

## **Outcomes**

**Subnational election unevenness.** Does the freeness and fairness of subnational elections vary across different areas of the country? *Clarification:* Subnational elections refer to elections to regional or local offices, as specified above. 0: No. Subnational elections in most or all areas of the country are equally free and fair (or, alternatively, equally not free and not fair). 1: Somewhat. Subnational elections in some areas of the country are somewhat more free and fair (or, alternatively, somewhat less free and fair) than subnational elections in other areas of the country. 2: Yes. Subnational elections in some areas of the country are significantly more free and fair (or, alternatively, significantly less free and fair) than subnational elections in other areas of the country. Source: V-Dem. Project Manager Kelly McMann. *v2elsnlsff*

**Civil liberties unevenness.** Does government respect for civil liberties vary across different areas of the country? 0: No. Government officials in most or all areas of the country equally respect (or, alternatively, equally do not respect) civil liberties. 1: Somewhat. Government officials in some areas of the country respect civil liberties somewhat more (or, alternatively, somewhat less) than government officials in other areas of the country. 2: Yes. Government officials in some areas of the country respect civil liberties significantly more (or, alternatively, significantly less) than government officials in other areas of the country. Source: V-Dem. Project Manager Kelly McMann. *v2chgunev*

## **Explanatory Factors**

**Candidate selection.** How centralized is legislative candidate selection within the parties? Coding: (0) National legislative candidates are selected exclusively by national party leaders, (1) National legislative candidate selection is dominated by national party leaders but with some limited influence from local or state level organizations, (2) National legislative candidates are chosen through bargaining across different levels of party organization, (3) National legislative candidates are chosen by regional or state-level organizations, perhaps with some input from local party organizations or constituency groups, (4) National legislative candidates are chosen by a small cadre of local or municipal level actors, (5) National legislative candidates are chosen by constituency groups or direct primaries. Source: V-Dem. Project Manager Allen Hicken. *v2psnslnl*

**Corruption.** Five V-Dem indicators (*v2exbribe v2exembez v2exthftps v2lgcrrpt v2juorrdc*) are included in a principal components factor analysis, the first component of which provides the index. Scale: Higher value means less corruption. Source: V-Dem. Project Manager Jan Teorell. *v2exbribe v2exembez v2exthftps v2lgcrrpt v2juorrdc*

**Democracy.** An index measuring the extent to which the ideal of electoral democracy is achieved in its fullest sense. The index is formed by first averaging the index of freedom of expression (formed from point estimates from a Bayesian factor analysis model of indicators for print/broadcast censorship effort, internet censorship effort, harassment of journalists, media self-censorship, freedom of discussion for men and women, and freedom of academic and cultural expression) and the index for alternative sources of information (formed from point estimates from a Bayesian factor analysis model of indicators for media bias, print/broadcast media critical, and print/broadcast media perspectives). The result is then averaged with the electoral component index, which is

formed by multiplying electoral indices measuring (thick) freedom of association, suffrage, clean elections, and (de jure) elected executives. Scale: Interval. Source: V-Dem. *v2x\_polyarchy*

**Democracy<sup>2</sup>.** Quadratic form of Democracy variable. See above.

**Elevation.** Average elevation across regions within a country. Source: Michalopoulos 2012. *Elevation*

**Ethnic fract.** An index of ethnic heterogeneity reflecting the probability that two randomly selected individuals from a country are from two different groups, based on ethnic data from *Encyclopedia Britannica* and additional sources. Scale: value ranging from 0 to 1, with a greater value indicating greater diversity in a country. Source: Alesina, et al. 2003. *Ethnic\_fractionalization\_Alesina*

**Family farms.** Measures family farms' percent share of total agricultural holdings in a particular country. Source: Vanhanen 1997. *effarm*

**Federalism Henisz.** Measures whether independent sub-federal entities (states, provinces, regions, etc.) impose substantive constraints on national fiscal policy. Coding: (1) if sub-federal entities do impose such constraints, (0) otherwise. Source: Henisz 2000. *Federalism\_Henisz*

**Federalism (IEAP).** Examines relationship between the central and regional governments. Coding: (1) Unitary, (2) Confederal, (3) Federal. Source: Clark and Regan 2011. *ieap\_ifs*

**Federalism (P/T).** Variable indicating whether a country is a federation. Coding: (1) if the country has a federal political structure, (0) otherwise. Source: Persson and Tabellini 2003. *pt\_federal*

**Federalism (Polity III).** Centralization of state authority: 1=unitary; 2=intermediate; 3=federal. Source: Jagers and Gurr 1995. *PolityIII\_Fed\_zeroed*

**Geo Inequality.** G-Econ data estimate gross output per grid cell (i.e. 1-degree longitude by 1-degree latitude). Geographic inequality is measured by dividing the standard deviation across grid cells by the average output per grid cell in each country. Missing data is interpolated within each time series. For the data to match up with subnational political units, one would need to fit each grid cell into a region, splitting information within cells wherever they straddle a border. Such an exercise demands GIS data on the location of regional borders across a large sample of countries, for which purpose extant datasets are currently insufficient. Source: Nordhaus and Chen 2011. *geo\_uneven\_econ\_ipo*

**GDPpc.** Gross domestic product (GDP) per capita. Source: Maddison 2010. *emgdppc*

**Income inequality.** Distribution of income expressed as a Gini coefficient (a.k.a. Gini index, Gini ratio). Scale: value from 0 and 100, with a greater value indicating greater income inequality. Source: UNU-Wider 2008. *eginini*

**Local authority.** Do the states/provinces have authority over taxing, spending, or legislating? Coding: (1) if states/provinces have authority over at least one of these three functions, (0) otherwise. Source: Beck, et al. 2001. *dpi\_author*

**Malapportionment.** Measures the degree of malapportionment of seats in the lower chambers of national legislatures. Malapportionment is a discrepancy between an area's share of legislature seats and its share of the population. Scale: value ranging from 0 to 1, representing the absolute value of the difference between each district's share of legislative seats and population, summed, then divided by two. Source: Samuels and Snyder 2001.

*Malapportionment*

**Mineral wealth.** Real value of petroleum, coal, natural gas, and metals produced per capita. Source: [Haber and Menaldo 2011](#). *e\_mipetgm*

**Population.** Measures the total population of countries. Source: [CLIO-Infra 2012](#). *e\_mipopula\_ln*

**Primary subnational units.** The total number of primary administrative subdivisions of a country. Source: [Statoids 2016](#). *PrimaryUnits*

**PR.** Coded 1 if an electoral system is classified as proportional; 0 otherwise. Source: DPI. *pr\_dpi*

**PR closed-list.** This is measured with a binary PR measure (DPI) and a trichotomous measure that incorporates district magnitude and ballot structure. Coding: 0 = majoritarian or preferential-vote; 1 = mixed-member majority (MMM) or block vote; 2 = closed-list PR. Source: [Gerring and Thacker 2008](#). *PR*

**Regions.** A dummy variable was created for each region: Eastern Europe and Central Asia (**E. Eur., C Asia**; includes Mongolia), **Latin America** (includes Cuba and the Dominican Republic), Middle East and North Africa (**MENA**; includes Israel and Turkey), sub-Saharan Africa (**Africa**), Western Europe and North America (includes Cyprus, Australia, and New Zealand), **East Asia**, South-east Asia (**SE Asia**), **South Asia**, and the **Caribbean** (includes Belize, Haiti, Guyana and Suriname). Source: [Quality of Government Standard Dataset 2013](#). *e\_regionpol*

**Secondary subnational units.** The total number of secondary administrative subdivisions of a country. Source: [Statoids 2016](#). *SecondaryUnits*

**Urbanization.** The ratio of urban population to total population within a country. Source: [CLIO-Infra 2012](#). *e\_miurbani*

**Note:** Variable names from the paper's dataset appear at the end of each entry.

Figure A1: Histogram of Subnational Election Unevenness

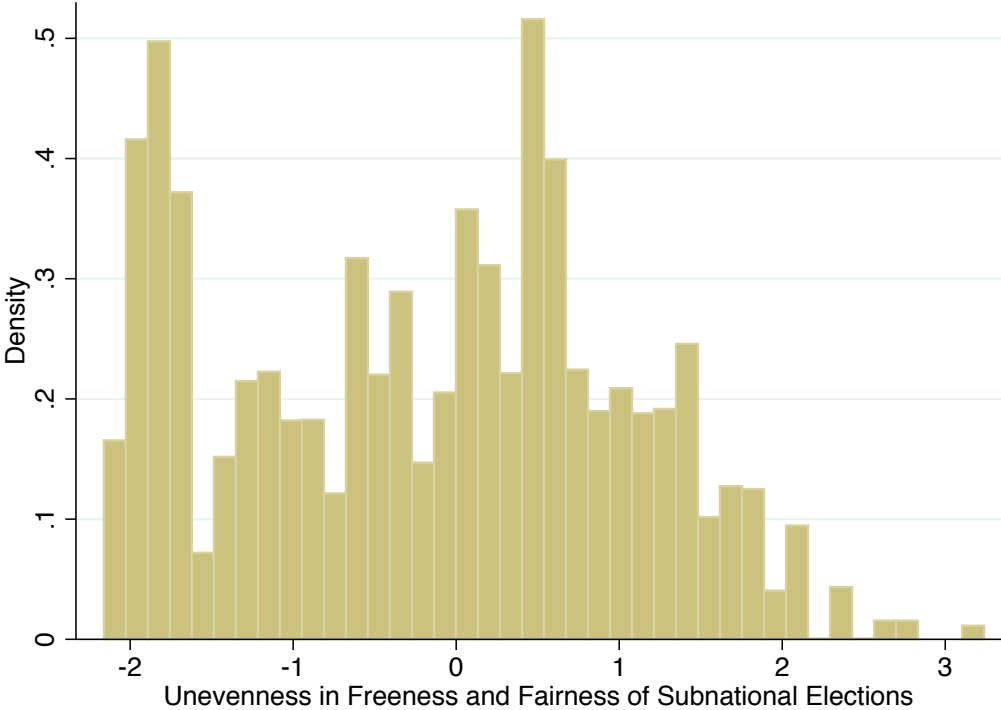
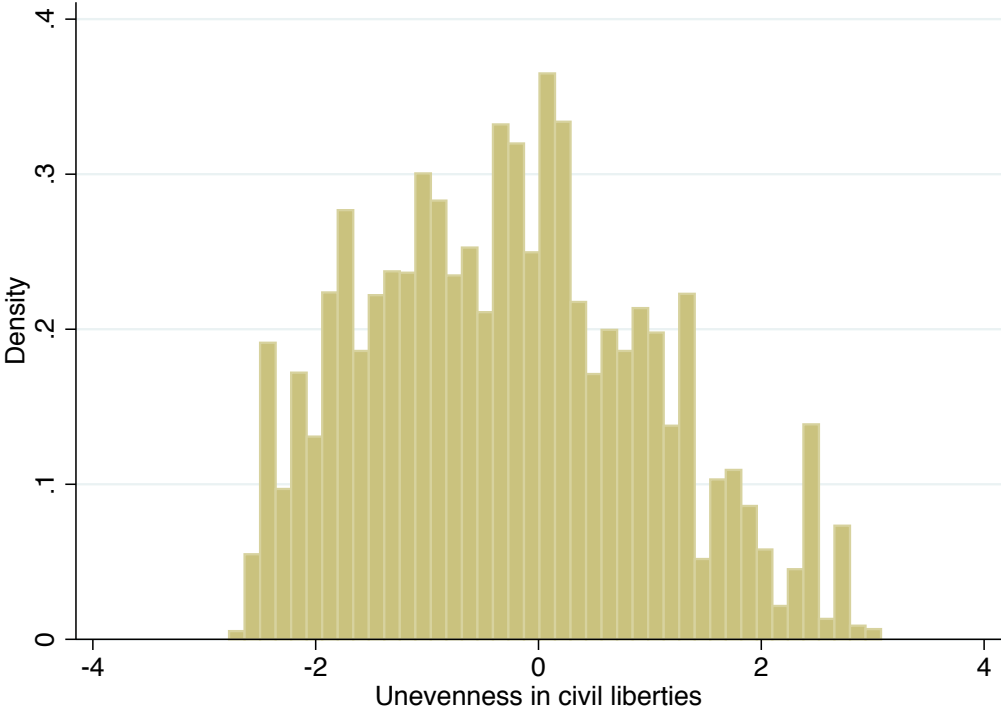


Figure A2: Histogram of Civil Liberties Unevenness



**Table A2: Descriptive statistics**

	<i>Obs.</i>	<i>mean</i>	<i>SD</i>	<i>min</i>	<i>max</i>
<b>Benchmark models</b>					
Subnational election unevenness	8,422	-0.218	1.215	-2.161	3.239
Civil liberties unevenness	9,620	-0.247	1.354	-2.777	3.075
Elevation (mean)	9,620	0.555	0.444	0.025	2.517
GDPpc (ln)	9,620	7.821	1.024	5.315	10.363
Population (ln)	9,620	16.062	1.438	11.035	21.009
Ethnic fract	9,599	0.433	0.264	0.002	0.930
Corruption	8,470	0.084	2.153	-4.294	4.630
Democracy	9,393	0.418	0.279	0.008	0.956
Democracy <sup>2</sup>	9,393	0.252	0.278	0.000	0.914
Geo inequality	2,072	2.265	1.853	0.660	14.265
<b>Modernization</b>					
Urbanization	9,620	0.424	0.230	0.013	0.974
<b>Resource curse</b>					
Mineral wealth	8,157	296.547	1,224.637	0	35,158.691
<b>Inequality</b>					
Income inequality	5,280	40.779	10.598	15	73.9
Family farms	6,295	39.765	24.154	0	98
<b>Federalism</b>					
Federalism (P/T)	1,786	0.242	0.429	0	1
Federalism ( <u>Henisz</u> )	4,864	0.055	0.228	0	1
Federalism (IEAP)	4,132	1.699	0.951	1	3
Federalism (Polity III)	6,179	1.336	0.708	1	3
Local authority	1,499	0.518	0.500	0	1
Primary subnational units	2,128	24.457	25.528	3	185
Secondary subnational units	2,156	326.810	541.043	15	3,142
<b>Electoral/Party rules</b>					
Malapportionment	5,579	0.063	0.058	0	0.262
PR	2,992	0.667	0.471	0	1
PR closed-list	4,495	0.790	0.936	0	2
Candidate selection	9,562	-0.126	1.402	-2.708	4.210
<b>Culture/Region</b>					
E. Eur, C Asia	9,620	0.106	0.308	0	1
Latin America	9,620	0.177	0.382	0	1
MENA	9,620	0.081	0.273	0	1
Africa	9,620	0.250	0.433	0	1
Western Europe and North America	9,620	0.226	0.418	0	1
East Asia	9,620	0.045	0.208	0	1
SE Asia	9,620	0.062	0.241	0	1
South Asia	9,620	0.046	0.209	0	1
Caribbean	9,620	0.007	0.081	0	1

**Table A3: Benchmark models without V-Dem measurement uncertainty**

Outcome	CL 1	CL 2	CL 3	CL 4	CL 5	FF 6	FF 7	FF 8	FF 9	FF 10
Elevation (b)	0.364** [0.160]	0.331** [0.154]	0.361** [0.143]	0.351** [0.144]	0.209 [0.149]	0.473*** [0.160]	0.436*** [0.158]	0.423*** [0.157]	0.440*** [0.150]	0.333* [0.176]
Ethnic fract (b)		1.316*** [0.375]	0.865** [0.363]	0.846** [0.360]	0.726* [0.378]		0.826** [0.381]	0.656* [0.391]	0.544 [0.369]	0.647 [0.443]
Geo. Inequality (w)					0.066 [0.107]					-0.036 [0.100]
Geo. Inequality (b)					0.118*** [0.041]					0.116** [0.047]
Population (w)	-0.060 [0.068]	-0.059 [0.069]	0.076 [0.066]	0.047 [0.068]	0.423 [0.327]	0.279*** [0.065]	0.272*** [0.065]	0.122* [0.066]	0.096 [0.066]	0.699** [0.312]
Population (b)	0.157** [0.062]	0.143** [0.060]	0.141** [0.055]	0.126** [0.056]	0.032 [0.061]	0.120** [0.060]	0.115* [0.060]	0.109* [0.059]	0.069 [0.056]	-0.016 [0.070]
GDPpc, ln (w)	-0.140*** [0.022]	-0.140*** [0.022]	-0.118*** [0.023]	-0.119*** [0.023]	-0.122*** [0.046]	-0.091*** [0.022]	-0.092*** [0.022]	-0.038* [0.023]	-0.062*** [0.023]	0.057 [0.054]
GDPpc, ln (b)	-0.124 [0.157]	-0.132 [0.151]	0.099 [0.148]	0.097 [0.164]	0.183 [0.168]	-0.070 [0.153]	-0.079 [0.151]	0.011 [0.157]	-0.008 [0.166]	-0.161 [0.195]
Corruption (w)			-0.112*** [0.008]	-0.097*** [0.009]	-0.002 [0.017]			-0.024*** [0.009]	-0.052*** [0.009]	-0.025 [0.020]
Corruption (b)			-0.298*** [0.059]	-0.277*** [0.067]	-0.290*** [0.069]			-0.120* [0.063]	-0.097 [0.067]	-0.099 [0.078]
Democracy (w)				-0.200 [0.124]	0.114 [0.259]				1.204*** [0.132]	0.989*** [0.330]
Democracy (b)				3.057* [1.842]	3.362* [1.961]				8.127*** [1.919]	7.927*** [2.307]
Democracy <sup>2</sup> (w)				-0.031 [0.132]	-0.614** [0.282]				-0.796*** [0.136]	-1.093*** [0.346]
Democracy <sup>2</sup> (b)				-3.220 [1.971]	-4.054* [2.091]				-8.039*** [2.046]	-8.278*** [2.455]
Regions										
E. Eur, C Asia (b)	0.106 [0.284]	-0.097 [0.280]	-0.673** [0.296]	-0.847*** [0.302]	-0.514* [0.301]	0.513* [0.272]	0.387 [0.274]	0.034 [0.312]	-0.147 [0.303]	-0.036 [0.339]
Latin America (b)	1.809*** [0.321]	1.508*** [0.320]	0.816** [0.328]	0.700** [0.329]	0.522 [0.344]	1.468*** [0.310]	1.283*** [0.318]	0.968*** [0.348]	0.811** [0.332]	0.705* [0.390]
MENA (b)	1.292*** [0.332]	1.060*** [0.332]	0.563* [0.331]	0.570 [0.360]	0.903** [0.375]	1.455*** [0.321]	1.339*** [0.329]	1.038*** [0.350]	1.248*** [0.363]	1.171*** [0.424]
Africa (b)	0.969** [0.406]	0.325 [0.432]	0.195 [0.404]	0.191 [0.408]	0.762* [0.423]	1.475*** [0.394]	1.060** [0.432]	0.930** [0.432]	1.180*** [0.415]	1.008** [0.489]
East Asia (b)	0.213 [0.464]	0.405 [0.449]	-0.244 [0.433]	-0.211 [0.439]	0.488 [0.524]	-0.225 [0.448]	-0.113 [0.445]	-0.201 [0.457]	0.091 [0.442]	0.001 [0.590]
SE Asia (b)	1.453*** [0.442]	1.149*** [0.434]	0.766* [0.418]	0.764* [0.425]	1.114*** [0.430]	1.867*** [0.428]	1.663*** [0.432]	1.440*** [0.444]	1.711*** [0.430]	1.885*** [0.508]
South Asia (b)	1.613*** [0.504]	1.276*** [0.495]	1.078** [0.462]	1.038** [0.458]	2.195*** [0.477]	1.155** [0.488]	0.930* [0.491]	0.801 [0.490]	0.876* [0.462]	1.612*** [0.540]
Caribbean (b)	0.543 [0.934]	0.691 [0.899]	-0.249 [0.859]	-0.390 [0.852]	-0.204 [0.860]	2.311** [0.902]	2.396*** [0.890]	1.936** [0.908]	1.773** [0.857]	1.709* [0.967]
Years	110	110	110	110	15	110	110	110	110	15
Countries	138	137	137	137	129	134	133	133	133	120
Observations	9431	9411	9054	8825	1894	8218	8198	8029	7827	1717
AIC	10443	10428	8930	8591	-287.8	7310	7294	6810	6425	88.09
BIC	11351	11343	9855	9540	-60.41	8200	8191	7719	7358	311.5
Deviance	10189	10172	8670	8323	-369.8	7056	7038	6550	6157	6.095
Log-likelihood	-5094	-5086	-4335	-4161	184.9	-3528	-3519	-3275	-3078	-3.047

Within-between models. (w) = “within” variables are group mean centered. (b) = “between” variables are grand mean centered. All right-side variables measured at t-1. Western Europe & North America is the reference group for regions. All models include year fixed effects. \*\*\*( $p < .01$ ) \*\*( $p < .05$ ) \*( $p < .10$ )



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