

The Value of a Vote: Malapportionment in Comparative Perspective

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Comparative studies of electoral institutions have largely neglected a fundamental characteristic of most of the world's electoral systems: malapportionment. This article provides a method for measuring malapportionment in different types of electoral systems, calculates levels of malapportionment in seventy-eight countries, and employs statistical analysis to explore the correlates of malapportionment in both upper and lower chambers. The analysis shows that the use of single-member districts is associated with higher levels of malapportionment in lower chambers and that federalism and country size account for variation in malapportionment in upper chambers. Furthermore, African and especially Latin American countries tend to have electoral systems that are highly malapportioned. The article concludes by proposing a broad, comparative research agenda that focuses on the origins, evolution and consequences of malapportionment.

The remarkable advance of democracy around the globe during the last twenty years has focused much attention on how different kinds of democratic institutions work. Building on an earlier generation of studies that addressed this issue by analysing a relatively small number of long-standing democracies, scholars have increasingly exploited an expanded dataset that includes the more than sixty countries comprising what Huntington has called the 'third wave' of democratization.¹ These efforts to broaden our understanding of the varied dynamics and institutional formats of democratic systems have been

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¹ Samuel P. Huntington, *The Third Wave: Democratization in the Late Twentieth Century* (Norman: Oklahoma University Press, 1991). See Arend Lijphart, *Democracies* (New Haven, Conn.: Yale University Press, 1984), and G. Bingham Powell, *Contemporary Democracies: Participation, Stability, and Violence* (Cambridge, Mass.: Harvard University Press, 1982), for exemplars of the earlier generation of studies. See Gary W. Cox, *Making Votes Count* (Cambridge: Cambridge University Press, 1997), for a recent work that employs an expanded dataset.

especially vigorous in the subfield of electoral studies, where a burgeoning cross-national literature has emerged on the political consequences of electoral laws.²

Curiously, however, this literature has largely neglected a fundamental characteristic of many of the world's electoral systems: malapportionment, or the discrepancy between the shares of legislative seats and the shares of population held by geographical units.³ This discrepancy has important political ramifications. From the standpoint of democratic theory, for example, malapportionment violates the 'one person, one vote' principle⁴ which, according to Dahl, is a necessary condition for democratic government.⁵ Taagepera and Shugart regard malapportionment as a 'pathology' of electoral systems, and Gudgin and Taylor conclude that it may be 'ethically unjustifiable'.⁶ Given these strong normative claims about malapportionment, it is surprising that students of democracy have devoted so little attention to this topic.

In addition to these normative issues, malapportionment can have important consequences for policy making. Recent work on cases as distinct as the United States, Brazil, Russia, Argentina, Japan and Mexico shows that malapportionment shapes the decision-making contexts of incumbent executives and legislators in ways that have major effects on policy choices and coalitional

² See, for example, Cox: *Making Votes Count*; Lijphart: *Democracies*; Arend Lijphart, *Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies, 1945–1990* (Oxford: Oxford University Press, 1994); Rein Taagepera and Matthew S. Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems* (New Haven, Conn.: Yale University Press, 1989).

³ Exceptions include Burt L. Monroe, 'Disproportionality and Malapportionment: Measuring Electoral Inequity', *Electoral Studies*, 13 (1994), 132–49; Burt L. Monroe, 'Bias and Responsiveness in Multiparty and Multigroup Representation' (paper presented at the Political Methodology Summer Meeting, UC San Diego, 1998); Burt L. Monroe, 'Mirror Representation in the Funhouse: Systematic Distortions in the Legislative Representation of Groups' (unpublished paper, University of Indiana, 1998); Lijphart, *Electoral Systems and Party Systems*, pp. 124–30; Bernard Grofman, William Koetzle and Thomas Brunell, 'An Integrated Perspective on the Three Potential Sources of Partisan Bias: Malapportionment, Turnout Differences, and the Geographic Distribution of Party Vote Shares', *Electoral Studies*, 16 (1997), 457–70; Alfred Stepan, 'Toward a New Comparative Analysis of Democracy and Federalism' (paper prepared for the Conference on Democracy and Federalism, Oxford University, 1997); and Ron Johnston, David Rossiter and Charles Pattie, 'Integrating and Decomposing the Sources of Partisan Bias: Brookes' Method and the Impact of Redistricting in Great Britain', *Electoral Studies*, 18 (1999), 367–78.

⁴ Michael Balinski and H. Peyton Young, *Fair Representation: Meeting the Ideal of One Man, One Vote* (New Haven, Conn.: Yale University Press, 1982).

⁵ Robert A. Dahl, *Polyarchy: Participation and Opposition* (New Haven, Conn.: Yale University Press, 1971), p. 2.

⁶ Taagepera and Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems*, pp. 17–18; Graham Gudgin and Peter J. Taylor, *Seats, Votes, and the Spatial Organisation of Elections* (London: Pion Limited, 1979). In addition Grofman *et al.* ('An Integrated Perspective on the Three Potential Sources of Partisan Bias') have recently shown that malapportionment, along with turnout differences and the geographic distribution of party votes, can contribute to partisan 'bias', that is, asymmetry in how party vote shares are translated into seat shares in the national legislature. See also Johnston *et al.*, 'Integrating and Decomposing the Sources of Partisan Bias'.

dynamics.⁷ These single-country studies suggest that malapportionment can have an important impact on executive–legislative relations, intra-legislative bargaining and the overall performance of democratic systems.

Despite the normative and practical importance of malapportionment, we know of no cross-national, comparative study of this key dimension of electoral systems.⁸ In this article, we seek to fill this gap by providing a method for calculating malapportionment cross-nationally and by measuring the degree of malapportionment in seventy-eight countries.⁹ We show that levels of malapportionment vary significantly in both upper and lower chambers and across regions, with African and especially Latin American countries having comparatively high levels of malapportionment. We also explore how important institutional variables, such as federalism, bicameralism and the structure of electoral districts, are associated with malapportionment. The final section concludes and provides suggestions for future research.

⁷ United States: Mathew D. McCubbins and Thomas Schwartz, 'Congress, the Courts, and Public Policy: Consequences of the One Man, One Vote Rule', *American Journal of Political Science*, 32 (1988), 388–415; Brazil: Barry Ames, *Political Survival: Politicians and Public Policy in Latin America* (Berkeley: University of California Press, 1987); Russia: Daniel Treisman, *After the Deluge: The Politics of Regional Crisis in Post-Soviet Russia* (Ann Arbor: University of Michigan Press, 1999); Argentina: Kent Eaton, 'Party, Province, and Coparticipación: Tax Reform in Argentina' (paper prepared for the 1996 Meeting of the American Political Science Association, San Francisco, 1996); Edward L. Gibson and Ernesto Calvo, 'Federalism and Low-Maintenance Constituencies: Territorial Dimensions of Economic Reform in Argentina', *Studies in Comparative International Development*, forthcoming; Japan: Michael Thies, 'When Will Pork Leave the Farm? Institutional Bias in Japan and the United States', *Legislative Studies Quarterly*, 23 (1998), 467–91; Mexico: Alberto Diaz-Cayeros, 'Federal Resource Allocation under a Dominant Party: Regional Financial Transfers in Mexico' (paper prepared for the 1996 Meeting of the American Political Science Association, San Francisco, 1996); Scott Morgenstern, 'Spending for Political Survival: Elections, Clientelism, and Government Expenses in Mexico', *División de Estudios Políticos*, No. 69 (Centro de Investigaciones y Docencia Económicas, Mexico, 1996).

⁸ Many studies explore apportionment in the United States (such as Gary W. Cox and Jonathan N. Katz, 'The Reapportionment Revolution and Bias in US Congressional Elections', *American Journal of Political Science*, 43 (1999), 812–41), and a handful of single-country studies analyse other cases (e.g., Hiroyuki Hata, 'Malapportionment of Representation in the National Diet', *Law and Contemporary Problems*, 53 (1990), 153–70, on Japan; and Jairo M. Nicolau, 'As Distorções na Representação dos Estados na Câmara dos Deputados Brasileiros', *DADOS: Revista de Ciências Sociais*, 40 (1997), 441–64, on Brazil). Lijphart's bivariate coding of countries (in *Electoral Systems and Party Systems*, p. 130) as either 'malapportioned' or 'not malapportioned' illustrates the impediments to cross-national research posed by the lack of an index for measuring levels of malapportionment.

⁹ Most of our cases would be classified as 'free' according to Freedom House (Freedom House, 2000. 'Country Ratings', on-line at <http://www.freedomhouse.org/ratings/>, accessed 14 April 2000). We do include some cases with 'semi-free' elections, however, because if fully democratic procedures are ever established in these cases, it is likely that current patterns of malapportionment will shape the dynamics of the emerging democratic regime.

MEASURING MALAPPORTIONMENT

At the broadest level, we can describe electoral systems as either *perfectly-apportioned* or *malapportioned*. In a perfectly-apportioned system, no citizen's vote weighs more than another's. The Israeli Knesset exemplifies such a system: its 120 members are elected in a single, national at-large district. Four other lower chambers in our sample are perfectly-apportioned: The Netherlands, Peru, Namibia and Sierra Leone.

In a malapportioned system, by contrast, the votes of some citizens weigh more than the votes of other citizens. In the most extreme case, a malapportioned system might allocate to a single person an electoral district (say, that person's home), one vote, and all the legislative seats. The rest of the population would hold all votes except one and would receive no seats. Although no real-world electoral system approximates this extreme, nearly all exhibit some malapportionment. Malapportionment thus seems a normal characteristic of most electoral systems.

How can we measure the degree of malapportionment across electoral systems? Ratios of largest-to-smallest districts might seem an obvious means for assessing malapportionment. However, such ratios actually prove poor indicators of malapportionment. First, district size on the basis of population tells us little about the degree to which districts are underrepresented or overrepresented: we also need to know how many seats are allocated to each district. Furthermore, even if we know how many seats are held by the largest and smallest districts and can therefore calculate ratios of 'worst represented' to 'best represented' districts, such ratios tell us little about overall degrees of malapportionment. For example, even if this ratio is 50:1 (e.g., a single-member district system in which the largest district has a population fifty times greater than the smallest district),¹⁰ all other districts may have nearly-equivalent populations, and, hence, the largest and smallest districts could be extreme outliers in a system with a low degree of average malapportionment. Although it may be tempting to interpret wide gaps between the best and worst represented districts as signs of high overall levels of inequality in electoral systems, a better measure is required.

With one important modification, the Loosemore–Hanby index of electoral disproportionality (D)¹¹ provides such a measure.¹² To calculate malapportion-

¹⁰ This is the case in India, where in 1991 the largest district for the national lower chamber (Thane) had a population of 1,744,592, whereas the smallest district (Lakshadweep) had a population of just 31,665. See David Butler, Lahiri Ashok and Roy Prannoy, *India Decides: Elections 1952–1995*, 3rd edn. (New Delhi: Books & Things, 1995), p. 16.

¹¹ Disproportionality arises when 'political parties receive shares of legislative seats that are not equal to their shares of votes'. By contrast, malapportionment 'occurs when geographical units have shares of legislative seats that are not equal to their shares of population' (Monroe, 'Disproportionality and Malapportionment', p. 138).

¹² This measure was previously employed to measure malapportionment in Brazil by Nicolau (see Nicolau, 'As Distorções na Representação dos Estados na Câmara dos Deputados Brasileiros'). We recognize that the Loosemore–Hanby index has certain shortcomings (Taagepera and Shugart, *Seats*

ment (which we call ‘MAL’ to avoid confusion with the widely-used ‘M’ that refers to district magnitude), one takes the absolute value of the difference between each district’s seat and population shares, adds them, and then divides by two.¹³ Thus, the formula is:

$$MAL = (1/2)\sum |s_i - v_i|$$

where sigma stands for the summation over all districts *i*, *s_i* is the percentage of all seats allocated to district *i*, and *v_i* is the percentage of the overall population (or registered voters)¹⁴ residing in district *i*. The example in Table 1 illustrates how to apply the formula.¹⁵

TABLE 1 *Distribution of Voters and Seats*

	District			
	1	2	3	4
Percentage of voters	40	30	20	10
Percentage of seats	36	24	23	17

For each district, the deviation from perfect apportionment is the difference between the district’s share of seats (*s*) and voters (*v*). To calculate overall malapportionment for the four districts, we first add the absolute values of the differences between seats and voters for each district. We then divide the total by two. So MAL = (1/2)(|36 – 40| + |24 – 30| + |23 – 20| + |17–10|) = 10 per

(F’note continued)

and Votes; Vanessa Fry and Iain McLean, ‘A Note on Rose’s Proportionality Index’, *Electoral Studies*, 10 (1991), 52–9; Michael Gallagher, ‘Proportionality, Disproportionality and Electoral Systems’, *Electoral Studies*, 10 (1991), 33–51; Monroe, ‘Disproportionality and Malapportionment’), principally that it does not respect Dalton’s Principle of Transfers (see Monroe, ‘Disproportionality and Malapportionment’, p. 139). However, because the Loosemore–Hanby index is widely-used and relatively straightforward to calculate, we decided to employ it. The Loosemore–Hanby index has an additional advantage: it is far easier to interpret than the alternative, ‘Equal Proportions’ index suggested by Monroe (‘Disproportionality and Malapportionment’, Table 1) that does satisfy the principle of transfers. The Equal Proportions index is a measure of distributional deviation that indicates the average difference between districts’ expected and actual shares of seats. The Loosemore–Hanby index, by contrast, measures how many actual seats are not apportioned equitably as a proportion of all seats in the legislature. Moreover, we calculated levels of malapportionment for all the cases in our sample using both indices, and we found that the resulting scores correlated strongly (at the 0.78 level). We also ran the regressions analysed below using both indices, and the same variables were significant to nearly the same degree. Readers interested in obtaining the data based on the Equal Proportions index should contact the authors.

¹³ See Taagepera and Shugart, *Seats and Votes*, pp. 104–5.

¹⁴ We use population per district whenever available. Most countries apportion seats on the basis of population rather than registered voters.

¹⁵ The example is adapted from Taagepera and Shugart, *Seats and Votes*, who discuss disproportionality rather than malapportionment.

cent, in this case. This score means that 10 per cent of the seats are allocated to districts that would not receive those seats if there were no malapportionment.

Multi-Tier Systems

Calculating malapportionment in cases with *single-tier* electoral systems, like the United States, is straightforward with the above formula. However, measuring malapportionment in cases with *multi-tier* systems, such as Germany, Mexico or Japan, is more complex because territorial units are allocated seats on different bases according to the rules for each tier.¹⁶ We propose the following five-step solution to this dilemma:¹⁷

- (1) *Calculate the percentage of seats awarded to each district without including any upper-tier seats in the total number of seats.* Using the above example of a four-district system, each district has respectively 36, 24, 23 and 17 per cent of the seats. For illustrative purposes, it helps to assume that the percentage of seats equals the number of seats, and thus the districts are awarded thirty-six, twenty-four, twenty-three and seventeen seats.
- (2) *Multiply the percentage of the country's total population residing in each district by the number of upper-tier seats.* Suppose in our example that a hundred legislators are also elected in a nationwide upper-tier district by list proportional representation. To calculate malapportionment, we assume that each lower-tier district is entitled to a proportion of upper-tier seats equal to that district's proportion of the national population. Thus, the four districts in our example would receive respectively 40, 30, 20 and 10 per cent of the upper-tier seats, or forty, thirty, twenty and ten seats.
- (3) *Add the number of upper-tier seats allocated to each district to the number of lower-tier seats allocated to each district.* In our example, each district would thus receive a total of seventy-six, fifty-four, forty-three and twenty-seven seats.

¹⁶ In single-tier systems, all electoral districts are *primary*, that is, they cannot be divided into smaller districts to which seats are allocated. By contrast, multi-tier systems contain secondary districts that can be partitioned into two or more primary districts (Cox, *Making Votes Count*, pp. 48–9). Multi-tier systems can have both a single-member district system as well as a proportional representation (PR) system laid 'on top' of the single-member (SMD) districts. See Luis Massicotte and André Blais, 'Mixed Electoral Systems: A Conceptual and Empirical Survey', *Electoral Studies*, 18 (1999), 341–66, for a discussion of such mixed, multi-tier electoral systems.

¹⁷ Our proposed solution to the problem of measuring malapportionment in multi-tier systems rests on the following assumptions. First, we assume that in systems where voters cast votes in each tier, they do not vote strategically. Furthermore, although upper tiers tend to reduce the localistic nature of elections, we assume that both voters and candidates 'think locally' in all tiers, and thus voters do not reason differently when casting votes in distinct tiers. Although they may not accurately reflect reality, these assumptions help us develop a simple, cross-national measure of malapportionment.

- (4) Calculate the new percentage of seats allocated to each district using the total number of seats in the national assembly. The addition of the upper-tier to the lower-tier districts yields the results shown in Table 2.

TABLE 2 *Distribution of seats in national assembly*

	District			
	1	2	3	4
Percentage of voters	40	30	20	10
Percentage of seats	38	27	21.5	13.5

- (5) Calculate malapportionment using the new percentage of seats for each district. Using the above example, $MAL = (1/2)(|38 - 40| + |27 - 30| + |21.5 - 20| + |13.5 - 10|) = 5\%$.

Our example suggests that upper tiers tend to reduce, but not eliminate, overall malapportionment. The case of Germany's lower chamber illustrates this point. If the Bundestag did not have an upper tier, malapportionment would double, increasing from 3 per cent to 6 per cent.

Three factors condition how upper tiers affect malapportionment: the degree of malapportionment in the lower tier, the number of seats allocated to the upper tier, and whether the upper tier allocates seats at the national or subnational level. Lijphart claims that national-level upper tiers will 'entirely eliminate' malapportionment.¹⁸ However, this is not necessarily the case. Although an inverse relationship does in fact exist between malapportionment and the number of seats allocated to national-level upper tiers (that is, as the number of seats increases, malapportionment declines), a national upper tier with few seats will only minimally reduce overall malapportionment, especially if the lower tier has a high degree of malapportionment.

Although national-level upper tiers necessarily reduce malapportionment, provincial, state or regional upper tiers can actually *increase* overall malapportionment if the seats in the tiers are themselves malapportioned. For example, Mexico's upper tier has five forty-seat districts with proportional representation (PR), and each district encompasses several of Mexico's states. Because the states have unequal populations, the population of each upper-tier district also varies, resulting in a degree of malapportionment in the upper tier. Thus, upper tiers do not necessarily decrease malapportionment.

Bicameral Systems

Bicameralism, like multi-tier systems, also complicates the measurement of malapportionment. Comparative studies of bicameralism suggest that upper chambers are significantly more malapportioned than lower chambers.¹⁹ Upper

¹⁸ Lijphart, *Electoral Systems and Party Systems*, p. 146.

¹⁹ See, for example, Stepan, 'Toward a New Comparative Analysis of Democracy and Federalism'; and Lijphart, *Democracies*, especially chap. 10.

chambers are commonly understood to overrepresent minority groups, especially citizens in smaller territorial units. Lower chambers, by contrast, are seen as much less likely to overrepresent minority groups.²⁰ Indeed, this interpretation of bicameralism fits the case of the United States. The Senate – where the states are awarded the same number of seats regardless of population – is extremely malapportioned. The House of Representatives, by contrast, has virtually no malapportionment.

However, it would be a mistake to assume that the world's other bicameral systems share this design. First, there is no *a priori* reason to suppose that upper chambers are more malapportioned than lower chambers: the converse might also be true (and, as we shall see, *is* indeed true in some cases). Secondly, regardless of which chamber has more malapportionment, we might expect many lower chambers to also have high degrees of malapportionment. In India, for example, a large number of lower chamber districts are reserved for designated castes or tribes, and many of these districts are overrepresented.²¹ And in cases such as Portugal and Croatia, lower-chamber seats are allocated to citizens residing outside the national boundaries (i.e., citizens do not vote as absentees, as US citizens may in Congressional elections).²² If such extra-territorial, 'diaspora districts' in the lower house have extremely small or geographically-scattered populations yet hold guaranteed quotas of seats, they may contribute to malapportionment in the same way as does the rule assigning equal numbers of seats to territorial units in many upper chambers. In short, we have compelling reasons to expect that the degree of malapportionment in lower and upper chambers varies significantly across bicameral systems.

Two additional factors complicate the relationship between bicameralism and malapportionment. First, one chamber may have significantly more power than the other.²³ Such asymmetries of power can have important consequences for how malapportionment affects legislative outcomes in bicameral systems. For example, in cases where one chamber lacks veto powers over key items (for example, the upper chambers in Japan and Mexico, which have historically lacked veto powers over budgets), a high degree of malapportionment in the weaker chamber may be inconsequential for most legislation. However, in cases where the distribution of power between chambers is relatively symmetrical

²⁰ Hence, one recent comparative study of federal systems (Stepan, 'Toward a New Comparative Analysis of Democracy and Federalism') refers to the lower chamber as the 'one person, one vote' chamber, in contrast to the 'territorial' (i.e., upper) chamber.

²¹ Other countries, such as Colombia and New Zealand, reserve seats for indigenous peoples on a non-geographic basis: indigenous groups in Colombia elect two representatives in a national at-large district; Maori voters in New Zealand elect five representatives in a separate tier of single-member districts. We do not include such non-geographic seats in our calculations of malapportionment. We also exclude appointed and ex-officio members of the lower chambers from our calculations.

²² In the Croatian case, this arrangement appears to favour a permanent, institutionally-entrenched revanchism.

²³ Lijphart, *Democracies*; George Tsebelis and Jeannette Money, *Bicameralism* (Cambridge: Cambridge University Press, 1997).

(such as Argentina and the United States), malapportionment in either chamber is likely to have a major impact on legislative outcomes.

Secondly, even if both chambers in a bicameral system are malapportioned, the same territorial units may not be overrepresented and underrepresented equally in each chamber. Empirical scrutiny might even reveal *cross-cutting* malapportionment: for example, the lower chamber might overrepresent urban areas, whereas the upper chamber might overrepresent rural areas. Although it is beyond the scope of this article, assessing whether malapportionment between chambers is reinforcing or cross-cutting poses an important task for future research.

MALAPPORTIONMENT IN COMPARATIVE PERSPECTIVE

Table 3 summarizes data on the degree of malapportionment in lower chambers (*MAL_{LC}*) for all seventy-eight countries in our sample.²⁴ The table also indicates whether the country is federal, whether the lower chamber has a tier, and whether the lower chamber employs single-member districts (SMD). As discussed below, these variables are especially likely to be associated with the degree of malapportionment in lower chambers. The table shows that the degree of malapportionment varies dramatically across countries.²⁵ Five lower chambers are perfectly-apportioned, and malapportionment in the remaining cases ranges from 0.01 to 0.26, which means that between 1 per cent and 26 per cent of the seats in these chambers are allocated in ways that violate the ‘one person, one vote’ principle. Mean lower chamber malapportionment is 0.07, with a standard deviation of 0.06.

Where do we find the countries with the highest levels of lower-chamber malapportionment? The most-malapportioned countries in our sample are in less-developed regions with many recently-established democracies: twelve of twenty-two Latin American and Caribbean lower chambers score above the mean, and seven of fourteen African lower chambers score above the mean. By contrast, only six of twenty-three Western European and North American lower chambers score above the mean, and only two of nineteen Asian, former Soviet, and Eastern European cases score above the mean. For the advanced industrial democracies, the mean is 0.04. Interestingly, our data suggest that malapportionment in Africa plays a major role in countries with a British colonial legacy (for example, Gambia, Ghana, Kenya, Malawi, Tanzania and Zambia).

Table 4 lists the twenty most-malapportioned lower chambers. It highlights the severity of malapportionment in many poor, recently-established democracies. Of the twenty countries in Table 4, eighteen are either recently-consolidated democracies, unconsolidated democracies, or developing

²⁴ Table 5 below presents data on malapportionment in upper chambers.

²⁵ In Table 3, we calculated the degree of malapportionment using data from the most recent elections for which reliable information was available. See Appendix A on the website version of this article for information about sources.

TABLE 3 *Lower-Chamber Malapportionment in Seventy-Eight Countries*

Country	MAL_{LC}	Year	Federal	Tier	SMD
Andorra	0.1307	1997		Yes	
Argentina	0.1405	1995	Yes		
Australia	0.0241	1996	Yes		Yes
Austria	0.0643	1994	Yes		
Barbados	0.0364	1994			Yes
Belize	0.0753	1993			Yes
Benin	0.0319	1995			
Bolivia	0.1677	1997		Yes	
Brazil	0.0913	1998	Yes		
Burkina Faso	0.0325	1997			
Canada	0.0759	1997	Yes		Yes
Chile	0.1509	1997			
Colombia	0.1324	1994		Yes	
Costa Rica	0.0215	1994			
Cyprus	0.0140	1995			
Czech Republic	0.0271	1996			Yes
Denmark	0.0524	1997			
Dominican Rep.	0.0793	1986		Yes	
Ecuador	0.2040	1998			
El Salvador	0.0713	1997		Yes	
Estonia	0.0140	1995			
Finland	0.0088	1991			
France	0.0695	1998			Yes
Gambia	0.1395	1992			Yes
Georgia	0.0896	1995		Yes	Yes
Germany	0.0344	1994	Yes	Yes	Yes
Ghana	0.1782	1996			Yes
Greece	0.0406	1997		Yes	
Guatemala	0.0609	1990			
Honduras	0.0404	1997			
Hungary	0.0274	1998		Yes	
Iceland	0.1684	1995			
India	0.0622	1991	Yes		Yes
Ireland	0.0255	1992			
Israel	0.0000	1999			
Italy	0.0082	1996			
Jamaica	0.0755	1997			Yes
Japan	0.0462	1995		Yes	Yes
Kenya	0.1946	1997			Yes
Korea	0.2075	1996			Yes
Latvia	0.0065	1995			
Liechtenstein	0.0725	1997			
Malawi	0.1659	1994			Yes
Mali	0.0522	1997			
Malta	0.0088	1996			
Mexico	0.0636	1997	Yes	Yes	Yes

TABLE 3—continued

Country	MAL_{LC}	Year	Federal	Tier	SMD
Namibia	0.0000	1996			
Netherlands	0.0000	1996			
New Zealand	0.0163	1997		Yes	Yes
Nicaragua	0.0596	1996		Yes	
Norway	0.0657	1993			
Panama	0.0582	1993			
Paraguay	0.0405	1993			
Peru	0.0000	1993			
Poland	0.0174	1997		Yes	
Portugal	0.0174	1995			
Romania	0.0447	1996			
Russia	0.0382	1995	Yes	Yes	Yes
Senegal	0.0361	1998		Yes	
Seychelles	0.0808	1998			Yes
Sierra Leone	0.0000	1996			
Slovakia	0.0131	1994			
Slovenia	0.0166	1997			
South Africa	0.0342	1995	Yes	Yes	
Spain	0.0963	1996	Yes		
Sri Lanka	0.0483	1994		Yes	
St Lucia	0.1622	1997			Yes
Sweden	0.0110	1998			
Switzerland	0.0193	1995	Yes		
Tanzania	0.2619	1995			Yes
Thailand	0.0455	1996			
Turkey	0.0859	1995			
UK	0.0456	1997			Yes
Ukraine	0.0129	1998		Yes	Yes
Uruguay	0.0338	1992			
USA	0.0144	1992	Yes		Yes
Venezuela	0.0723	1998	Yes	Yes	Yes
Zambia	0.1725	1996			Yes

TABLE 4 Lower Chamber Malapportionment, Twenty Most-Malapportioned Cases

Rank	Country	MAL_{LC}	Rank	Country	MAL_{LC}
1	Tanzania	0.2619	11	Chile	0.1509
2	Korea	0.2075	12	Argentina	0.1405
3	Ecuador	0.2040	13	Gambia	0.1395
4	Kenya	0.1946	14	Colombia	0.1324
5	Ghana	0.1782	15	Andorra	0.1307
6	Zambia	0.1725	16	Spain	0.0963
7	Iceland	0.1684	17	Brazil	0.0913
8	Bolivia	0.1677	18	Georgia	0.0896
9	Malawi	0.1659	19	Turkey	0.0859
10	St Lucia	0.1622	20	Seychelles	0.0808

countries, whereas only two small countries (Iceland and tiny Andorra) are Western democracies. Thus our data challenge the implicit argument in recent studies of bicameralism and federalism²⁶ that malapportionment exists mainly in upper chambers. Contrary to these claims, our data show that a high degree of malapportionment also characterizes lower chambers in many countries – especially those with newly-democratic regimes.

Upper Chamber Malapportionment

Malapportionment in upper chambers (MAL_{UC}) ranges from 0.00 to 0.49. Mean malapportionment in upper chambers is 0.21, with a standard deviation of 0.16. This score is significantly different (in a two-tailed *t*-test, at the 0.01 level) from the average for lower chambers, which confirms the conventional view that malapportionment is generally greater in upper chambers. Table 5 ranks all twenty-five upper chambers in our sample according to the degree of malapportionment. The table also indicates whether the country is federal or not (only Japan, Italy and Mexico employ an upper tier in their senates, and only the Czech and Dominican Republics employ SMDs in their senates).²⁷

TABLE 5 *Malapportionment in Upper Chambers*

Country	MAL_{UC}	Federal	Country	MAL_{UC}	Federal
1 Argentina	0.4852	Yes	14 S. Africa	0.2261	Yes
2 Brazil	0.4039	Yes	15 Poland	0.2029	
3 Bolivia	0.3805		16 Japan	0.1224	
4 Dominican Rep.	0.3787		17 India	0.0747	Yes
5 USA	0.3642	Yes	18 Romania	0.0592	
6 Switzerland	0.3448	Yes	19 Austria	0.0301	Yes
7 Russia	0.3346	Yes	20 Italy	0.0292	
8 Venezuela	0.3265	Yes	21 Czech Rep.	0.0257	
9 Chile	0.3106		22 Colombia	0.0000	
10 Australia	0.2962	Yes	23 Paraguay	0.0000	
11 Spain	0.2853	Yes	24 Uruguay	0.0000	
12 Germany	0.2440	Yes	25 Netherlands	0.0000	
13 Mexico	0.2300	Yes			

A comparison of Table 5 with Table 4 shows that the most-malapportioned upper chamber scores almost twice as high as the most-malapportioned lower chamber. Moreover, eleven of the upper chambers score higher than the most-malapportioned lower chamber. Clearly, malapportionment can be significantly more acute in upper chambers. At the same time, it bears emphasis that eight of the upper chambers in our sample score below the mean for *lower chamber* malapportionment, and four of those eight have no malapportionment

²⁶ E.g., Tsebelis and Money, *Bicameralism*, p. 46.

²⁷ Note that less-developed and newly-democratic countries are more evenly spread across the sample of upper chambers than across the sample of lower chambers (see Table 4).

at all. In short, although malapportionment in upper chambers may reach far higher levels than in lower chambers, upper chambers are not necessarily malapportioned.

The Correlates of Malapportionment

What explains the significant cross-national variation we observe in the degree of malapportionment in both lower and upper chambers? To address this question, we employ regression analysis to explore the relationship between malapportionment and the following factors: district magnitude; district structure; federalism; the ‘intensity’ of democracy; country size; and geographic region. We focus on these six variables because existing work on electoral institutions suggests they are likely to have an important impact on how shares of population are translated into shares of legislative seats.

District Magnitude: By ‘eyeballing’ the data on lower chambers, we noted that many single-member district (SMD) systems appear to have above-average malapportionment (see Table 3). What explains this regularity? There may be a straightforward, mechanical explanation for this pattern: if the number of members per district is fixed at one and subnational units (such as provinces, states, special districts or even islands) cannot be subsumed into other districts for historical or other reasons, then there will necessarily be some malapportionment. Yet if the number of members per district is variable, then apportionment constraints are likely to be less severe, and a greater possibility will exist for achieving low levels of malapportionment.

There may also be a behavioural reason for the above-average malapportionment seen in SMD systems: we hypothesize that SMD systems should have more malapportionment than multi-member district (MMD) systems because, *ceteris paribus*, legislators in SMD systems have higher stakes *as individuals* in reapportionment decisions. Legislators in SMD systems face a far greater probability than legislators in MMD systems that ‘their’ district will be targeted for elimination or redesign in reapportionment processes. Thus we should expect that legislators in SMD systems often resist reapportionment and that, consequently, such systems will tend to reduce malapportionment more slowly than MMD systems.²⁸ We operationalize this hypothesis by employing a dummy variable that assigns SMD systems a value of ‘1’ and all other systems a value of ‘0’ (multi-tier systems with SMD lower tiers are given a value of ‘0’).

District Structure: Do systems with upper tiers have more or less malapportionment than systems without tiers? Because upper tiers tend mathematically to reduce malapportionment, this factor should be associated with lower levels of malapportionment. We operationalize district structure as a dummy variable: all

²⁸ District magnitude obviously offers at best a partial explanation for cross-national variation in levels of malapportionment, because countries such as the United States and Australia have very low malapportionment yet also employ SMDs.

'tiered' systems ($N = 20$) are given a value of '1'; 'tierless' systems are given a value of '0.'

Federalism: Are federal systems more malapportioned than unitary systems? Because all federal systems provide some form of territorial representation (although not necessarily according to the principle of equal representation for unequally-populated territorial units employed in the United States), they should have higher levels of malapportionment than unitary systems. The regression analysis below tests whether federal and unitary systems have different degrees of malapportionment. Federalism is coded as a dummy variable, with federal systems having a value of '1'.

Democracy: Our observation that unconsolidated and recently-consolidated democracies have especially high levels of lower chamber malapportionment raises the question of whether the 'intensity' of democracy is associated with malapportionment. Freedom House's widely-used ranking of countries according to civil liberties and political rights offers a helpful means for addressing this question. The Freedom House ranking assigns countries values ranging from 1 to 7, with a score of 1 the most democratic. If a relationship exists between 'less' democracy and 'more' malapportionment, we thus expect the sign to be negative.²⁹

Country Size: Are big countries more malapportioned? Some of the world's largest countries, such as Australia, Brazil, Canada and Russia, have high levels of malapportionment in one or both chambers. Because they usually have large expanses of sparsely-populated territory, big countries may be prone to over-represent underpopulated regions. To test this possibility, we hypothesize that malapportionment should increase with country size. Size is measured in square kilometers.

Region: As noted above, countries in some regions of the world appear to have especially high levels of malapportionment. To test the relationship between region and malapportionment, we use dummy variables for the following four regions: Latin American and the Caribbean, Asia, Europe and North America, and Africa. We exclude the European/North American dummy as a control. Consequently, significant coefficients for any of the other three region dummy variables mean that the countries in the region have levels of malapportionment that differ significantly from the average level of malapportionment for the European/North American region.

Table 6 presents regression results (using OLS) for the sample of lower chambers.³⁰

The results support some of our arguments. First, only the 'Latin America' variable differs systematically from the mean of the excluded region dummy. Lower chambers in Latin America are typically about 4 per cent more malapportioned than lower chambers elsewhere. The fact that the 'Africa'

²⁹ We averaged Freedom House's 'Civil Liberties' and 'Political Rights' scores to get a single number that ranges between 1 and 7.

³⁰ The results were generated using the White correction procedure for heteroscedasticity in STATA version 6.0. These regressions are free of autocorrelation.

TABLE 6 *Factors Associated with Lower-Chamber Malapportionment*

Independent variables	Coefficient (s.e.)
Constant	0.028** (0.013)
Size	- 1.60E-09 (1.94E-09)
Africa	0.038 (0.020)
Asia	- 0.001 (0.025)
Latin America	0.039** (0.018)
Federalism	- 0.006 (0.019)
Democracy	(0.004) (0.006)
SMD	0.039*** (0.014)
Upper Tier	0.002 (0.016)
R^2	0.25
F	2.86
Degrees of Freedom	69

** = $p < 0.05$

*** = $p < 0.01$

variable is not significant may be due to the divergent effects of the French and British colonial legacies in that region, especially the different impact on malapportionment of the multi-member district systems characterizing the former-French colonies, on the one hand, and the single-member district systems characterizing the former-British colonies, on the other.³¹ This hypothesis regarding the African region is supported by the score of the 'SMD' variable, which shows that single-member district systems are associated with significantly higher malapportionment (about 4 per cent on average).

None of the other variables is significantly associated with malapportionment in lower chambers. In particular, note that the 'upper tier' variable is not significant. That is, although upper tiers mathematically reduce malapportionment, in reality the level of malapportionment in the *lower* tier in many multi-tier

³¹ We do not test for this difference statistically because of the relatively small number of African cases in our sample.

TABLE 7 *Factors Associated with Upper-Chamber Malapportionment*

Independent variables	Coefficient (s.e.)
Constant	0.139 (0.083)
Size	1.3E-08** (0.000)
Africa	0.006 (0.054)
Asia	0.018 (0.083)
Latin America	0.189* (0.095)
Federalism	0.143** (0.069)
Democracy	-0.052 (0.039)
SMD	0.098 (0.134)
Upper Tier	-0.019 (0.053)
R^2	0.50
F	3.99
Degrees of Freedom	16

* = $p < 0.10$

** = $p < 0.05$

systems may be large enough to override the mitigating effects of the upper tier. Thus the use of tiers is not in fact associated with lower malapportionment.³²

Table 7 presents results (using ordinary least squares or OLS) for the sample of upper chambers. Recall that we had already determined that, in general, upper chambers are likely to be more malapportioned than lower chambers. We included the same variables as in the regression for lower chambers. This regression also provides support for some of our claims: once again, legislatures in Latin America are significantly more malapportioned than legislatures in the control region. In contrast to the result for lower chambers, however, the 'SMD' variable is not significant, whereas the 'Federalism' variable is significant. This result suggests that upper chambers in federal systems are significantly more

³² We also ran regressions using the percentage of seats in the upper tier and whether the tier was national or not. In no case was any tier variable shown to be significant. To save on degrees of freedom in the 'upper chamber' regression (because another inference was more important to test, see below), we do not show these results.

malapportioned than upper chambers in non-federal systems. Indeed, by examining Table 5, we can see that four of the ‘non-federal’ upper chambers in the sample are perfectly-apportioned and that only three non-federal upper chambers (all in Latin America) have greater-than-average levels of malapportionment. In addition, the ‘Size’ variable is significant, indicating that malapportionment is associated with country size, but *only in upper chambers*. Unfortunately, with this relatively small sample size it is not possible to separate the effects of federalism from country size – in fact, these two variables are correlated, although not perfectly (0.46).³³

In sum, the regression analysis helps pinpoint several key correlates of malapportionment. Malapportionment is generally more severe in Latin American countries, in both upper and lower chambers. For all lower chambers (as well as unicameral systems), the use of single-member districts correlates strongly with higher levels of malapportionment. However, contrary to the expectations of some scholars,³⁴ we found that legislative chambers with upper tiers do not have lower-than-average malapportionment. Finally, upper chambers do not *necessarily* have high levels of malapportionment: large, federal countries are more likely to have highly malapportioned upper chambers than are small, unitary countries with bicameral systems.

QUESTIONS FOR FUTURE RESEARCH

The findings presented above suggest several intriguing avenues for future research on malapportionment.

Malapportionment and Strategic Politicians

One fruitful area for future research involves how malapportionment can be employed as an independent variable, as an institutional factor that shapes politicians’ strategies for pursuing policy agendas. For example, by influencing the ‘costs’ of buying support in the legislature or from voters, malapportionment may have a decisive effect on the coalition-building efforts of executives. Overrepresented districts (i.e., districts whose share of legislative seats exceeds their share of a country’s population) should offer more ‘political bang for the buck’ than underrepresented districts (i.e., districts whose share of legislative seats is less than their share of a country’s population). In malapportioned systems, executives may thus face powerful incentives to build policy coalitions based on the ‘cheap’ support (for example, in terms of pork per vote) of legislators from overrepresented districts.

As noted above, recent studies of bicameral, federal systems have already

³³ Size and malapportionment are correlated both for the subset of nonfederal upper chambers (0.29) and federal upper chambers (0.34).

³⁴ For example, Lijphart, *Electoral Systems and Party Systems*, p. 146.

started to explore how malapportionment affects legislative processes.³⁵ Although our findings about the cross-national significance of malapportionment provide encouraging support for these efforts, the data we analyse also suggest the importance of incorporating unicameral and unitary systems into the study of malapportionment.³⁶ In addition to probing how malapportionment affects legislative dynamics and executive strategies in unicameral and unitary systems, scholars should explore whether different institutional factors mitigate or exacerbate the impact of malapportionment. Do similar levels of malapportionment have stronger effects on legislative dynamics in federal or unitary systems? The same question could be posed for bicameral and unicameral systems.

Malapportionment and Democratization

The impact of malapportionment on the performance and fortunes of newly-democratic countries offers another intriguing area for future research. Our data suggest that new democracies are more likely than longstanding democracies to experience high levels of malapportionment: fifteen of the twenty countries with the most-malapportioned lower chambers have either completed transitions to democracy since 1975 or are still undergoing transitions. Thus malapportionment appears to be a key component of electoral systems in many newly-democratic countries.

One important question involves whether malapportionment in new democracies introduces a 'conservative bias' into the political system. In Latin America, for example, studies suggest that malapportionment tends to favour politically-conservative rural districts at the expense of politically-progressive urban districts.³⁷ Future studies should address the issue of conservative bias by exploring how malapportionment shapes the fortunes of both left-wing and right-wing parties.

A related topic concerns the effects of malapportionment on subnational politics. In new and emerging democracies, overrepresentation of rural districts caused by malapportionment might contribute to the maintenance and even proliferation of non-democratic enclaves at the subnational level.³⁸ Malappor-

³⁵ Cf. Tsebelis and Money, *Bicameralism*; William B. Heller, 'Bicameralism and Budget Deficits: The Effect of Parliamentary Structure on Government Spending', *Legislative Studies Quarterly*, 22 (1997), 485–516; Gibson and Calvo, 'Federalism and Low-Maintenance Constituencies'.

³⁶ For example, in unitary, unicameral cases with high levels of malapportionment, such as Tanzania, Ecuador, South Korea and Kenya, executives may have strong incentives to build policy coalitions around overrepresented districts.

³⁷ In this respect, malapportionment may have facilitated transitions to democracy by giving guarantees to anti-democratic rural elites that their interests would be protected under the new democratic regime.

³⁸ On the issue of how national-level political and economic liberalization can contribute to the maintenance of subnational authoritarian regimes, see Guillermo O'Donnell, 'On the State, Democratization, and Some Conceptual Problems (A Latin American View with Glances at Some Post-Communist Countries)', *World Development*, 21 (1993), 1355–70; Jonathan Fox, 'The Difficult

tionment could compel pro-democratic elites at the national level to tolerate subnational authoritarian enclaves, because these elites may rely on overrepresented, non-democratic localities to secure the national legislative majorities they need to achieve their policy goals. Ironically, the ability of national-level incumbents to implement and consolidate democratic reforms in a highly malapportioned system may therefore depend on winning the overvalued support of subnational authoritarian elites.³⁹ At the same time, overrepresentation of subnational authoritarian enclaves in the national legislature may strengthen the ability of these subnational elites to fend off efforts by external groups that seek to reform local politics. Thus malapportionment could contribute to a process whereby democracy is simultaneously strengthened at the centre and undermined on the periphery. How malapportionment shapes local politics in newly-democratic regimes – especially the issue of whether malapportionment helps protect subnational authoritarian enclaves – is an exciting question for future research.

The impact of malapportionment on the capacities of new democratic regimes to sustain painful, market-oriented economic policy reforms also poses intriguing questions. In highly malapportioned systems, politicians may be able to sustain such policies by shielding select areas from the costs of reform, or by compensating them through targeted transfers of public resources. These kinds of reform strategies seem especially feasible in cases where poor, sparsely-populated rural areas command a disproportionate share of national legislative seats. In such cases, a modest amount of well-targeted pork may go a long way towards securing legislative majorities for reform.⁴⁰ Conversely, in a system with low levels of malapportionment, the strategy of forging legislative majorities by shielding or buying-off constituencies might prove so costly that it would be fiscally incompatible with economic reform.

The Evolution of Malapportionment

This study offers a cross-sectional ‘snapshot’ of malapportionment in a large sample of countries. Here, we have not attempted to develop a longitudinal

(F note continued)

Transition from Clientelism to Citizenship: Lessons from Mexico’, *World Politics*, 46 (1994), 151–84; Richard Snyder, ‘After Neoliberalism: The Politics of Reregulation in Mexico’, *World Politics*, 51 (1999), 173–204; and Richard Snyder, ‘After the State Withdraws: Neoliberalism and Subnational Authoritarian Regimes in Mexico’, in Wayne A. Cornelius *et al.*, eds, *Subnational Politics and Democratization in Mexico* (La Jolla, Calif.: The Center for US–Mexican Studies, University of California, San Diego, 1999).

³⁹ Conversely, low levels of malapportionment might work against such dependence on local authoritarian actors. It may be that levels of malapportionment tend to be higher in new democracies with powerful rural elites because of the ability of these elites to defend their interests during an earlier historical era (i.e., the nineteenth century) by gaining overrepresentation in exchange for supporting the nation-building and state-building projects of urban-based elites.

⁴⁰ The case of Argentina seems to fit this pattern. See Gibson and Calvo, ‘Federalism and Low-Maintenance Constituencies’.

analysis of how malapportionment changes over time, although we regard this task as an important priority for future research.⁴¹ Such a longitudinal perspective could be achieved by compiling an index of the frequency and types of reapportionment across cases. This perspective would help us assess whether contemporary democracies are moving towards or away from the ‘one person, one vote’ principle.⁴²

A longitudinal analysis of malapportionment would also contribute to developing a comparative theory of the politics of reapportionment. We might begin to build such a theory by identifying the conditions under which political incumbents have incentives to support or oppose reapportionment. District magnitude may have an especially powerful effect on these incentives. In systems with single-member districts, for example, incumbents may have weak incentives to redistrict, since reapportionment would appear to carry a strong risk of eliminating ‘their’ districts. This hypothesis might help explain the extremely high levels of malapportionment we observed among former British colonies in Africa and the Caribbean, which all inherited single-member systems from their colonial pasts.⁴³

Those interested in developing a theory of the politics of reapportionment could also benefit from studying the historical origins of malapportionment. In many contemporary democracies, the roots of malapportionment may lie in historical processes of state-building and nation-building. Overrepresentation of rural districts in many Latin American countries, for example, potentially served as a tool for incorporating rural elites into nation-building projects during the nineteenth and early twentieth century, as it did for small states during the US constitutional convention. Because sparsely-populated rural areas would have faced the unattractive prospect of becoming ‘permanent losers’ to urban areas in perfectly-apportioned electoral arenas, malapportionment may have been a concession made by urban nation-builders to rural elites. Future research

⁴¹ A few scholars have explored the evolution of malapportionment in the United States (e.g., Cox and Katz, ‘The Reapportionment Revolution and Bias in US Congressional Elections’); Britain (cf. Iain McLean and Roger Mortimore, ‘Apportionment and the Boundary Commission for England’, *Electoral Studies*, 11(1992), 293–309); and Brazil (e.g., Nicolau, ‘As Distorções na Representação dos Estados na Câmara dos Deputados Brasileiros’). However, longitudinal studies of apportionment in other countries are scarce.

⁴² Mexico, for example, appears to be moving towards a less malapportioned system as it slowly democratizes (personal communication from Jeffrey Weldon, Department of Political Science, Instituto Tecnológico Autónomo de México). Likewise, Japan adopted a new electoral system in 1994 that significantly reduced malapportionment – compare the figures in Hata (‘Malapportionment of Representation in the National Diet’) with our figures, which rely on more recent data.

⁴³ A focus on cross-national variation in who controls apportionment – for example, individual legislators, parties, courts or an autonomous government agency – could also contribute to developing a theory of the politics of reapportionment. See Richard Snyder and David Samuels, ‘Devaluing the Vote: Latin America’s Unfair Elections’ (paper prepared for the Conference on Federalism, Democracy, and Public Policy, Centro de Investigaciones y Docencia Económicas, Mexico City, Mexico, 1999).

should address whether malapportionment served this historical purpose of helping 'bring together' new nations.⁴⁴

The possibility that malapportionment may have played such a role in historical processes of nation-building raises the question of whether institutionally-engineered inequalities of representation could have similar integrative effects in the future. Despite scholarly warnings about its 'pathological' and 'ethically unjustifiable' nature, malapportionment might serve as an important tool for helping contemporary democracies cope with explosive problems ranging from ethnic conflict to urban–rural inequity.

CONCLUSION

Comparative studies of democratic regimes have largely ignored a crucial aspect of electoral systems: malapportionment. We have addressed this shortcoming by providing a method for measuring malapportionment in different types of electoral systems, showing that significant degrees of malapportionment exist across a broad range of cases, and identifying some of the correlates of malapportionment. Our results offer a ready-to-use continuous variable for regression analysis of a large sample of countries, and we have proposed a number of key areas for future research.

⁴⁴ On the important role that federalism played in this regard, see Juan J. Linz, 'Democracy, Multinationalism, and Federalism' (paper prepared for the Conference on Federalism and Democracy, Oxford University, June 1997). We borrow the notion of 'bringing together' from Linz. As one reviewer observed, scholars have long noted the relative stability of many former British colonies, and the high levels of malapportionment we see among ex-British colonies in Africa may help explain the stability of some of these regimes. This potential connection between institutional design at the onset of independence and subsequent regime stability merits further investigation.

APPENDIX A: DATA SOURCES

Country	Source
Andorra	Andorra Government website (www.cria.ed/elections)
Argentina	Ernesto Cabrera, 'Multiparty Politics in Argentina? Electoral Rules and Changing Patterns', <i>Electoral Studies</i> 15 (1997), 477-95.
Australia	Australia Government website (www.acc.gov.au/elect96.html); Stepan 1997, see fn. 3.
Austria	Lijphart Elections Archive (dodgson.ucsd.edu/lij/ausdat.html).
Barbados	Political Database of the Americas (1999) Barbados: Parliamentary Elections, 1999. Georgetown University and the Organization of American States, in: http://www.georgetown.edu/pdba/Elecdata/Barbados/barbados99.html .
Belize	Lijphart Elections Archive (dodgson.ucsd.edu/lij/blz93b.html).
Benin	Personal communication with Professor Shaheen Mozaffar, Department of Political Science, Bridgewater State College.
Bolivia	Bolivian Electoral Court website (http://ns.bolivian.com/cne/).
Brazil	Brasil, 1994. 'Resultados das Eleicoes de 1994' (computer files). Brasilia: Tribunal Superior Eleitoral.
Burkina Faso	<i>Le Pays</i> (no. 1395) (Monday, 19 May 1997), p. 7.
Canada	Elections Canada website (www.elections.ca/election/results/results-e.html).
Chile	<i>El Mercurio</i> website (www.mercurio.cl/eventos/eleccion97/portfichas.html); Georgetown Political Database of the Americas website (www/georgetown.edu/LatAmerPolitical/Elecdata/Chile/chile93.html).
Colombia	Colombia, 1994. <i>Elecciones del Congreso, 1994</i> (vols 1 and 2). Bogota: República de Colombia.
Costa Rica	Costa Rica, 1994. 'Computo de Votos y Declaratorias de Eleccion de 1994'. San Jose: Tribunal Supremo de Elecciones.
Cyprus	Lijphart Elections Archive (dodgson.ucsd.edu/lij).
Czech Rep.	Czech Republic Elections Commission website (www.volby.cz/_ASCII_/volby/en/)
Denmark	Danish Elections website (http://www.dknet.dk/valg94/english.html)
Dominican Republic	Juan Jaramillo, ed, (<i>Poder Electoral y Consolidación Democrática: Estudios Sobre la Organización Electoral en América Latina</i> , 1989). San Jose (Costa Rica): CAPEL, and DR Electoral Court website (http://jce.do/elecciones98/bfinal/welcome.htm).

Country	Source
Ecuador	Ecuador Elections Website (mia.lac.net/opcion96/resultados/exitdipp.htm).
El Salvador	Jack Spence <i>et al.</i> , <i>El Salvador: Elections of the Century: Results, Recommendations, Analysis</i> (Cambridge, Mass.: Hemisphere Initiatives, 1994).
Estonia	Estonian Parliamentary website (http://www.rk.ee/VVK/r95/e95index.html).
Finland	Sami Borg and Risto Sinkiaho, eds, <i>The Finnish Voter</i> (Tampere: Finnish Political Science Association, 1995).
France	<i>Le Monde</i> website (www.lemonde.fr/elections).
Gambia	Central Committee of the People's Democratic Organization for Independence and Socialism (PDOIS), 'Analysis of the Present Electoral System in the Gambia', 1992).
Georgia	Georgia Elections Results website (205.197.10/ELECTIONS/respreselec.html).
Germany	Personal communication with Uwe Gehring, Research Assistant, University of Mainz (files obtained via ftp).
Ghana	Electoral Commission of Ghana, 'Presidential Results Data Sheet', 1996.
Greece	Greek Elections Results website (www.paros.delta-inf.gr).
Guatemala	Personal communication with Professor David L. Wall, Christopher Newport University.
Honduras	Honduras Election website (http://lcweb2.loc.gov/frd/cs/honduras/hn_appen.html); personal communication with Professor Michelle Taylor-Robinson, Texas A&M University.
Hungary	Hungarian Elections Website (http://www.election.hu/index_en.htm).
Iceland	Personal communication via email with Professor Gunnar Helgi Kristinnsson, University of Iceland.
India	Butler, David, Ashok Lahiri and Prannoy Roy, <i>India Decides: Elections 1952-1995</i> , 3rd ed (New Delhi: Books & Things, 1995).
Ireland	Irish Elections Results website (archive.rte.ie/election97).
Israel	No data required (single-district chamber).
Italy	Italian Chamber of Deputies website (www.camera.it/elezdep/circull/home.htm); and Italian Senate website (www.senato.it/funz/fr_siste.htm).
Jamaica	'The Observation of the 1997 Jamaican Elections' (Atlanta, Ga: The Carter Center, 1997).
Japan	Migakawa Takayoshi, ed., <i>Seiji Handobukku</i> [Political Handbook] No. 33 (Tokyo: Seiji Koho Senta, 1997).
Kenya	Kenyan Elections website (http://www.kenyaelections.com/res3/Coast.htm).

Country	Source
Korea	Korean Congressional Elections Oversight Committee, '15th National Assembly Elections' (Seoul: Central Congressional Election Authority, 1996).
Latvia	Personal communication via email with Laimdota Upe-niece, Software Developer, Information Department, Saeima of Latvia.
Liechtenstein	Liechtenstein, 'Das Wahlsystem' (Liechtenstein: Press and Information Office, Principality of Liechtenstein, 1997).
Malawi	Personal communication with Professor Daniel Posner, Department of Political Science, University of California, Los Angeles.
Mali	<i>Journal Officiel de la République du Mali</i> , 12 February 1997, p. 40; Commission Electorale Nationale Indépendante, Mali, 'Resultats Provisoires du 1er Tour des Elections Legislatives du 20 Juillet 1997'.
Malta	Lijphart Elections Archive (dodgson.ucsd.edu).
Mexico	Instituto Federal Electoral website (www.ife.gov.mx); Stepan 1997, see fn. 3.
Namibia	No data required (single-district chamber).
Netherlands	No data required (single-district chambers).
New Zealand	New Zealand Government website (www.govt.nz/elections/e-top.html).
Nicaragua	Nicaragua, <i>Elecciones 1996: Proclamaciones de Electos</i> (Managua: Consejo Supremo Electoral, 1996).
Norway	Statistics Norway, <i>Stortingsvalget 1993</i> (Oslo-Kingsvingen: Statistics Norway, 1994).
Panama	Panamanian Elections website (http://www.elecciones99.com/infoelec/compendi.html#cargos).
Paraguay	Marcial A. Riquelme, <i>Negotiating Democratic Corridors in Paraguay: Report of the Latin American Studies Association to Observe the 1993 Paraguayan National Elections</i> (Pittsburgh: LASA, 1994).
Peru	No data required (single-district chamber).
Poland	Polish Elections website (http://www.pap.com.pl/elections97/results/).
Portugal	Personal communication with Domingos Magalhães, Director of Services, Portuguese Electoral Information Bureau (STAPE).
Romania	Romanian Central Elections Bureau website (www.kappa.ro).
Russia	Mikhail Filippov's website (www.caltech.edu/~filippov/fraud/95pl.html); Stepan 1997, see fn. 3.
Senegal	Personal communication with Professor Shaheen Mozaffar, Department of Political Science, Bridgewater State College.
Seychelles	Seychelles Government website (www.seychelles.net/misd/res1998/htm).

Country	Source
Sierra Leone	Stephen Riley, 'The 1996 Presidential and Parliamentary Elections in Sierra Leone', <i>Electoral Studies</i> 15 (1997), 537–45.
Slovakia	Slovakia Elections Results website (www.eunet.sk/slovakia/slovakia/elections-94/parl-members), and personal communication with Miro Sedivy (miro.sedivy@geocities.com).
Slovenia	Slovenia Elections Results website (www.sigov.si/egi-bin/spl/volitve/preds97/udel_ve.htm?language=slo).
South Africa	Personal communication with Professor Andrew Reynolds, University of Notre Dame.
Spain	Ministerio de la Justicia y del Interior, 'Elecciones a Corte Generales, 1996' (Computer files obtained via ftp); Stepan 1997, see fn. 3.
Sri Lanka	Lijphart Elections Archive (http://dodgson.ucsd.edu/lij/srlk.html).
St Lucia	St Lucia Labor Party website (www.geocities.com/~slp/election.html).
Sweden	Sweden Elections Results website (www.math.chalmers.se/~larsa/Val/valdata/Riks94.html).
Switzerland	Swiss Elections website (http://www.admin.ch/ch/f/pore/nrw95/broch.html); personal communication with Simon Hug, UC San Diego.
Tanzania	Personal communication with Professor Shaheen Mozaffar, Department of Political Science, Bridgewater State College.
Thailand	Thailand, <i>Report of the Election to the House of Representatives, 1996</i> (Election Division, Department of Local Administration, Ministry of the Interior, 1996).
Turkey	Ali Carkoglu and Emre Erdogan, 'Fairness in the Apportionment of Seats in the Turkish Legislature: Is There Room for Improvement?' <i>New Perspectives on Turkey</i> , 19 (1998), 97–124.
UK	<i>Whitacker's Almanac for 1998</i> (London: The Stationery Office).
Ukraine	IFES Ukraine website (http://ifes.ipri.kiev.ua/Elections98/index.phtml).
Uruguay	Alfredo Albornoz, <i>Elecciones</i> (Montevideo: Republica Oriental del Uruguay, Cámara de Representantes, 1992).
USA	Congressional Quarterly, <i>Congressional Districts in the 1990s</i> (Washington, DC: CQ Press, 1993).
Venezuela	Dieter Nohlen, <i>Sistemas Electorales en América Latina: El Debate Sobre Reforma Electoral</i> (Lima: Fundación Friedrich Ebert, 1993); and Venezuela, 'Registro Electoral' (unpublished reports, mimeos) (Caracas: Consejo Supremo Electoral, 1993).

Country	Source
Zambia	Electoral Commission of Zambia, 'Presidential and Parliamentary General Elections, 1996, Provisional Results, 25 Nov. 1996'; Republic of Zambia, 'Report of the Delimitation Commission Established under Article 73 (1) of the Constitution of Zambia to his Excellency Dr Kenneth David Kaunda, President of the Republic of Zambia' (n.d.).