Scaling Up:
Demographics and Schumpeterian Democracy at Subnational Levels

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Abstract

In response to the perceived deficits of country-centered analysis, the study of subnational politics has flourished in recent years. However, most of this work focuses on a single country or region and a single level of government (usually provincial) and thus is subject to problems of unrepresentativeness and stochastic error.

In this study, we suggest an empirical approach and the beginnings of a theoretical framework by which to understand variation in subnational democracy on a global scale. The empirical approach relies on competitiveness in district-level contests. This indicator is regarded as a proxy for the freeness and fairness of elections and the extent of accountability at subnational levels and thus as a plausible outcome measure of electoral democracy. Using this outcome, we construct a global dataset that brings together district-level election results across government levels from a wide range of countries stretching across two centuries.

Our theoretical argument focuses on the demographic underpinnings of electoral democracy. In contrast to the classical tradition of democratic theory, we argue that the size of an electorate has a positive impact the quality of democracy. Specifically, we show that larger (more populous) districts are more competitive. The reasons for this, we argue, hinge on several factors: (1) the power and prominence of the office, (2) the number of potential challengers, (3) the diversity of preferences among constituents, (4) the number of political and nonpolitical organizations, and (5) the representative/constituent relationship. Although by no means the only factor influencing the quality of democracy, demography is an important and persistent factor and one largely neglected in the extant literature.

Political science has focused its analytic and empirical tools on the nation-state for the past two centuries, a focus that is problematic in several respects. First, many countries are highly decentralized (Rodden 2004) and in others the central government is so weak that most governing tasks devolve to subnational units (Bierschenk, de Sardan 1997). Insofar as our gaze is limited to national governments we miss most of the action. Second, in many countries the quality of democracy and governance varies considerably across regions. Some regions may be characterized by high levels of political competition and strong guarantees for civil liberty while others languish under semi-authoritarian rule (Gibson 2005; Snyder 2001). Again, a national-level focus misses much of the action. A third problem with the country as primary unit of analysis is the resulting sample, which is relatively small (N=200 or so) and extremely heterogeneous, introducing multiple threats to inference (Kittel 2006; Seawright 2010). If we want to understand the causes and effects of democracy, a strong argument can be made for scoping down so that units are larger in number and more comparable to each other (Sinha 2012; Snyder 2001).

In response to the perceived deficits of country-centered analysis, the study of subnational politics has flourished in recent years (Moncado, Snyder 2012; Tsai, Ziblatt 2011). However, most of this work focuses on a single country or region and a single level of government (usually provincial) and thus is subject to problems of unrepresentativeness and stochastic error. Likewise, explanations tend to be developed in the context of a single country or region and are of uncertain value for developing general theory. For example, Gervasoni (2010) argues that unrestricted fiscal transfers from the national government to federal states in Argentina, established in 1934, served to entrench dominant elites in those states receiving a greater share of the transfers. McMann (2006) argues that the degree of economic autonomy among voters (vis-à-vis state controlled enterprises) explains variation across regions in Russia and Kyrgyzstan. Several studies focus on diffusion across regions in post-Soviet states (Lanika, Getachew 2006; Moraski, Reisinger 2010). Many explanations are grounded in the behavior of elites in particular countries (Benton 2012; Behrend 2011; Gervasoni 2010; Gibson 2005; Giraudy 2010; Rebolledo 2011). Again, it is difficult to say how generalizable these arguments might be. Another limitation of the literature on subnational democracy is that the theoretical and empirical scope of most studies is focused entirely on spatial comparisons across regions. While this sort of variation is of great importance, it could be that differences in the quality of democracy *across governmental levels* (e.g., local, regional, and national) are more marked, and more consequential.

In this study, we suggest an empirical approach by which to understand variation in subnational democracy both vertically and horizontally and on a global scale. The strategy relies on competitiveness in district-level contests, regarded as a proxy for the freeness and fairness of elections and the extent of accountability at various levels and thus a plausible summary measure of electoral ("Schumpeterian") democracy. Using this outcome, we construct a global dataset that brings together district-level election results across governmental levels from a wide range of countries stretching across two centuries.

Our theoretical argument focuses on the demographic underpinnings of electoral democracy. In contrast to the classical tradition of democratic theory, we argue that the size of an electorate has a positive impact on the quality of (electoral) democracy. Specifically, we show that larger districts are more competitive. The reasons for this, we argue, hinge on several factors: (1) the power and prominence of the office, (2) the number of potential challengers, (3) the diversity of preferences among constituents, (4) the number of political and nonpolitical organizations, and (5) the representative/constituent relationship. Although by no means the only factor influencing the quality of democracy, demography is an important and persistent factor and one largely neglected in

the extant literature.[1]

We begin by sketching the theory. In section II, we discuss our approach to measuring electoral democracy. In section III, we conduct a series of global tests to the hypothesis. In the remaining sections we undertake a more focused look at the relationship between district size and competitiveness in three countries: the United States, Brazil, and Sweden.

I. Theory

According to the classical tradition of democratic theory, harking back to the ancient Greeks, the size of a political unit is inversely related to the quality of democracy.[2] Indeed, scholars have generally found that as the number of citizens in a polity grows the mechanisms of classical democracy – understood to include communal deliberation and participation by all members of the polity – are more difficult to sustain (Alesina, La Ferrara 2000; Anckar 2004; Costa, Kahn 2003; Oliver 2000; Remmer 2010; Weldon 2006).

Our concern here is with a very different conception of democracy referred to as electoral, elite, minimal, realist, or Schumpeterian. This is the idea that democracy (in polities beyond the size of city-states) is achieved through competition among leadership groups which vie for the electorate's approval during periodic elections before a broad electorate (Dahl 1956, 1971; Schumpeter 1942/1950). This means that a polity is judged democratic insofar as elections are held regularly under conditions that are free and fair, insofar as there is significant electoral contestation in those elections, and insofar as the winners of those contests take office in accordance with established rules and procedures (Acemoglu et al. 2007; Alvarez et al. 1996; Bartolini 1999, 2000; Key 1949; Przeworski et al. 2000).

How, then, might electoral democracy be impacted by size? In addressing this question we disaggregate the concept of a polity into its constituent *districts*, i.e., the units from which leaders are selected within every (electoral) democracy. Accordingly, the district for an executive (president, governor, mayor) is the entire political unit (leaving aside electoral college districts, which are rare and rarely consequential). The district for a legislature is occasionally the entire electorate (e.g., Israel) but more typically a smaller geographic area designated as a constituency. This means that districts are sometimes units within a larger whole and sometimes meaningful political entities in their own right (e.g., a nation-state, region, or municipality). In this manner, we encompass variation within polities as well as across polities.

The size of a district is, more specifically, the size of its *electorate*, i.e., the number of eligible voters within that district as defined by electoral law. (We shall not consider informal norms and practices that might constrain the participation of social groups, though we do offer robustness tests in which turnout serves as a measure of the electorate.)

The causal factor of interest is thus an increase/decrease in the size of an electorate. In observational (nonexperimental) settings this may be achieved by an alteration in suffrage laws, i.e., a change in who is qualified to vote. Or it may be achieved by a change in the total population of a

[1] The relationship between population and competitiveness has been explored by several studies of American elections, with varying results, as reviewed in section IV. These studies are much smaller in scope than the present study, generally focusing on a single elective body and a small time-period. They are also subject to a number of methodological shortcomings and do not develop a general theory by which to explain the relationship.

[2] The intellectual history, stretching back to Plato, Aristotle, Montesquieu, and Rousseau, is reviewed in Dahl, Tufte (1973: ch 1). See also Alesina, La Ferrara (2000), Almond (1956), Anckar (2002, 2004), Anckar and Anckar (1995), Colomer (2007), Dahl (1971: 109-11), Diamond, Tsalik (1999), Hadenius (1992: 61-2, 122-7), Lijphart (1977: 65), Ott (2000), Stasavage (2010, 2011: 15), Zagarri (1987).

district. The latter may be the product of demographic trends (e.g., in- and out-migration, fertility, and mortality), reapportionment, a change in the total number of seats in an elective body, or a replacement of one elective body by another.[3] Naturally, there are different (and sometimes difficult-to-specify) ceteris paribus conditions associated with each of these interventions. Nonetheless, there is sufficient uniformity across these possible treatments to justify their consideration within a common theoretical framework.

As it happens, the impact of district size on the quality of electoral democracy is scarcely addressed in the democratization literature. However, one may intuit a "classical" perspective on the subject. For example, one might argue that in a larger district it is harder for new-comers to wage a successful challenge against an incumbent. While campaigns can be established on an informal basis in small districts – founded in personal relationships among friends and neighbors and posing few logistical hurdles – campaigns are more complex in a larger polity or district, and the organizational and financial hurdles are correspondingly greater. This dynamic may work to entrench elites and discourage viable alternatives (cites?).

We argue, by contrast, that size is directly related to electoral democracy. Note that when the size of a district is increased several characteristics of that district are likely to be enhanced including (1) the power and prominence of the office, (2) the number of potential challengers, (3) the diversity of preferences among constituents, (4) the number of political and nonpolitical organizations, and (5) the representative/constituent relationship. All of these features, we argue, are likely to contribute to greater electoral democracy at the district level. Naturally, the precise weight of each of these causal mechanisms is likely to vary according to the nature of the causal intervention, as discussed above. However, any change in district size is likely to trigger all five causal mechanisms; consequently, we cannot consider the impact of district size without considering all of these mechanisms.

1. A larger district carries more prominence than a smaller district, simply by virtue of its greater number of constituents. Granted, if the differences are slight, as they are in most cases of malapportionment, there will be little practical effect. However, where the differences are great we can anticipate that the attendant differences in power and prominence will be noticeable. For example, a US Senator from California has greater prominence – and, arguably, greater power – than a US Senator from Wyoming. This is purely by virtue of representing more constituents since their formal powers are identical. Where one is comparing representatives across elective offices with different formal powers the representative with the larger district is generally also accorded greater formal powers. Thus, a US President has greater power (not to mention prominence) than a US Senator, and both have greater power than a state representative. So, all things considered, it seems reasonable to consider power as a by-product of district size.

The power/prominence of a position is likely to generate greater interest in that position on the part of political parties, potential candidates, donors, the media, and other elite actors, as well as rank-and-file voters. Greater interest, in turn, is likely to translate into mobilizational efforts that enhance contestation within that district. To be sure, enhancing the power/prominence of a position will also enhance the motivation of the incumbent to retain his/her position. However, we assume that incumbents generally wish to retain their position of influence and prestige and that any enhancement in their motivation to do so will be fairly marginal. The big change in the shift from a

[3] Note that when comparing elective bodies that operate at different levels of government – national, regional, local – we are implicitly invoking a counterfactual: that an elective body at any given level could be replaced or created anew. For example, in arguing that the size of local legislative districts cause lower levels of electoral democracy relative to national legislative districts we are presuming that each of these could be replaced and their functions assumed by some other body, or that they could be created anew (if not already in existence).

small district to a large district is in the motivations of challengers and their potential supporters. This brings greater salience to the contest, salience that usually benefits the challenger (since incumbents are almost always fairly wellknown). Insofar as name recognition serves as an obstacle to challengers (cites), this obstacle should be mitigated in a larger district.

2. A larger district contains a larger pool of potential challengers to the incumbent. In a small district there are likely to be few persons with the requisite background, skills, networks, and ambition to pose a viable challenge to the incumbent. Assuming an equal distribution of such persons across districts, it follows that there will be a greater supply of high-quality challengers in larger districts (Dometrius, Ozymy 2006). Research on US congressional campaigns establishes that the quality of a challenger is a significant predictor of success (Jacobson, Kernell 1983; Mann, Wolfinger 1980; Van Dunk 1997), a relationship that presumably holds for other polities around the world. Consequently, it seems reasonable to suppose that greater numbers of quality challengers will positively impact the overall level of contestation in a district.

3. When the size of a district increases our expectation is that it will also become more diverse – sociologically, culturally, and ideologically. (Diversity is understood here as referring to the full range of characteristics across a population, not their distribution.) This is not always the case, of course; but it is generally the case. Indeed, the relationship between increasing district size and diversity must be monotonic except in the special case when some portions of the original district are dropped during reapportionment (in which instance an increase in district size could result in a district being less heterogeneous along some dimension). For most intents and purposes, greater size will be associated with greater diversity. Greater diversity should, in turn, make it more difficult for a single officeholder or party to adequately represent the views of constituents. And this, finally, offers potential cleavages for the opposition to exploit. Diversity thus serves as an important causal pathway from size to enhanced electoral competition (Aistrup 2004; Koetzle 1998; Sullivan 1973; but see Ensley et al. 2009).

4. In a large district, there are likely to be a greater number, and variety, of organizations. This includes businesses as well as labor unions, business and professional associations, religious and ethnic associations, universities, media outlets, and other organizations situated within civil society. Insofar as social and economic organizations provide a base for political organization, the richness and diversity of this organizational field should provide fodder for political opposition.

Note that a small district may encompass only one or two important organizations, which are likely to be closely linked to the incumbent – either because they launched his/her career or because s/he has managed to coopt them. For present purposes, it hardly matters whether the incumbent controls the organizations, the organizations control the incumbent, or they have a mutually beneficial relationship. The key point is that there is likely to be a good deal of synergy between the holder of political power and the holders of social and economic power. The same is true in a large district, of course. But here one is likely to find numerous organizations with varying interests and perspectives. Here, it will be more difficult to establish and maintain an exclusive power elite.

5. Finally, we surmise that the size of a district will affect the nature of representative/constituent relationships. In particular, we suspect that smaller districts allow for a stronger, more personal connection between representatives and their constituents. Elites who represent different constituencies and interests may be granted a direct connection to the incumbent, attending small meetings and conversing frequently with that individual or his/her surrogates. This may have the effect of attenuating support for opposition parties and candidates. Exit is not required where voice may be effectively exercised (Hirschman 1970).

In larger districts, incumbents will also seek to cultivate a distinctive "homestyle", linking their fate to their constituents (Fenno 1978). However, a clientelistic approach to governing is apt to

be less availing where numbers are large. It is not possible to maintain direct ties to all constituents in a constituency of hundreds of thousands (or millions). Consequently, the representative/constituent relationship is attenuated – less personalized, less clientelistic, and more programmatic in nature. This, in turn, limits the capacity of incumbents to maintain a monopoly of power by exploiting personal ties of an affective nature.

We have now laid out a theoretical argument with multiple elements, each of which may be represented as a node in a causal chain, as diagrammed in Figure 1. Note that only two elements of this causal chain are systematically measured and tested in the following analysis – the causal factor of theoretical interest (district size) and the outcome (electoral democracy, as discussed below). However, we are able to shed light on some of the possible causal mechanisms in the empirical analyses that follow.

[Figure 1 about here]

II. Measuring Electoral Democracy

If measuring electoral democracy at national levels has proven difficult, as many studies attest (Coppedge, Gerring 2011), measuring the same concept at subnational levels is even more challenging. Below the nation-state there is less information available with which to judge the quality of democracy. Likewise, scholars and other analysts have devoted much less attention to the issue.

A few scholars have attempted to remedy this shortcoming for selected countries, e.g., Argentina (Behrend 2011; Gervasoni 2010; Giraudy 2010), India (Beer, Mitchell 2006), Mexico (Giraudy 2010), Russia and the post-Soviet states (Gel'man 2010; Konitzer 2006; Lanika, Getachew 2006; McMann 2006; Moraski, Reisinger 2003, 2010), and the United States (Hill 1994). However, these approaches are limited in a number of ways. First, they generally focus on subnational regions, allowing for comparisons across regions but not across levels (national/regional/local) or across districts within a region. Second, many of the measures constructed by scholars are difficult to replicate across countries, with the consequence that most analyses of subnational democracy are limited to a single country or region.

To overcome these limitations we need an indicator of electoral democracy that is applicable at the district level, is widely available, and is comparable across countries, across different levels of government (national, regional, local), and across different elective offices (executive and legislative). For this demanding set of goals the best available instrument is electoral *competitiveness*, understood as 100 minus the share of the vote gained by the largest party in a district. Note also that competitiveness is a highly sensitive indicator, offering meaningful variation for every district and every election. Happily, the distribution of this variable across the sample approaches normality (with the exception of a small second mode at 0), allowing for linear models with unit and time fixed-effects.

Note that in measuring competitiveness we are primarily concerned with party competition rather than competition among individual candidates. Consequently, nonpartisan elections are excluded from all but one of the following analyses.

Of course, there are alternative approaches to measuring electoral democracy in a systematic fashion across districts, as shown in Table 1. One may alter the aggregation formula by which competitiveness is measured at the district level, as laid out in rows 2-5 of Table 1. As it happens, these alternative measures of competitiveness are all fairly highly correlated with our chosen measure and, not surprisingly, produce similar results, as indicated in the final column of the table. The principal advantage of our chosen measure relative to these alternatives is its breadth of empirical application. Note that our measure requires only a single election (rather than successive elections)

and one piece of information (the vote share of the most successful party in a district election). Consequently, the available sample is considerably larger than would be afforded by these alternatives, as indicated in column 7 of Table 1 ("contests").

A second sort of district-level measure focuses on *turnover*, understood as a change in party control of a district. This has a clear and intuitive meaning in single-member district (SMD) contests but not in multimember districts (MMDs). The concept of turnover is thus circumscribed as an indicator of electoral democracy if applied at the district level. Another difficulty is that turnover is "lumpy", occurring on an irregular basis. Many observations are required in order to tease out a signal from the background noise. Even so, it is reassuring to know that most of our results are replicable when tested (on a smaller sample of SMD elections) with turnover as a measure of electoral democracy (see Appendix E).

[Table 1 about here]

To be sure, an outcome-based indicator such as competitiveness can never measure all the subtle features of electoral democracy. Our claim, rather, is (a) that competitiveness captures the most important features of this concept and (b) that competitiveness is likely to be highly correlated with other, less easily measured, features. This is because most unmeasured factors are likely to have a causal effect on the level of competitiveness in a district (a principal advantage of an outcome-based approach to measurement [DeVelis 2011; Jackman 2008]). Consider that when other features of electoral democracy – e.g., civil liberties, a free media, access to campaign finance, the absence of voter intimidation and vote fraud – are impaired (or enhanced), this is likely to impact the competitiveness of a district in predictable ways. Likewise, whenever control over key government, civil society, and private sector is monopolized by a single party and utilized for political advantage (through patronage appointments and clientelistic networks), this is likely to be reflected in the level of competitiveness experienced in a district. Our indicator is thus sensitive to both de jure and de facto components of the electoral process; they are not limited to formal procedures. This is especially important in the contemporary era, when ruling parties often employ subtle tricks in order to discourage opponents, tricks that are difficult to measure and compare across settings because their impact is contextual (Schedler 2002). To the extent that these mechanisms of cooptation and coercion are successful – to the extent, that is, that they matter – they are likely to be reflected in lower rates of competitiveness.

One sort of measurement error deserves special attention. It is wellknown that officially reported results, upon which our indicator is based, often reflect inflated vote counts relative to the voting intentions of those who cast ballots (cites). Fortuitously, this sort of error does not introduce measurement error into our analysis. Indeed, it is precisely the sort of outcome one would expect in a less-than-democratic district.

In sum, competitiveness may be regarded as the product of a latent concept – electoral democracy – with innumerable ingredients that cannot always be directly observed, and are extremely difficult to measure systematically even when they can be observed. Insofar as these ingredients have a causal impact on competitiveness we can regard this outcome as a valid indicator of the concept. That is, when elections are judged free and fair from a procedural perspective they are likely to exhibit greater competitiveness. To be sure, a low competitiveness score is sometimes an indication of superlative political performance and citizen satisfaction rather than of authoritarian tendencies. However, instances of this nature are relatively rare and, so far as we can tell, evenly distributed across small and large districts. Thus, we regard this sort of measurement error as a source of imprecision rather than of bias.

III. Global Tests

We begin with a series of global tests using data drawn from a new dataset constructed by the authors, the Multi-Level Elections Archive (MLEA). This dataset is compiled from a wide range of sources including the Constituency-Level Elections Archive [CLEA] (Kollman et al. 2011), the Constituency-Level Elections [CLE] dataset (Brancati 2007), as well as Przeworski [PIPE] (2011), Colomer et al. (2006), and additional sources specific to the United States, Brazil, and Sweden (to be discussed in the following sections).

Unlike most electoral archives, MLEA collects data for all election types. These are classified as (a) Presidential, (b) Lower or unicameral chamber of national legislature, (c) Upper chamber of national legislature, (d) Gubernatorial, (e) Lower or unicameral chamber of regional legislature, (f) Upper chamber of regional legislature, (g) Mayoral (executive serving a municipality), or (h) Council (assembly serving a municipality).

The main causal variable of interest is *Electorate*, i.e., the number of eligible voters in each district. This is transformed by the natural logarithm in order to accommodate presumed non-linearity in the relationship.

In addition, we construct dummy-variable measures of major suffrage reforms that admit specified categories of voters into the electorate. *Male suffrage* is coded 0 prior to universal male (adult) suffrage, and 1 after suffrage is granted to that group (separate from females). *Female suffrage* is coded 0 prior to universal female (adult) suffrage, and 1 after suffrage is granted to that group (separate from males). If suffrage is granted simultaneously to men and women that country is coded 0 for both variables throughout the period. A separate variable, *Universal suffrage*, is constructed to measure this combinatorial treatment – coded 0 prior to universal male and female (adult) suffrage, and 1 after suffrage is granted to both groups simultaneously. *Youth suffrage* is coded 0 prior to the extension of suffrage to younger voters, and 1 thereafter. (Only one extension of this nature is coded for each country.)

A final suffrage variable, *Suffrage extension*, combines information from the previous variables. This is coded 1 for any election in which there is a major increase in the size of the electorate by virtue of granting suffrage to men, women, both men and women, or youth. That is, it registers 1 for any election in which there is a change in any of the other suffrage variables; 0 otherwise.

A number of electoral system features can be expected to impact competitiveness at the district level, and thus are important covariates in our analysis. These include: (a) Single-member district (SMD); (b) Majoritarian, block ballot; (c) PR, average magnitude <9; (d) PR, average magnitude >9, closed list; (e) PR, average magnitude >9, open list; (f) Mixed (SMD and MMD); (g) Indirect (through an electoral college); and (h) Secret ballot. All are measured as binary variables (dummies). Additional variables measuring (i) district magnitude, (j) urbanization, (k) educational attainment, and (l) per capita income are available for specific countries, as explained in subsequent sections. (Specific coding rules and data sources for all variables are contained in Appendix A.)

MLEA currently includes only countries (and periods) where a semblance of multi-party competition exists. The reason for this is that we are primarily interested in exploring *within-country* variation (across districts), and there is no such variation in competitiveness in single-party regimes and nonelectoral regimes. The resulting dataset is nonetheless the largest of its kind, including 86 countries, 1,534 elections, 33,902 districts, and 200,000+ district-level (constituency) contests, which serve as the basic unit of analysis in most of the following analyses.[4]

[4] The dataset can be reformulated as an annual panel where multiple elections (for a single office) within a single year are averaged to produce a single data point for each year and where years without an election are given the same values of the last year in which an election occurred (for that office). Imposing this "regular" structure on the panel allows for some methods of error-correction. However, doing so has little impact on model estimates, which confirm our sense that whatever time-dependence exists in the data can be handled through the introduction of annual dummies and do not require a uniform temporal structure.

Important features of the dataset are summarized in Appendix A. Note that some countries (e.g., the United States, Brazil, and the United Kingdom) are represented by tens of thousands of district-level contests, as shown in Table A2. (Reassuringly, when these three countries are removed from the sample results reported in Table 2 are robust.) Other countries are represented by district-level contests drawn from a single election. Likewise, the data is distributed unevenly through time, with more data from contemporary periods and much less from historical periods, as shown in Figure A1. Only the US, Canada, Australia and several European countries provide electoral data back to the nineteenth century.

Table 2 displays a series of regression analyses within a global sample of countries. In model 1, Competitiveness is regressed against Electorate along with dummies measuring various aspects of the electoral system, year fixed-effects, and district fixed-effects. The estimator is ordinary least squares with standard errors clustered by district. We regard this as our benchmark model since it controls for a variety of possible confounders while maintaining maximal sample size. The most important aspect of the model is the inclusion of unique intercepts for each district, which is deemed vital for modeling heterogeneity across a wide variety of offices and countries.

Model 1 shows a positive and highly significant relationship between the size of an electorate and the level of competitiveness. If the size of a district's electorate were to change from 50,000 to 150,000 people, our coefficient suggests a seven percent increase in competitiveness. This impact is significant at the 95% level, as it is for all our global models. Also reassuringly, this change in electoral size is less than the standard deviation of our (logged) Electorate variable.

In the next several tests, we introduce various alterations to this benchmark model. Model 2 introduces a lagged dependent variable, which shifts attention from long-term effects to one-period causal effects and also may block potential confounders. Results compare favorably to the benchmark model (indeed, the long-term causal effect is much greater).

Model 3 discards district fixed-effects, while model 4 replaces district fixed-effects with country fixed-effects. Both models show reduced causal effects for the variable of theoretical interest (relative to the benchmark model), as one might expect. However, Electorate retains a positive relationship to Competitiveness and a low probability of stochastic error (the relationship is significant at 95% levels).

Model 5 returns to the benchmark specification, this time with a sample restricted to the 1816-1919 period. The effect of this sample restriction is to focus our attention on a period of time in which suffrage expansions were focused primarily on adult male citizens. (There is only one incidence of universal female suffrage in our sample during this period.) Estimates for Electorate show a slightly enhanced causal effect relative to the benchmark model.

Model 6 focuses explicitly on suffrage extensions – Male, Female, Universal, and Youth, as explained above. Here, we find a very strong relationship between Male and Universal suffrage extensions and enhanced competitiveness. The granting of male suffrage or universal suffrage is associated with roughly an 11-point increase in competitiveness on our 100-point scale. Female suffrage, however, shows a negative relationship to Competitiveness, and Youth suffrage has no (statistically significant) relationship.

We regard this pattern of results as evidence for the importance of diversity as a causal mechanism. Diversity, it will be recalled, refers to diversity of preferences not a "demographic" fact. In any polity where a large portion of the male population is excluded from suffrage we can expect that this constituency has preferences that are quite distinct from those males who are allowed to vote. It is not surprising that the enfranchisement of this category of citizens would enhance competitiveness, opening the way for new candidates and new parties, or at least interrupting the dominance of incumbents. By contrast, the enfranchisement of women is not expected to have much impact on competitiveness since (so far as we can tell) women's preferences were not

divergent from male preferences at the time when women's suffrage was granted in most countries. The enfranchisement of youth is, for similar reasons – and because this category of voters constitutes a very small portion of the electorate – not expected to have a strong impact on competitiveness.

Model 7 calculates competitiveness as a first-difference variable, i.e., the change in competitiveness from one election to the next. The variable of theoretical interest combines various sorts of suffrage extensions into a single variable, Suffrage extension, coded 1 for every election in which some category of voter is enfranchised (0 otherwise). This shows a modest impact of 2 percentage points for each enfranchisement episode, though it must be borne in mind that our reconstruction of the dependent variable means that we are measuring short-term impacts only (the last pre-reform election compared to the first post-reform election) and we are combining diverse interventions that probably (following the previous discussion) have diverse effects on the outcome.

IV. United States

Global analyses are subject to a great deal of heterogeneity, both in the measured treatments and in background factors that may serve as noise or as confounders. In addition, some background factors that may serve as confounders are impossible to measure across such a large sample. Likewise, a number of factors that may shed light on causal mechanisms are either impossible to measure, or difficult to interpret, across a large sample. Thus, for reasons of ascertaining causal effects and investigating causal mechanisms, the following sections focus on countries where data problems are less severe and opportunities for quasi-experimental tests are more plausible.

We begin with the United States, a country with perhaps the greatest number of election types and the greatest variation in district size in the world. Our sample brings together election contests from presidential, Senate, House, gubernatorial, upper state house, lower state house, and local executive elections – a total of 6,719 districts and 102,531 district-level contests from 1790 to 2008.

Given the plethora of elective bodies and districts, it is not surprising that a number of studies have looked at the relationship between population and competitiveness (understood as closeness of the vote or incumbent defeat). Hibbing and Brandes (1983) compare Senate elections.[5] Aistrup (2004) examines state house elections aggregated by county. Lascher (2005) looks at county board of supervisor elections in California. Most of these studies support the notion that a larger district encourages greater competition – though it is not always theorized in an explicit fashion. Lascher (2005) is an exception; however, he includes several covariates in his model that are quite plausibly endogenous to population (e.g., number of challengers, quality of challengers, and partisanship). No previous study of electoral competitiveness in the US has encompassed a wide range of different electoral offices or a long time-period.

Electoral data used in coding Competitiveness is drawn from a variety of sources: (a) for presidential and senatorial elections, the Office of the Clerk Election Statistics[6]; (b) for House

[5] Likewise, studies examining Senate and House elections have often focused on the question of why the former are generally more competitive (Gronke 2000; Krasno 1994; Oppenheimer 1996). Explanations for this pattern center on a series of stylized contrasts: Senate races occur in districts with greater social heterogeneity; they occur in districts with greater partisan balance; they feature higher-quality challengers; they attract more money and consequently more spending; they have greater media efficiency due to the overlap between Senate districts and media markets; they are higher in salience and turnout; they feature "wholesale" rather than "retail" politicking. All of these factors probably owe something to the greater population size of Senate districts, and are in this sense concordant with the argument pursued here.

[6] http://clerk.house.gov/member_info/electionInfo/index.html

electoral data, Lublin (1997), (c) for state upper and lower house electoral data, Carsey et. al. (2007), and (d) for gubernatorial data, Parker (2010). Population data is drawn from decennial US Census reports,[7] with values imputed in order to cover every year in the dataset. Variable definitions and a description of the sample across key variables, regions, and time-periods is provided in Appendix B.

Analyses employ several covariates judged to be important and exogenous influences on the outcomes of interest. This includes the Urban (percent living in urban areas), Income per capita (natural logarithm), High school (percent above age 25 with a high school degree), and College (percent above age 25 completing college). Some of these covariates are treated as constants since they change little over the observed period; these are taken from the 2000 US Census records. Historical data (at decadal intervals) is available for House districts from Lublin (1997) and for the entire United States from the US Census[8] and the Bureau of Economic Analysis.[9]

Table 4 introduces a set of OLS tests where Competitiveness is regressed against Electorate along with state and year fixed-effects. Model 1 includes elections to all available offices including Presidency, Senate, House of Representatives, Governor, State upper house, State lower house, and Mayor. The estimate effect of Electorate on Competitiveness is positive and significant, though not quite as strong as that estimated in our benchmark model in the global sample (Model 1 in Table 2). Model 2 adds a set of additional covariates that may serve as confounders including Urban, Income, High school, and College, as described above. The effect is attenuated, but still significant.

Models 3 and 4 repeat this format, limiting the sample to elections for the House of Representatives. Model 3 includes only state and year fixed-effects, along with the variables of interest. Model 4 adds additional covariates. Here, we find the estimated causal effect of Electorate on Competitiveness to be enhanced – indeed, doubled – when additional covariates are added to the model, though the sample is considerably reduced (due to list-wise deletion of missing observations).

Models 5 and 6 focus on elections to the upper house of state legislatures across the United States. Here, the estimated coefficient for Electorate is extremely high, and scarcely affected by varying model specifications. Models 7 and 8 focus on elections to the lower house of state legislatures. Again, the estimated causal effects are quite large and are not sensitive to specification changes. We do not show results for other office-specific elections – e.g., Senate, Governor, Mayor – as sample size is quite small for these subsets.

The next set of analyses, displayed in Table 5, explores several comparisons that may be deemed quasi-experimental in nature. We compare the competitiveness of coterminous Senate and House elections for the same state in column 1, the competitiveness of coterminous gubernatorial and state upper house elections for the same state in column 2, and the competitiveness of coterminous state upper and lower house elections in column 3. In each analysis the larger districts are regarded as the treatment and the smaller districts as the control.[10]

Two approaches to the analysis are provided. The first applies exact matching. Multiple matches for each treatment unit are provided by smaller-district contests held in the same state and year, allowing for a composite control using the CEM algorithm (Blackwell et al. 2010), and followed by OLS analysis on the matched units. The second analysis applies nearest-neighbor matching with

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[7] http://www.census.gov/main/www/cen2000.html

[8] Ethnicity data from www.census.gov/population/www/documentation/twps0029/tab08.html, education data from www.census.gov/hhes/socdemo/education/data/census/half-century/tables.html (Tables 5 and 6, both sexes), and other data from selected US Census documents.

[9] For income data, see www.bea.gov/national/nipaweb/SelectTable.asp?Selected=N, Table 2.1.

[10] House elections occurring in a year when there were no Senate elections in that state are excluded from matching analyses in column 7. Likewise, gubernatorial or upper state house elections without matching elections in a particular year within a state are excluded from analyses reported in column 8, and unicameral elections from the state of Nebraska are excluded from analyses in column 9.

replacement and with a minimum of a single match (Abadie et al. 2001). Exact matching is applied to State and nearest-neighbor matches to other covariates – Year, Urban, Income, High School, and College. Coefficients are understood as sample average treatment effects (SATE).[11]

In this manner, we apply specification tests to matched data. The results are reassuring insofar as the larger districts show a (statistically significant) relationship to Competitiveness in all analyses. Moreover, there is little variation in estimated effects when analyzed with different specifications and matching algorithms. Naturally, effects vary when the treatments vary. In particular, we find the largest treatment effects where there is the largest difference between mean electorates across the treatment and control groups. We find that Senate elections are 8-9 points more competitive than House elections and Gubernatorial elections are 14-16 points more competitive than upper state house elections. By contrast, where the treatment is relatively modest, as in the Upper/Lower state house elections, we find modest treatment effects. Upper state house elections are only 2 points more competitive than lower state house elections.

V. Brazil

Like the United States, Brazil possesses an enormous variety of elective offices - president, lower house, upper house, governor, council, and mayor - and tremendous variations in district size. Our data is drawn from the Superior Electoral Court (Tribunal Superior Eleitoral), the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatistica), and Brambor and Ceneviva (2012).

Unlike the US, most of Brazil's legislative elections feature MMDs with open lists, allowing for preferential voting within a list. This is measured in our analysis as a residual category, i.e., all non-SMD elections. Some mayoral elections (those where the municipal population falls above 200,000) employ a two-round voting system, a feature that we also need to control for in our analyses.

Table 3 displays results for the Brazilian analyses. Following the model established elsewhere in this study, we regress Competitiveness against Electorate with a series of controls. Model 1 includes a full sample including all available elective offices from 1945-2010. This includes the period of military rule; however, most of the observations are drawn from after the Abertura. Only electoral system variables along with state and year fixed-effects are included as controls. Model 2 introduces a series of additional controls to measure urbanization, income, and literacy. Both models show modest effects of district size on competitiveness.

The remainder of our tests focus on municipal elections. (Note that these provide the vast majority of the observations in our full sample.) Models 3 and 4 are limited to city council elections. Model 3 includes the minimal specification and Model 4 the maximal specification. Again, a modest effect is registered and there is very little difference across models. Models 5 and 6 focus on mayoral elections. Results are strikingly similar.

The pattern of data observed across a variety of elections in Brazil – weighted toward local elections – confirms a small but strongly significant demographic effect, one which is scarcely diminished when other factors are included in the model. This suggests that even in a highly inegalitarian country, where extremes of wealth and development are spatially organized and therefore likely to be correlated with districts, the modernization effect is quite small. Larger districts

[11] Population average treatment effects are almost identical. Likewise, when the number of minimum matches is increased there is only a slight change in estimated coefficients and standard errors.

are more competitive, regardless of whether their constituents are rich or poor, educated or uneducated, urban or rural.

VI. Sweden

Lower house legislative elections in Sweden prior to the introduction of PR present an unusual opportunity to test the generality of our argument. In 1866 the Swedish Diet of Estates was replaced by a bicameral parliament. The exclusive upper house (*Första kammaren*) was indirectly elected, whereas the lower house (*Andra kammaren*) was elected every three years by plurality vote. Most districts were single-member, although some larger cities (including Stockholm) were multi-member. At the outset, elections in rural districts were predominantly indirect. But by 1772 (the starting year for our panel), 55% of all districts nationally held direct elections, a figure that rises gradually to 99.5% in the last election in the series (1908). Elections were largely non-partisan, though this changed dramatically with the so-called "tariff election" of 1887, where opponents and supporters of current trading tariffs organized election campaigns and also started to vote more coherently in the parliament. Efforts at party organization developed further during the 1890s, at different paces in different parts of the country, with a breakthrough for national party organizations around the turn of the century.

The franchise for the lower house included all men age 21 or above that fulfilled certain wealth and income criteria. Initially, approximately 80% of the adult male population was thereby disenfranchised. However, with rapid industrialization both income and wealth grew, thereby enfranchising an increasing number of voters. Indeed, the electorate more than doubled – from roughly 230,000 to 500,000 – over the observed period. By 1908, a third of the adult male population was enfranchised (Carlsson 1953; Wallin 1961; Lewin et al. 1972; Esaiasson 1990; Andersson 1998).

Regression tests in Table 6 depart from our usual format in two respects. First, we include a measure of Indirect elections (dummy). Second, Competitiveness is constructed by counting the vote-shares of the candidate – rather than the party – with the largest vote-share, since many of the elections under study were conducted in a nonpartisan fashion.

Sweden might be characterized as a least-likely case for our theory. The high incidence of indirect and non-partisan elections – at least initially – should not be conducive to a relationship between Electorate and Competitiveness. Moreover, the gradual nature of the suffrage extension may mute the relationship between treatment and outcome. As Table 6 makes clear, however, our argument is corroborated for the full sample of Swedish constituencies from 1872-1908, covering 14 lower house elections.[12] As with previous tests, the effect is stronger when district fixed effects are added to the model (see Model 2). Although not shown, this result also holds in the subsamples of both direct and indirect elections, and also if we restrict the sample to elections held before the advent of national party organizations (a factor that could be correlated with the treatment).

In models 3 and 4, we study the dynamic relationship between *changes* in the (logged) size of the electorate and *changes* in competitiveness from one election to the other, controlling for previous levels. Again we find a quite sizeable effect of our treatment, although only marginally significant when we also control for election fixed-effects. Given the gradual nature of the suffrage extension in

[12] The data has been coded directly from the series of election reports issued by *Statistics Sweden* starting with the election of 1772. The elections of 1866 and 1869 are thus excluded due to missing data. Also, the reports only contain names of the winning candidate, so turnover cannot be coded.

Sweden, as noted above, this is a tough test for our argument. The fact that it holds in a dynamic setting lends strength to a causal interpretation.

What mechanisms could be at work in these results? Of the posited causal pathways underlying our theory, the one most clearly related to the Swedish development is socio-economic diversity. Recall that a wealth and an income threshold restricted the franchise in these elections. The increase in the size of electorate was thus largely driven an increasing number of people passing these thresholds. By construction, these new voters were poorer than the existing electorate, consisting largely of industrial workers (in both the cities and the countryside) who passed the income threshold. Through this influx of a new class of voters, the Swedish political landscape was radicalized (Carlson 1953), and this is the most likely cause of increased competitiveness at the polls. Thus, while industrialization serves as an assignment mechanism in the data generating process, its effect on the outcome seems to have been generated primarily through the pathway of an enlarged electorate with more diverse preferences, as our theory stipulates.

VII. Discussion

A threat to inference in the foregoing empirical tests is posed by any factor that affects both right- and left-side variables. One such factor stems is modernization, which we understand to encompass the conjoined factors of income, education, and urbanization. At a global level, these effects are captured by year fixed-effects. However, we must be concerned with country-level variations and, even more important, district-level variations through time. There is no doubt that economic factors drive patterns of population growth across districts within our sample over the two-century period of observation and that selective migration patterns might conspire to pack wealthier, more educated people into urban areas – which, in turn, are generally larger than the rural areas within a country (even where reapportionment is practiced regularly and strictly there are temporary fluctuations). Many of our analyses are potentially subject to this common-cause confounder.

Unfortunately, various features of modernization cannot be assessed at the district level for most countries. Fortunately, they can be assessed for some country-cases. Analyses focused on the United States indicate that income and education play a strong role in conditioning levels of competitiveness across districts. However, it is not clear that they serve as confounders in the analysis. Note that the coefficient for Electorate responds unpredictably when modernization factors are included in the various samples tested in Table 3. In only one sample does it fall appreciably; in other samples the effect of including these covariates is to enhance the coefficient for Electorate, or to leave it essentially unchanged. Likewise, in our analysis of data drawn from Brazilian elections (see Table 5) we find that measures of urbanization and literacy have only a slight impact on competitiveness, and no impact on the estimated coefficient for Electorate.

There is less reason for concern with respect to confounding stemming from modernization in models focused on short-term causal effects (e.g., Models 2, 6, and 7 in Table 2) since modernization's impact on competitiveness is likely to be long-term rather than short-term. Likewise, in the matching analyses conducted in Table 3 there is no reason to suppose that modernization lurks as an unmeasured confounder since the treatment and control conditions are nested within the same political units. (Any effect of modernization on a state's lower house legislative districts would have an equal effect on that state's upper house legislative districts.)

Interventions	Causal factor	Mechanisms	Outcome
1. Suffrage 2. Demography 3. Electoral/political system	District size	1. Power of office 2. Challengers 3. Preferences 4. Organizations 5. Rep/constituency relationship	Electoral democracy

Figure 1:

Overview of the Argument

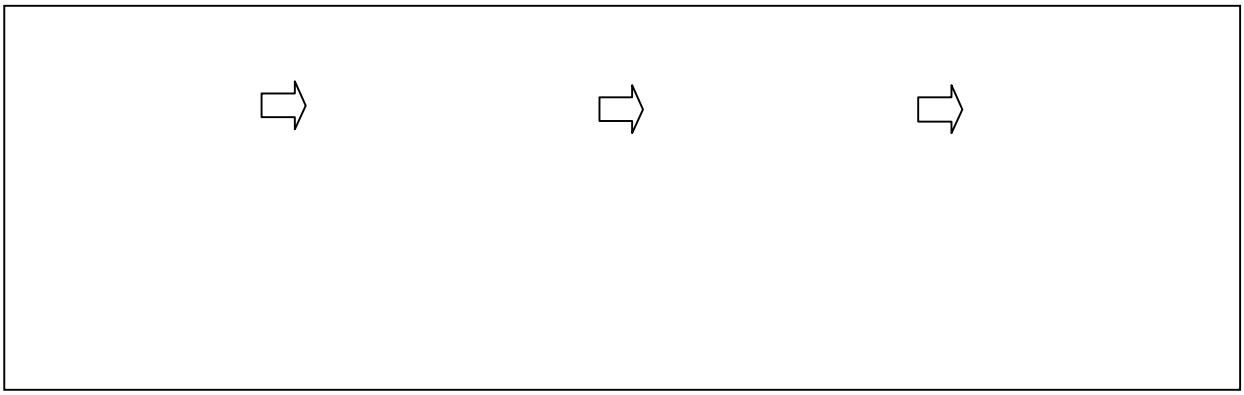

Table 1:
District-level Indicators of Electoral Democracy

Indicator (source)	Period	Electoral system	Countries	Elections	Districts	Contests	Pearson's r (N)	Robust
1. *Competitiveness.* 100 – the share of the vote gained by largest party (authors). Employed by Gervasoni (2010), Vanhanen (2000).	1788-2011	All	86	1,534	33,902	242,508	--	--
2. *Competitiveness (incumbent).* 100 – the share of the vote gained by the incumbent party (authors).	1790-2011	All	72	1,371	25,195	187,112	.712 (186,664)	Yes
3. *Margin of victory (top two).* 100 – the difference in vote shares between the first and second place parties (authors). Employed by Giraudy (2010), Goldberg et al. (2008).	1788-2011	All	86	1,516	27,956	209,836	.937 (209.836)	
4. *Margin of victory (incumbent and next).* 100 – (incumbent party vote share – other party with highest vote share) (authors).	1790-2011	All	72	1,248	20,395	159,026	.763 (159,026)	
5. *Truncated margin (incumbent and next).* 100 – (incumbent party vote share – other party with highest vote share), capped at 100 (authors).	1790-2011	All	72	1,248	20,395	159,026	.897 (159,026)	
6. *Turnover.* Change in party control in a SMD district (authors).	1790-2011	SMD	41	843	20,048	168,168	.321 (167,776)	Yes

Robust: models reported in Table 2 are replicated with this measure of electoral democracy and show similar results.

Table 3:
United States: Regression Tests

Offices	All		House of Representatives		State Upper house		State Lower house	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Electorate (ln)	4.152***	1.845***	9.158***	23.366***	18.774***	14.531***	26.307***	24.452***
	[0.068]	[0.112]	[0.236]	[1.721]	[4.495]	[4.444]	[1.921]	[1.939]
Urban		-0.016***		0.006		-0.005		0.006*
		[0.003]		[0.014]		[0.007]		[0.003]
Income		3.904***		4.416**		7.568***		6.580***
		[0.246]		[2.029]		[1.216]		[0.582]
High school		16.387***		6.513		21.680***		31.770***
		[0.625]		[5.403]		[6.983]		[2.331]
College		15.351***		-19.530***		45.797***		15.549***
		[1.148]		[5.979]		[5.016]		[3.408]
State fe	X	X	X	X	X	X	X	X
Year fe	X	X	X	X	X	X	X	X
Years	1788-2008	1948-2003	1788-2008	1972-1992	1968-2003		1968-2003	
Contests (N)	99,483	71,986	30,806	3,443	16,730	16,730	50,979	50,979
R2	0.231	0.165	0.372	0.329	0.156	0.171	0.162	0.173

Ordinary least squares regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). *Outcome:* Competitiveness (100 – vote share of largest party). *All:* includes elections for president, House of Representatives, Senate, Governor, state lower house, state upper house, and mayor.

Table 4:
United States: Matching Tests

	1	2	3
Sample	Senate, House	Gubernatorial, Upper state house	Upper, Lower state house
Years	1980-2000	1968-2003	1968-2003
Contests (N)	3,470	6,226	63,094
Treatment group	Senate	Gubernatorial	Upper house
Contests	352	227	11,208
Mean electorate	5,183,279	5,350,323	164,327
Control group	House	Upper house	Lower house
Contests	3,118	5,999	42,850
Mean electorate	185,037	148,471	67,242
I. Exact matching			
Treatment effect	8.028***	16.325***	1.864***
(SATT)	[0.761]	[1.228]	[0.195]
State (exact)	X	X	X
Year (exact)	X	X	X
Exact matches	100%	100%	100%
II. Nearest-neighbor matching			
Treatment effect	9.372***	14.723***	$
(SATE)	[1.190]	[1.158]	[$]
State (exact)	X	X	X
Exact matches	94%	69%	$%
Year	X	X	X
Urban	X	X	X
Income	X	X	X
High school	X	X	X
College	X	X	X

I. Exact matching using CEM (Blackwell et al. 2010) followed by OLS analysis of matched observations. *II.* Nearest neighbor matching (Abadie et al. 2001). *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). *Outcome:* Competitiveness (100 – vote share of largest party).

Table 5:
Brazil

Offices	All		Council		Mayor	
	1	**2**	**3**	**4**	**5**	**6**
Electorate (ln)	2.619***	2.238***	3.682***	3.159***	2.005***	1.748***
	[0.059]	[0.066]	[0.070]	[0.086]	[0.087]	[0.103]
SMD	-19.152***	-19.084***				
	[0.116]	[0.116]				
2d round	-12.509***	-12.003***			-8.713***	-8.452***
	[0.614]	[0.602]			[0.628]	[0.634]
Urban		0.025***		0.043***		0.026***
		[0.004]		[0.005]		[0.005]
Income		1.366***		-1.204***		-1.253***
		[0.159]		[0.419]		[0.451]
Literacy		0.036***		0.122***		0.077***
		[0.011]		[0.018]		[0.018]
State fe	X	X	X	X	X	X
Year fe	X	X	X	X	X	X
Years	1945-2010		1996-2010		1996-2008	
Contests (N)	42,550	42,314	20,219	20,219	21,842	21,842
R2	0.441	0.444	0.259	0.266	0.048	0.05

Ordinary least squares regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). *Outcome:* Competitiveness (100 – vote share of largest party). *All:* includes elections for president, lower house, upper house, governor, council, and mayor.

Table 6:
Sweden

Outcome	Competitiveness		ΔCompetitiveness	
	1	**2**	**3**	**4**
Electorate (ln)	3.793***	11.335***	8.295***	5.643*
	[1.052]	[2.356]	[2.880]	[3.213]
SMD	-1.609	-6.525	-3.349	-4.464
	[1.872]	[5.171]	[3.322]	[3.405]
Indirect	-11.734***	-10.619***	-5.752***	-9.093***
	[1.246]	[1.617]	[1.519]	[1.692]
Election fe	X	X		X
District fe		X	X	X
Electorate, t-1			X	X
Competitiveness, t-1			X	X
Years	1872-1908		1872-1905	
Districts	327	327	280	280
Contests (N)	2,658	2,658	2,282	2,282
R2 (overall)	0.119	0.088	0.336	0.352
R2 (within)		0.090	0.423	0.457

Ordinary least squares regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). *Outcome:* Competitiveness (100 – vote share of largest party or candidate). *Units of analysis:* district contests for the lower house (*Andra kammaren*) of the national legislature (*Riksdag*).

APPENDIX A:

Multi-Level Elections Archive (MLEA)

Figure A1:
Distribution of Data through Time

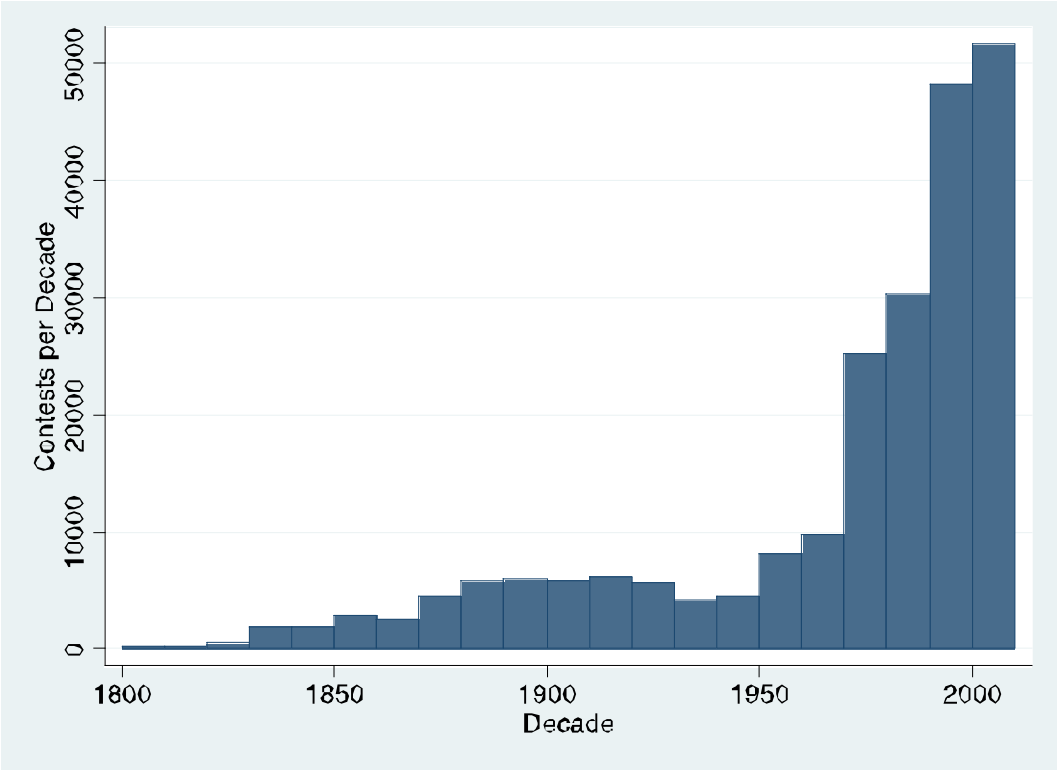

Table A1:
Summary of the Global Dataset

Office	Years	Countries	Elections	District Contests
National				
President	1945-2010	2	24	24
Upper chamber	1958-2010	12	69	2,004
Lower chamber	1788-2011	93	1,508	132,083
Regional				
Governor	1977-2010	7	38	509
Upper chamber	1968-2003	1	36	16,731
Lower chamber	1968-2003	1	36	50,983
Local				
Mayor	1969-2008	2	34	22,269
Council	1996-2010	1	7	20,259
All				
Total (non-overlapping)	1788-2011	93	1,752	244,962

Table A2:
Distribution of Data across Countries

Country	Contests
US	99,483
Brazil	42,550
UK	22,012
Germany	9,302
India	5,361
Sweden	3,835
France	3,736
Denmark	3,664
Australia	3,375
Korea	2,724
Japan	2,219
Mexico	1,795
Belgium	1,678
Norway	1,495
Italy	1,477
Philippines	1,361
New Zealand	1,264
Greece	1,217
Hungary	1,174
Netherlands	1,119
Thailand	1,073
Switzerland	1,052
Turkey	961
Ireland	957
Bangladesh	898
Iceland	722
Jamaica	716
Zambia	673
Austria	603
Country	**Contests**
Singapore	558
Pakistan	541
Finland	540
Kenya	503
Ghana	430
Malawi	375
Spain	364
Nigeria	345
Dominican Republic	324
Canada	308
Czech Republic	295
Bolivia	278
Botswana	272
Colombia	264
Barbados	258
Nepal	240
Portugal	240
Argentina	239
Poland	223
Albania	200
Puerto Rico	200
Mauritius	189
Saint Lucia	189
Taiwan	182
Romania	167
Bermuda	132
Sri Lanka	132
Cameroon	123
Indonesia	122
Country	**Contests**
Honduras	108
Guyana	102
Bulgaria	93
Gambia	83
Bahamas	81
Grenada	75
Liberia	64
Dominica	63
Luxembourg	60
Guinea-Bissau	54
Czechoslovakia	50
Costa Rica	49
Estonia	46
Cape Verde	39
Bosnia	30
Anguilla	28
Seychelles	25
Cambodia	24
Cyprus	24
Equatorial Guinea	18
Israel	18
Antigua and Barbuda	17
Croatia	17
Latvia	15
South Africa	9
Gibraltar	4
San Marino	4

Table A3:
Variable Definitions

Outcomes

Competitiveness. 100 – vote share of the largest party. Source: coded by authors. *comp_largest*

Competitiveness (Incumbent). 100 – vote share of the incumbent party. Source: coded by authors. *comp_incumb*

Margin of victory (incumbent and next). 100 – the difference between the incumbent's and the next highest party's vote share. Source: coded by authors. *comp_incumbdiff*

Margin of victory (top two). 100 – the difference the two parties with the top two vote shares. Source: coded by authors. *comp_diff*

Truncated margin (incumbent and next). 100 – the difference between the incumbent's and the next highest party's vote share, capped at 100. Source: coded by authors. *comp_incumbdiff2*

Turnover. 1 if change in party control, 0 otherwise (applies only to SMDs). Source: coded by authors. *turnover*

Causal Factors: Electorate and Turnout

Eligible voters (ln). The number of eligible voters, logged. If unavailable, then number of voters or the population, logged. Source: various. *pev_etc_ln*

Turnout. Proportion of eligible voters who voted, from 0 to 1. Source: CLEA; *turnout*

Causal Factors: Suffrage

Male suffrage. Coded 1 for all elections after which universal male adult suffrage is introduced, 0 otherwise. Coded 0 if female and male suffrage are introduced simultaneously, whether at a state's founding election or not. Source: Przeworski (2011). *male_suffrage*

Female suffrage. Coded 1 for all elections after which universal female adult suffrage is introduced, 0 otherwise. Coded 0 if female and male suffrage are introduced simultaneously. Source: Przeworski (2011). *female_suffrage*

Universal suffrage. Coded 1 for all elections after which universal male and female adult suffrage is simultaneously introduced, 0 otherwise. Coded 0 if male and female suffrage are introduced at different times. Source: Przeworski (2011). *universal_suffrage*

Youth suffrage. Coded 1 for all elections after which suffrage is extended to youth, 0 otherwise. If there is more than one episode of youth suffrage in a country's history, the largest extension (only) is coded; thus, each country is coded 1 only once (at most) in its history. Source: Przeworski (2011). *youth_suffrage*

Suffrage extension. Coded 1 for each election in which male, female, universal, or youth suffrage is granted (as coded above), 0 otherwise. Source: Przeworski (2011), aggregation by authors. *Extend*

Causal Factors: Electoral System

Round. 2 if the second of two rounds, 1 otherwise. Source: coded by authors. *Round*

Secret ballot. 1 if ballot is secret. 0 otherwise. Source: Przeworski (2011). *Secret*

Majoritarian, block ballot. Coded 1 if electoral system is majoritarian with block ballot. Source: Colomer et al. (2006). *maj1*

Majoritarian, cumulative ballot. Coded 1 if electoral system is majoritarian with cumulative ballot. These multi-member districts allow voters to cast multiple votes for one or more candidates. Source: Colomer et al. (2006). *maj2*

SMD. Coded 1 if electoral system is single member district. Source: Colomer et al. (2006). *maj3*

PR, avg. mag<9. Coded 1 if electoral system is proportional with mean district magnitude less than 9. Source: Colomer et al. (2006). *pr1*

PR, avg. mag>9, closed list. Coded 1 if electoral system is proportional with mean district magnitude greater than 9 and closed lists. Source: Colomer et al. (2006). *pr2*

PR, avg. mag>9, open list. Coded 1 if electoral system is proportional with mean district magnitude greater than 9 and open lists. Source: Colomer et al. (2006). *pr3*

Mixed. Coded 1 if electoral system includes parallel SMD and MMD seats (with or without compensation for disproportionality induced by SMD elections) and data sources do not allow us to determine which districts are SMD. Source: Colomer et al. (2006). *mix*

Indirect. Coded 1 if electoral system is indirect, i.e., if voters choose electors and electors then choose representatives. Coded 0 if the power of electors is minimal (e.g., in US presidential elections). Source: Colomer et al. (2006). *ind*

Note: Includes variables employed in the main analyses as well as those employed in robustness tests.

Table A4:
Descriptive Statistics

Variables	Countries	Years	Obs	Mean	SD	Min	Max
Competitiveness	86	1788-2011	242508	39.212	20.090	0.000	99.777
Competitiveness (incumbent)	72	1790-2011	187112	44.114	26.542	0.000	100.000
Election type	93	1788-2011	244962	3.863	2.185	1	8
Electoral system dummies							
- Majoritarian, block ballot	84	1788-2011	223169	0.007	0.081	0	1
- Majoritarian, cumulative ballot	84	1788-2011	223169	0.000	0.000	0	0
- SMD	87	1788-2011	243894	0.780	0.414	0	1
- PR, avg. mag <9	84	1788-2011	223169	0.072	0.258	0	1
- PR, avg. mag >9, closed list	84	1788-2011	223169	0.005	0.071	0	1
- PR, avg. mag >9, open list	84	1788-2011	223169	0.037	0.189	0	1
- Mixed system	84	1788-2011	223169	0.013	0.115	0	1
- Indirect elections	84	1788-2011	223169	0.013	0.115	0	1
Eligible voters (ln)	92	1788-2011	229890	10.565	1.560	3.738	19.490
Margin of victory (incumbent and next)	72	1790-2011	159026	73.247	36.260	0	200
Margin of victory (top two)	86	1788-2011	209836	69.904	29.483	0	100
Round	93	1788-2011	244962	1.027	0.161	1	2
Secret ballot	86	1816-2011	239990	0.968	0.175	0	1
Suffrage dummies							
- Male suffrage	68	1788-2011	241068	0.584	0.493	0	1
- Female suffrage	68	1788-2011	241068	0.513	0.500	0	1
- Universal suffrage	68	1788-2011	241032	0.299	0.458	0	1
- Youth suffrage	63	1788-2011	238451	0.614	0.487	0	1
Suffrage extension	68	1788-2011	159026	0.000	0.006	0	1
Truncated margin (incumbent and next)	72	1790-2011	45482	70.152	31.651	0	100
Turnout	57	1847-2011	168168	0.745	2.045	0.023	405.014
Turnover	41	1790-2011	114451	0.278	0.448	0	1

APPENDIX B:

United States

Table B1:
Data Description (US)

	Electorate (1000s)			**Competitiveness**			**Coverage**		
	min	**Max**	**mean**	**min**	**max**	**mean**	**years**	**districts**	**contests**
Offices									
Mayoral	103	8,077	934	5.4	69.2	37.9	1969-2004	83	266
Lower state house	8	423	66	0	90.2	26.6	1968-2003	4,161	52,999
Upper state house	13	847	152	0	74.8	28.3	1968-2003	1,805	16,882
Governor	382	33,100	4,718	17.6	66.8	43.5	1977-2000	50	317
House of Rep	0.4	20,800	100	0	92.5	34.9	1788-2008	636	3,699
Senate	402	33,900	5111	0	55.9	40.2	1980-2000	100	376
President	157,000	291,000	223,000	38.9	57	47.9	1948-2000	1	14
Eras									
1788-1947				0	92.5	36.5			20,431
1948-69				0	65.5	32.8			6,925
1970-79				0	80.3	30.5			16,994
1980-89				0	79.3	26.5			21,348
1990-1999				0	90.2	27.0			25,081
2000-2008				0	89.8	26.8			11,262
Total	0.4	291,000	99	0	92.5	29.7	1788-2008	6,719	102,531

Empty cells = data not relevant.

Table B2:
Variable Definitions (US)

Variable	Definition *variablename*
College	Percent of electorate above 25 with bachelor's degree. *college*
High school	Percent of electorate above 25 with high school degree. *highschool*
Income per cap (ln)	Personal income per capita, natural logarithm. *incomepc_ln*
Urban	Urban population as percent of total. *urban_perc*

Note: Sources described in the text.

Table B3:
Descriptive Statistics (US)

Variable	Obs	Mean	SD	Min	Max
College	72136	0.184	0.097	0.019	0.643
High school	72136	0.290	0.136	0.028	0.923
Income per cap (ln)	72136	9.889	0.319	7.237	11.488
Urban	72136	73.298	29.358	0.000	100.344

APPENDIX C:

Brazil

Table C1:
Data Description (Brazil)

Table C2:
Variable Definitions (Brazil)

Variable	**Definition** ***variablename***
Income per cap (ln)	Personal income per capita, natural logarithm. *incomepc_ln*
Literacy	Percent of people above 15 who are literate, *literacy*
Urban	Urban population as percent of total. *urban_perc*

Note: Sources described in the text.

Table C3:
Descriptive Statistics (Brazil)

Variable	**Obs**	**Mean**	**SD**	**Min**	**Max**
Income per cap (ln)	42315	8.785	0.817	-0.712	10.878
Literacy	42315	78.974	12.551	26.660	99.090
Urban	42315	59.820	23.048	0.000	100.000

APPENDIX D:

Sweden

APPENDIX E:

Miscellaneous Robustness Tests

Table E1:
Electorate versus Turnout

	1	2	3	4	5	6
Sample	*MMDs & SMDs*			*MMDs*		
Electorate (ln)	1.795***	3.895***	4.129***	3.265***	3.306***	3.761***
	[0.132]	[0.282]	[0.401]	[0.275]	[0.410]	[0.785]
Turnout	0.112*	0.153**	0.151**	13.576***	26.220***	24.026***
	[0.061]	[0.073]	[0.066]	[2.481]	[2.437]	[2.055]
Year dummies	X	X	X	X	X	X
Country dummies		X			X	
District dummies			X			X
Years		1847-2011			1871-2011	
Countries		53			39	
Districts		7,931			2,182	
Observations		45,153			14,922	
R2 overall	0.346	0.420	0.222	0.416	0.475	0.385
R2 within			0.216			0.271

Outcome: Competitiveness. *Estimator:* OLS, standard errors clustered by district. *xtreg y x, fe vce(cluster id)*
Note: Electorate (ln) and Turnout are correlated at -.019 (Pearson's r) across the whole sample and at .254 for only MMDs.

APPENDIX F:

Robustness Tests where *Y*=Turnover

Table F1:
Regression Tests, *Y*=Turnover

	1	2	3	4	5	6
Outcome	Turnover	Turnover	Turnover	Turnover	Δ Turnover	Turnover
Electorate	-0.033***	0.018*	0.376***	0.840***		
(ln)	[0.008]	[0.011]	[0.032]	[0.054]		
Suffrage extension					0.779***	
(*N*=$)					[0.050]	
Male suffrage						0.842***
(*N*=$)						[0.078]
Female suffrage						-1.013***
(*N*=$)						[0.116]
Universal suffrage						-1.838**
(*N*=$)						[0.775]
Youth suffrage						0.069
(*N*=$)						[0.063]
Year dummies	X	X		X	X	X
Time trend			X			
Country dummies		X				
District fe			X	X	X	X
Years	1816-2011	1816-2011	1842-2010	1816-1940	1816-2010	1816-2010
Countries	41	41	35	11	30	30
Districts	19,259	18,917	11,608	$	12,227	$
Observations	152,336	152,335	119,787	29,989	130,620	130,619
Pseudo R2 (overall)	0.121	0.212	0.028	0.125	0.083	0.084

Outcome: Turnover. *Sample:* SMD elections (all offices). Logit analysis, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). Stata command: *xtlogit y x, vce(cluster id)*

Table F2:
Brazil, *Y*=Turnover

	1	**2**
Electorate (ln)	0.019	0.001
	[0.018]	[0.021]
State fe	X	X
Year fe	X	X
2d round	X	X
Urban		X
Income		X
Literacy		X
Contests (N)	16,351	16,351
Pseudo R2 (overall)	(0.018)	(0.018)

Outcome: Turnover. *Sample:* Mayoral elections in Brazil, 2004-08. Logit regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

Table F3:
United States: Regression Tests, *Y*=Turnover

	1	**2**
Electorate	0.145***	0.117***
(ln)	[0.014]	[0.024]
State fe	X	X
Year fe	X	X
Urban		X
Income		X
High school		X
College		X
Years	1790-2008	1968-2003
Contests (N)	92,221	67,258
Pseudo R2	(0.098)	(0.061)

Outcome: Turnover. *Sample:* SMD elections in the United States (all offices). Logit regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

Table F4:
United States: Matching Tests, *Y*=Turnover

	1	2	3
Sample	Senate, House	Gubernatorial, Upper state house	Upper, Lower state house
Years	1980-2000	1978-2000	1970-2003
Contests (N)	3,440	6,165	50,659
Treatment group	Senate	Gubernatorial	Upper house
Contests	350	227	10,284
Mean electorate	5,208,979	5,350,323	164,979
Control group	House	Upper house	Lower house
Contests	2,970	5,938	40,375
Mean electorate	185,197	148,011	66,074
MINIMAL specification (exact matching using CEM)			
Treatment effect	0.654***	1.073***	0.173***
(SATT)	[0.152]	[0.143]	[0.031]
State (exact)	X	X	X
Year (exact)	X	X	X
Exact matches	100%	100%	100%
MAXIMAL specification (nearest neighbor matching using NNMATCH)			
Treatment effect	0.097**	0.166***	$
(SATE)	[0.038]	[0.035]	
State (exact)	X	X	X
Exact matches	94%	71%	$%
Year	X	X	X
Urban	X	X	X
Income	X	X	X
High school	X	X	X
College	X	X	X

Exact matching using CEM (Blackwell et al. 2010) followed by logit analysis on matched observations. Nearest neighbor matching (Abadie et al. 2001). *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

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Table 2:
Global Tests

	1	**2**	**3**	**4**	**5**	**6**	**7**
Outcome	Comp	Comp	Comp	Comp	Comp	Comp	ΔComp
Districts	All	All	All	All	All	All	All
Electorate (ln)	6.643***	5.652***	1.523***	2.815***	7.334***		
	[0.262]	[0.245]	[0.067]	[0.091]	[0.371]		
Male suffrage						10.868***	
(*N*=7)						[0.533]	
Female suffrage						-4.483***	
(*N*=10)						[0.565]	
Universal suffrage						11.549***	
(*N*=6)						[1.157]	
Youth suffrage						0.268	
(*N*=33)						[0.275]	
Suffrage extension							2.082***
(*N*=56)							[0.185]
Electoral system dummies	X	X	X	X	X	X	X
Year dummies	X	X	X	X	X	X	X
District fe	X	X			X	X	X
Country dummies				X			
Lagged DV		X					
Years	1816-2011	1816-2011	1816-2011	1816-2011	1816-1919	1816-2011	1816-2011
Countries	78	68	78	78	15	58	58
Districts	26,610	22,148	26,610	26,610	3,209	25,640	25,652
Observations	202,274	176,667	202,274	202,274	37.876	211,491	211,527
R2 overall	0.048	0.183	0.228	0.353	0.143	0.077	0.026
R2 within	0.074	0.108			0.155	0.074	0.067

Ordinary least squares regression, standard errors clustered by district. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests). Stata command: *xtreg y x, fe vce(cluster id) Outcome:* Competitiveness (100 – vote share of largest party). *Electoral system dummies*: (a) SMD; (b) Majoritarian, block ballot; (c) PR, avg. mag <9; (d) PR, avg. mag >9, closed list; (e) PR, avg. mag >9, open list; (f) Mixed; (g) Indirect; (h) Secret ballot.