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RESEARCH NOTE

SIZE AND PARTY SYSTEM FRAGMENTATION

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ABSTRACT

The present study tests the assumption that size affects party system fragmentation. Three dependent variables are used: the number of parties, the electoral support for the leading party, and the effective number of parties. The study operates on two levels. On the macro level, the research population consists of 77 countries with free party systems. On the micro level, local units in Great Britain and Finland constitute the object of research. The impact of the following intervening variables is controlled for: the effective threshold, presidentialism, socio-economic diversification, and ethnic and religious diversity. On the macro level, the results show that size contains far more explanatory power than any other variable. This holds true for countries using a plurality electoral system as well as those using a proportional electoral system. On the micro level, there is a strong association between the size of the population and the number of parties, whereas the other dependent variables are insensitive to variations in size.

KEY WORDS ■ electoral system ■ party size ■ party system fragmentation

A Framework of References

In their seminal work *Size and Democracy*, Robert Dahl and Edward Tufte (1973) discussed, among other things, the link between size and party systems, suggesting that the size of political entities affected the degree of fragmentation of the party system. The explanation for this assumed relationship was twofold. One argument was derived from social-psychological theory-building, more specifically from the well-known experiments on

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conformity conducted by S. E. Asch. The other reason for the expected link between size and party system fragmentation is about diversity. Large size, the authors argue, leads by necessity to organizational diversity and complexity. A large unit presupposes a wide range of organizations and institutions, which produce a high degree of specialization and complexity. Therefore it is reasonable to expect that an increase in size leads to an increase in attitudinal diversity (Dahl and Tufte, 1973: 30–40). From this discussion of the arguments that Dahl and Tufte lay down, two hypotheses emerge, which will be tested in this study:

Hypothesis 1: The larger the size of a political unit (in terms of population and area), the larger the number of political parties operating within that unit.

Hypothesis 2: The larger the size of a political unit (in terms of population and area), the smaller the electoral support for the leading party operating within that unit.

It must be emphasized that Dahl and Tufte's assumptions can be further developed, at least to some extent. Today, party system fragmentation is generally measured with indices that take into account both the number of parties and their relative strength. The most widely used measure is no doubt *the effective number of parties* created by Markku Laakso and Rein Taagepera (1979). The index is calculated according to the following formula:

$$N = \frac{1}{\sum_{i \epsilon m} v_i^2} \qquad (1)$$

where v_i stands for the vote proportion of the ith party.

I therefore introduce a third dependent variable, the effective number of parties, which leads us to:

Hypothesis 3: The larger the size of a political unit (in terms of population and area), the larger the effective number of parties operating within that unit.

According to Dahl and Tufte, it is reasonable to expect that the link between size and party system fragmentation can exist only in very small political systems situated within a single country. The assumption is that the patterns of conflict management vary a great deal between countries. Historical uniqueness can therefore blur the association between size and party system fragmentation. Dahl and Tufte also presumed that the arguments derived from social-psychological theory-building only applied to very small units; countries are therefore too large to constitute test cases (Dahl and Tufte, 1973: 94–7). One further qualification is the assumption that size affects party system fragmentation only in units where a proportional electoral system is in use. They argue that the presumed effect of plurality electoral systems on party system fragmentation might blur the relation between size and party system fragmentation (p. 100).

I certainly do not challenge these views on theoretical grounds but I do note the lack of empirical evidence to support the stipulation of the above-mentioned qualifications. I therefore choose to operate on two levels. On the macro level, all countries where free party system formation exists are included in the study. On the micro level, the political units studied are the smallest possible, and are situated within a single country. This strategy allows testing of whether or not the assumption is correct that size affects party system fragmentation exclusively within countries.

The Research Population

The Macro Level

The assumption that size is related to the degree of fragmentation of the party system can, of course, only be tested on countries that meet certain criteria pertaining to free party system formation. I have therefore chosen countries with free party system formation where three consecutive elections under democratic rule have been held.[1,2] For each country, data from the two latest elections have been collected (the last election results that have been regarded are from May 1996). For countries with two-chamber representative assemblies I have observed elections to the lower chamber. The average values are used as indicators of the percentage of votes for the largest parties and the effective number of parties.[3] Concerning the first dependent variable – number of parties – the data have been collected from the *Longman Current Affairs* handbooks series (see Appendix Table 2). Data concerning the electoral support for the leading party and the effective number of parties are not available for Kiribati and the Solomon Islands. In addition, Papua New Guinea is excluded from all analyses concerning the effective number of parties, since a high number of candidates run as independents. This means that the effective number of parties will be very high indeed (the calculations have been done presuming that all independents do not constitute one homogeneous group, but instead are 'independent' from each other as well as other parties). Consequently, Papua New Guinea would be an extreme 'outlier' in the data.

The Micro Level

Dahl and Tufte's theory makes it natural to study the smallest possible units where elections are held. In order to check whether the assumption that size has explanatory value only in proportional electoral systems is true, I use data from local elections in two countries, one using a proportional electoral system (Finland) and one using a plurality electoral system (Great Britain). For Finland I use data from the 1992 and 1996 municipal elections.[4] For Britain, I use local election data. Most of the data have been

gathered from elections in 1990 and 1992. Since the interval between British local elections varies from one local authority area to another (from every four years to three years out of four), I have for some units used data from elections in 1988 and 1991. Because of the high number of local authority areas in Britain, I have chosen to operate with a sample of 400 units.[5] In the British case, data concerning the size of the area are not available. The same applies for the population size. However, I use the number of registered voters as an approximation of population size.

Intervening Variables

The Electoral System

Several variables might make the association between size and party system fragmentation spurious. I have already touched upon one such factor – the electoral system. The argument that plurality electoral systems produce two-party systems whereas proportional electoral systems generate multi-party systems is old (e.g. Riker, 1986: 22–3). In his now classic work *Les partis politiques*, Maurice Duverger (1964) gave two reasons for plurality electoral systems producing two-party systems. The *mechanical effect* refers to those rules that apply when transforming shares of votes into shares of seats. In a plurality electoral system, small parties are punished since only the candidate obtaining the largest number of votes in each (single-seat) constituency gets elected. In addition to the mechanical effect there is a *psychological effect*, which means that voters avoid wasting their votes by abandoning small parties and concentrating their votes to larger parties (Duverger, 1964: 206–55). There are, however, exceptions from this rule and Sartori (1986) in particular has shown that Duverger's statements can be regarded as 'laws' only if certain conditions are fulfilled.

Dahl and Tufte explicitly made a point of arguing that size has a better chance of affecting party system fragmentation in proportional electoral systems. Consequently, the population being investigated here is split up into two sub-categories, one consisting of countries where a plurality electoral system is in use, and one consisting of countries using proportional representation. This dichotomization is not unequivocal. There is some degree of uncertainty involved in categorizing countries that make use of systems that are in a border zone between regular plurality and proportional systems. I have, however, chosen to include those systems among the proportional systems. The following strategy is applied. In countries using the second-ballot system (France, Monaco and Kiribati), the incentives for voting behaviour should be similar to those in proportional electoral systems since the parties and voters can reorganize before the second round. The same line of reasoning applies to countries making use of the alternative vote system (Australia and Nauru) and the single transferable vote

system (Ireland and Malta), since preferential voting makes it possible to rank several alternatives. Classifying these electoral systems in the same category as proportional electoral systems presupposes that values on the dependent variable are determined by the results in the first-round election (in second-ballot systems) or by first preference votes (in systems where preferential voting is applied).

The so-called semi-proportional systems are sparsely used around the world. The single non-transferable vote (SNTV) system was in use in Japan until 1993, and is currently used in national elections in Taiwan and Vanuatu. Even though the SNTV system in no way favours smaller parties, it allows them to exist. For instance, the case of Vanuatu shows that the degree of disproportionality between shares of votes and shares of seats generally has been relatively low (van Trease, 1995: 147–9). Finally, some countries make use of mixed forms of electoral systems where candidates are partly elected by plurality and partly by proportional methods. In those cases where voters have two different ballots, I have chosen to consider only the proportional election. In some countries, however, voters have one single ballot only. The strategy applied in these cases is described in the notes to Appendix Table 2.

District Magnitude and Electoral Thresholds

There is considerable empirical evidence supporting the assumption that district magnitude is related to the degree of proportionality and thereby also theoretically to the degree of fragmentation of the party system (e.g. Rae, 1971; Taagepera and Shugart, 1989: 112–25; Gallagher, 1991: 33–5; Jones, 1993: 64–6; Lijphart, 1994). In proportional electoral systems, small constituencies affect the possibilities of candidates of small parties getting elected. As few candidates get elected, the larger parties have an advantage since all proportional electoral systems favour large parties, at least to some extent. Electoral thresholds serve the same purpose as small district magnitudes. In order to win representation, a party is required to obtain a certain proportion of the votes or, alternatively, to obtain a certain number of votes.

The effects of district magnitude and electoral thresholds on party system fragmentation cannot be studied separately, however. Fortunately, there is a way of combining the two dimensions into one single measure, *the effective threshold*. This measure was introduced by Taagepera and Shugart (1989: 273–5) and later modified by Lijphart (1994: 25–30). Here, I use Lijphart's measure, which is calculated according to the following formula:

$$T_{eff} = \frac{50\%}{(M + 1)} + \frac{50\%}{2M} \qquad (2)$$

where M stands for district magnitude.

This index converts district magnitudes into thresholds, thereby rendering

possible comparisons between district magnitudes and electoral thresholds. For countries making use of electoral thresholds, the value obtained according to the formula is compared to the electoral threshold. The higher value constitutes the effective threshold.

For countries using plurality electoral systems it is more difficult to calculate the effective threshold. Following Lijphart's argumentation, I choose to give these countries the value 35 percent (Lijphart, 1994: 28–9). The calculation of the effective threshold is also somewhat problematic in countries where the transformation of votes into seats is done in more than one tier. Space does not allow for a long discussion of how the effective threshold should be calculated in two-tier districts. Suffice it to say that to a large extent I follow Lijphart's (1994: 30-9) method of establishing the effective threshold. Since the upper tier is decisive for the final allocation of seats, the effective threshold has been calculated from the upper-tier district magnitude. Things get more complicated in those cases where multi-tier districting is combined with legal thresholds calculated in a more complex way. Lijphart (1994: 38–9) chooses to calculate the legal threshold based on the electoral district in which a party most easily can gain a seat. I choose, however, a slightly different strategy. I make the assumption that all electoral districts are equally large, and that the votes are distributed equally between the parties throughout all electoral districts. My motivation for this strategy is that the parties for which the threshold is relevant are likely to be small. These are not rarely regionally concentrated parties, and it is reasonable to assume that the regions in which they are concentrated are not necessarily those in which a small party most easily can gain representation. In a few countries there has been a change in the district magnitude and/or the electoral thresholds between the two elections studied. In those cases I have used the average value.[6]

The effect of the effective threshold can only be studied on the macro level. Since Britain uses a plurality electoral system there is no variation in the independent variable, all units receiving the value of 35. In Finland, the assemblies at the local level coincide with the district magnitude, as there is only one constituency for the election of each representative assembly.

Presidentialism

According to Matthew Shugart and John Carey, there is reason to assume that in presidential systems the degree of fragmentation of the party system is lower than in parliamentary systems (Shugart, 1988; Shugart and Carey, 1992). In presidential elections the voters are expected to concentrate their votes on a few candidates. This voting behaviour is likely to be reflected in parliamentary elections as well. However, there are some qualifications. Drawing on an empirical test, the authors conclude that this assumption applies only in those cases where the president is elected by a plurality electoral system. Second, the timing of elections is important. In order for the

presidential election to affect the parliamentary elections the elections must take place simultaneously. In addition to the above-mentioned qualifications, Lijphart (1994: 130–4), when testing Shugart and Carey's theory, suggests that the president must be considered a relevant political actor. The results obtained by Shugart and Carey have also been confirmed by other authors (Mainwaring, 1993: 210–14; Stepan and Skach, 1994: 121).

In order to determine when a president is to be considered a relevant political actor, I employ Giovanni Sartori's (1994: 84) definition of presidentialism. He stipulates that a political system is presidential if 'the head of state (president) i) results from popular election, ii) during his or her preestablished tenure cannot be discharged by a parliamentary vote, and iii) heads or otherwise directs the governments that he or she appoints' (parenthesis in original). Countries that meet these criteria and where the president is elected by means of plurality and the elections coincide with the parliamentary elections are within the realm of this study considered presidential and given the value 1. Countries that do not meet any of the criteria are considered parliamentary, whereas those that fulfil some of the criteria but not all are considered hybrid forms. Countries labelled parliamentary or hybrid are given the value 0. Finally, countries making use of mid-term elections for the parliament but otherwise meeting all the above-mentioned criteria receive the value 0.5.

Urbanization and Socio-economic Diversification

Dahl and Tufte are aware that other factors associated with size may account for the explanatory value of the size dimension. They explicitly mention urbanization and socio-economic diversification (Dahl and Tufte, 1973: 98–100). In consequence, I introduce the degree of urbanization as a plausible intervening variable in the macro-level analysis. On the micro level this measurement is of course inapplicable: in towns, the degree of urbanization is by definition 100 percent, whereas the corresponding value in the countryside is 0 percent. I therefore need another measurement on the micro level, and I choose a measurement of socio-economic differentiation. I take the percentage of farmers in each local community and subtract this value from 100, thereby obtaining an index ranging from 0 to 100. Unfortunately, such data are not available for Britain and the impact of socio-economic differentiation can therefore not be assessed.

Ethnic and Religious Fragmentation

If urbanization and socio-economic differentiation are thought to affect party system fragmentation, it is natural to believe that ethnic and religious fragmentation serve the same purpose. Ethnicity is not only a difficult concept, it is also extremely problematic to grasp empirically, especially in worldwide comparisons. As a departure point I focus on language and race.

For each country an index of fragmentation is calculated on both these dimensions. However, since they often go hand in hand, only one of the dimensions is used as a measure of ethnic fragmentation, namely the one that yields a higher value of fragmentation. It must be emphasized that it is almost impossible to establish universal criteria for distinguishing between different races. I have therefore chosen self-definition as a definition of race. Admittedly, this implies that the criteria might vary from country to country, but at the same time the plausible assumption can be made that countries only list cleavages between ethnic groups if the differences are thought to be of relevance for the political life of the country.

Concerning religion, the operationalization is easier. A first distinction is between the following religious groups: Christians, Muslims, Jews, Buddhists and Hindus. In addition, I consider people practising nature worship as one separate group. The classes are thereafter split up further in the following way: Christians are split up into Catholics, Protestants, Greek Orthodox and other East Orthodox; Muslims into Sunni and Shia Muslims; and Buddhists into Mahayana Buddhists, Hinayana Buddhists and Lamaists. Regarding Jews, Hindus, atheists and nature worshipers, no further classification is needed. In addition to the religious groups mentioned above I also regard some other religions as separate categories (e.g. Shintoism and Taoism).

Another problem relates to the fact that an ethnic cleavage may coincide with a religious cleavage. On the other hand, in some cases the two dimensions are not connected (as in Switzerland). Needless to say, the effects on party system fragmentation may be very different indeed in these two cases. However, it goes without saying that it is an insurmountable task to find out to what extent the ethnic and religious cleavages coincide in every country included in the study. I therefore opt for another strategy. On the one hand, I give the indices for each of the two dimensions and, on the other hand, I combine the ethnic–religious dimensions into an index termed 'ethnic and religious fragmentation'. This is done by simply adding the measure of religious fragmentation to the measure of ethnic fragmentation.

The degree of ethnic fragmentation is generally measured according to the formula proposed by Douglas Rae and Michael Taylor (1970: 24–7). Since the calculations are complicated when we are dealing with missing data (Anckar and Eriksson, 1998: 5–6), I have chosen to use an index that Rae (1971: 55–6) created for measuring party system fractionalization. This yields values of ethnic and religious fragmentation that are approximately the same as the values obtained by the formula proposed by Rae and Taylor (Anckar and Eriksson, 1998: 6–7). Rae's measure is calculated according to the following formula:

$$F = 1 - \Sigma p_i^2 \qquad (3)$$

where p_i is the proportion of people belonging to category i.

Since data concerning ethnic and religious characteristics are unavailable at the micro level, the impact of this factor can be assessed only at the macro level.

Multicollinearity

A few words need to be added about the internal relations between variables. The two size dimensions are highly interrelated and can therefore not be incorporated in the same regression model, especially at the macro level. Consequently, I use different regression models for each size dimension. There is also reason to control for a plausible association between the number of parties and the other two dependent variables. The reason underlying this assumption is simple. If the number of parties is low, the share of votes for the parties can be thought to be high, whereas the opposite is true for entities with many parties. For instance, in a country with ten parties the support for the largest party can be as low as 10 percent, whereas the corresponding value for a country with only two parties is at least 50 percent. On the macro level, the index of ethnic–religious fragmentation cannot for obvious reasons be incorporated with the indices of ethnic and religious fragmentation. I therefore use separate regression models for the indices of ethnic and religious fragmentation on the one hand and the index of ethnic–religious fragmentation on the other. The values the countries receive on each variable are given in Appendix Tables 1 and 2. Due to the limited space I do not list the corresponding values at the micro level.

Empirical Findings

The empirical findings of the study are given in Tables 1–5. Tables 1 and 2 show the results for the Finnish and British local units, respectively. The main finding is that population size is an important determinant for the number of parties. However, it appears that the other two dependent variables are fairly insensitive to variations in size. In both Finland and in Britain the number of parties affects the electoral support for the leading party as well as the effective number of parties. For these two dependent variables we also note that the explanatory value of socio-economic differentiation is high in the Finnish case. However, due to the lack of association between, on the one hand, size and the electoral support for the leading party and, on the other hand, size and the effective number of parties, we are bound to reach the conclusion that the link between size and party system fragmentation does not apply totally at the micro level.

Tables 3–5 report macro-level findings. A bird's eye-view, in which all the countries in the analysis are included in the regression model, is provided in Table 3. It appears that size is indeed the most important determinant of party system fragmentation. There is a clear association between both size

Table 1. Strength of association between size, socio-economic differentiation, number of parties and party system fragmentation in Finnish local elections, 1992 and 1996 (multiple regressions)

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Population (log)	1.54**	3.34**	–0.19**
	0.85	0.26	–0.20
	23.31	3.36	–2.69
Socio-economic	–0.00	–0.49**	0.03**
differentiation	–0.03	–0.47	0.41
	–0.74	–9.10	8.19
Number of parties		–3.53**	0.29**
		–0.49	0.54
		–7.33	8.23
Multiple R	0.83	0.64	0.67
Adjusted R^2	0.70	0.40	0.44
F sig.	0.000	0.000	0.000
n	433	433	433
Area (log)	0.34**	0.51	0.02
	0.18	0.04	0.02
	4.57	0.99	0.40
Socio-economic	0.09**	–0.39**	0.03**
differentiation	0.60	–0.37	0.35
	15.02	–7.69	7.52
Number of parties		–2.39**	0.21**
		–0.34	0.40
		–7.21	8.99
Multiple R	0.59	0.63	0.66
Adjusted R^2	0.34	0.39	0.43
F sig.	0.000	0.000	0.000
n	433	433	433

Note: In each column the regression coefficients are listed first followed by the standardized regression coefficients and the t-scores.
*significant at the 0.05 level; **significant at the 0.01 level

dimensions and all three dependent variables. In addition, we note that there is a weaker but nonetheless evident relation between the effective threshold on the one hand and the electoral support for the leading party, as well as the effective number of parties, on the other. Finally, there is a weak association between presidentialism and the effective number of parties.

Tables 4 and 5 give the corresponding results for the sub-populations of countries with plurality electoral systems and proportional electoral systems, respectively. Concerning the first group, the findings are that size alone contains explanatory power. This holds true for each of the three dependent variables. The association between population size and the

Table 2. Strength of association between size, number of parties and party system fragmentation in British local elections, 1988–92 (sample of 400 shires) (multiple regression)

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Number of voters	0.00**	0.00	–0.00
	0.48	0.06	–0.07
	10.87	1.29	–1.50
Number of parties		–8.30**	0.46**
		–0.51	0.63
		–10.09	13.80
Multiple R	0.48	0.48	0.60
Adjusted R^2	0.23	0.23	0.36
F sig.	0.000	0.000	0.000
n	400	400	400

Note: In each column the regression coefficients are listed first followed by the standardized regression coefficients and the t-scores.
**significant at the 0.01 level

number of parties is particularly strong. Concerning the second group, once again, size stands for the bulk of variation in the dependent variables. In addition, one may detect a weak association between presidentialism and the effective number of parties.

Conclusion

This analysis has shown that the assumptions made by Dahl and Tufte need to be qualified in two central respects. It is an indisputable fact that size affects the degree of fragmentation of the party system, both on an intra-state and an inter-state level. Contrary to Dahl's and Tufte's assumptions, however, the evidence suggests that the association is stronger between countries than within countries. The study has also indicated that size affects party systems in units using plurality as well as in units using proportional electoral systems.

Furthermore, the results clearly show that factors traditionally brought forward as determinants of party system fragmentation contain little or no explanatory value compared to size. Concerning the effective threshold, there is a weak relationship between this variable on the one hand and the electoral support for the leading party, as well as the effective number of parties, on the other. This relation could only be detected in the whole population. It did not exist in the sub-populations of countries using proportional

Table 3. Strength of association between size, effective threshold, presidentialism, urbanization, ethnic–religious fragmentation, number of parties and party system fragmentation in 77 countries with free party systems (multiple regressions)

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Population (log)	3.79**	−3.10**	0.29**
	0.58	−0.48	0.47
	5.44	−3.69	3.73
Effective threshold	0.03	0.37*	−0.04*
	0.03	0.31	−0.30
	0.24	2.52	−2.45
Presidentialism	−5.09	6.44	−1.59*
	−0.09	0.11	−0.27
	−0.85	1.06	−2.67
Urbanization	0.03	−0.01	0.00
	0.05	−0.01	0.10
	0.41	−0.07	0.89
Index of ethnic fragmentation (IEF)	N.I.[a]	N.I.	0.94
			0.15
			1.43
Index of religious fragmentation (IRF)	N.I.	N.I.	−0.75
			−0.11
			−0.52
Index of ethnic–religious fragmentation (IERF)	2.51	−2.40	N.I.
	0.06	−0.06	
	0.51	−0.48	
Number of parties		0.04	−0.01
		0.04	−0.06
		0.36	−0.52
Multiple *R*	0.58	0.59	0.63
Adjusted R^2	0.29	0.28	0.33
F sig.	0.000	0.000	0.000
n	74	73	72
Area (log)	2.43**	−2.64**	0.22**
	0.48	−0.52	0.46
	4.11	−4.38	3.85
Effective threshold	0.03	0.31*	−0.03*
	0.03	0.26	−0.27
	0.19	2.17	−2.25
Presidentialism	−4.73	7.85	−1.58**
	−0.08	0.13	−0.28
	−0.73	1.33	−2.77
Urbanization	0.09	−0.04	0.01
	0.13	−0.06	0.14
	1.08	−0.55	1.21

Table 3. *continued*

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
IEF	N.I.	N.I.	0.74
			0.12
			1.11
IRF	N.I.	N.I.	–0.72
			–0.10
			–0.22
IERF	2.85	–0.44	N.I.
	0.07	–0.10	
	0.53	–0.89	
Number of parties		0.01	–0.00
		0.01	–0.01
		0.11	–0.09
Multiple R	0.49	0.68	0.64
Adjusted R^2	0.24	0.39	0.34
F sig.	0.002	0.000	0.000
n	74	73	72

[a] N.I. = not included.

Note: In each column the regression coefficients are listed first, followed by the standardized regression coefficients and the t-scores. For each dependent variable, IEF and IRF on the one hand, and IERF, on the other hand, have been incorporated in separate regression models. Here, I only list the results of the regression analysis that yields the highest adjusted R^2.

*significant at the 0.05 level; **significant at the 0.01 level.

means of representation. It is, however, possible that it is actually the electoral system that contains the explanatory power here, since the countries using plurality electoral systems were all given the value 35 on this variable. This implies a high level of multicollinearity between the electoral system and the effective threshold.

Presidentialism possesses even less explanatory power than the effective threshold. A weak association between presidentialism and the effective number of parties emerges in the whole population as well as among countries using proportional electoral systems. When it comes to countries employing plurality electoral systems, it is difficult to formulate analytical conclusions because of the small number of countries using a presidential form of government. Furthermore, it is worth noting that the degree of urbanization is void of any explanatory value. However, at the micro level a strong relation exists between socio-economic differentiation on the one hand and the electoral support for the leading party, as well as the effective number of parties, on the other. The lack of association between ethnic and religious fragmentation on the one hand and party system fragmentation on

Table 4. Strength of association between size, effective threshold, presidentialism, urbanization, ethnic–religious fragmentation, number of parties and party system fragmentation in countries with free party systems and plurality electoral system (multiple regressions)

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Population (log)	4.47**	−5.04*	0.33*
	0.82	−0.76	0.82
	5.59	−2.32	2.84
Presidentialism	−3.13	12.78	−1.84
	−0.04	0.13	−0.30
	−0.29	0.71	−1.81
Urbanization	−0.00	0.04	−0.00
	−0.03	0.05	−0.04
	−0.16	0.25	−0.17
IEF	8.04	N.I.	0.82
	0.13		0.17
	0.80		0.74
IRF	−14.17	N.I.	−1.66
	−0.19		−0.28
	−1.24		−1.27
IERF	N.I.	−3.45	N.I.
		−0.07	
		−0.34	
Number of parties		0.27	−0.00
		0.22	−0.06
		0.75	−0.24
Multiple R	0.83	0.60	0.74
Adjusted R^2	0.61	0.21	0.41
F sig.	0.000	0.068	0.008
n	29	28	27
Area (log)	2.70**	−3.27*	0.22*
	0.59	−0.59	0.64
	3.11	−2.20	2.69
Presidentialism	4.48	9.37	−1.31
	0.06	0.10	−0.22
	0.33	0.52	−1.33
Urbanization	0.11	−0.01	−0.01
	0.16	−0.01	−0.20
	0.79	−0.08	−1.28
IEF	12.58	N.I.	N.I.
	0.21		
	0.95		
IRF	−15.27	N.I.	N.I.
	−0.20		
	−1.03		

Table 4. *continued*

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
IERF	N.I.	–0.51	–0.45
		–0.10	–0.13
		–0.05	–0.72
Number of parties		–0.01	0.02
		–0.01	0.22
		–0.03	1.05
Multiple R	0.69	0.59	0.71
Adjusted R^2	0.35	0.19	0.39
F sig.	0.009	0.081	0.008
n	29	28	27

Note: See Tables 1 and 3 for explanations.

the other can perhaps be attributed to the fact that ethnic cleavages are generally not regarded as the most important determinants of voting behaviour (see Lewis-Beck, 1986; McClintock, 1989: 362–3; Dix, 1989: 24; Rokkan and Urwin, 1983: 154–6).

Thus, the contribution of this present study to empirical theory-building can be expressed in the following statements.

1 The larger the size of a country, or a unit within a country, the higher the number of parties. The rule applies irrespective of electoral system.
2 The larger the size of a country, the lower the electoral support for the leading party. The rule applies irrespective of electoral system.
3 The larger the size of a country, the higher the effective number of parties. The rule applies irrespective of electoral system.

Notes

1 The criteria of free party systems are derived from Hadenius (1992). There should be no restrictions on the right to vote and at least 90% of the representatives must be elected by general elections. In terms of the meaningfulness of elections, I demand that countries obtain a minimum of 6 points in Hadenius's study. Furthermore, concerning organizational freedoms, countries must obtain 5 points or more. Hadenius's study does not cover all the countries in the world and some of the information is now out of date (Hadenius's study reflected the situation in 1988). Consequently, I demand that countries obtain less than 5 points on the political rights dimension in Freedom House's annual survey of political rights and civil liberties in both the 1994/5 issue and the latest issue, available on the Internet: http://www.freedomhouse.org/Political/frtable

Table 5. Strength of association between size, effective threshold, presidentialism, urbanization, ethnic–religious fragmentation, number of parties and party system fragmentation in countries with free party systems and proportional electoral systems (multiple regression)

Independent variables	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Population (log)	3.10*	–1.86*	0.28*
	0.39	–0.34	0.38
	2.66	–2.03	2.43
Effective threshold	–0.00	0.18	–0.02
	–0.00	0.10	–0.09
	–0.01	0.62	–0.59
Presidentialism	–6.51	5.70	–1.40
	–0.12	0.16	–0.28
	–0.84	1.01	–1.95
Urbanization	0.11	–0.01	0.02
	0.13	–0.02	0.21
	0.85	–0.15	1.42
IEF	N.I.	N.I.	N.I.
IRF	N.I.	N.I.	N.I.
IERF	3.58	2.03	0.65
	0.07	0.05	0.12
	0.44	0.34	0.86
Number of parties		0.00	–0.01
		0.01	–0.12
		0.07	–0.77
Multiple R	0.43	0.38	0.49
Adjusted R^2	0.08	0.01	0.12
F sig.	0.153	0.407	0.085
n	45	45	45
Area (log)	2.14*	–2.02**	0.25**
	0.37	–0.50	0.45
	2.45	–3.22	3.02
Effective threshold	–0.03	0.19	–0.02
	–0.01	0.10	–0.09
	–0.07	0.67	–0.64
Presidentialism	–7.94	7.97	–1.63*
	–0.15	0.22	–0.33
	–1.00	1.50	–2.31
Urbanization	0.15	–0.05	0.02
	0.18	–0.09	0.28
	1.19	–0.62	1.89
IEF	N.I.	N.I.	N.I.
IRF	N.I.	N.I.	N.I.
IERF	2.47	2.77	0.54
	0.05	0.07	0.10
	0.30	0.51	0.74
Number of parties		0.04	–0.01
		0.06	–0.13
		0.39	–0.90
Multiple R	0.40	0.50	0.54
Adjusted R^2	0.05	0.14	0.18
F sig.	0.215	0.069	0.030
n	45	45	45

Note: See Tables 1 and 3 for explanations.

For countries not included in Hadenius's study, the 1986/7 issue of Freedom House's survey has been used. The same cutting-point, i.e. 5 points, applies.

2 I make the following exceptions: Peru is included although its ranking in the 1994/5 survey temporarily surpassed the threshold due to President Fujimori's *autogolpe* in 1992. Singapore has continuously received the value 4 on the political rights dimension. However, in 1993/4 the value was raised temporarily to 5. In the latest survey, Singapore again received the value 4. Data on all dependent variables for Singapore have, however, been collected prior to the raise on the political freedoms dimension. Turkey's values on the political rights dimension have been oscillating between inclusion and exclusion. In the 1992/3 survey Turkey received the value 2. During the mid-1990s, the oppression of the Kurdish population led to a sharp rise. In the 1996 survey Turkey received the value 5. In the latest ranking, however, Turkey again barely qualifies for inclusion, obtaining the value 4.

3 The question how to treat party splits and mergers is important. The crucial point is how parties act in elections. If a voter can distinguish between the alternatives the parties are treated as separate units. This means, for instance, that the German CDU and CSU are treated as two different parties.

4 The following sources have been used: *Finlands kommunalkalender 1995* (Helsingfors: Finlands kommunförbund); *Kommunalvalen 1992, 1996* (Helsingfors: Statistikcentralen).

5 The database used is Thrasher et al. (1994).

6 For instance, in Israel the electoral threshold was raised from 1.0 percent to 1.5 percent before the 1992 elections. Since I have used data from the 1988 and 1992 elections the electoral threshold for Israel is 1.25 percent.

Appendix

Table A1. Size, degree of urbanization and level of ethnic–religious fragmentation in countries with free party systems

Country	*Population*	*Area (sq. km)*	*Urbanization (%)*	*Index of ethnic fragmentation*	*Index of religious fragmentation*	*Index of ethnic–religious fragmentation*
Antigua & Barbuda	64,000	440	32.0	0.1504	0.2322	0.3826
Argentina	32,547,000	2,780,000	86.3	0.0392	0.1514	0.1906
Australia	17,065,000	7,686,850	85.5	0.0781	0.5876	0.6657
Austria	7,718,000	83,850	58.4	0.0779	0.2871	0.3650
Bahamas	255,000	13,940	64.3	0.4735	0.5820	1.0555
Barbados	257,000	430	44.7	0.3350	0.2184	0.5534
Belgium	9,967,000	30,510	96.9	0.4986	0.1818	0.6804
Belize	189,000	22,970	51.6	0.7169	0.4800	1.1969
Bolivia	6,573,000	10,986,000	51.2	0.7900	0.0974	0.8874

Table A1. *continued*

Country	*Population*	*Area (sq. km)*	*Urbanization (%)*	*Index of ethnic fragmentation*	*Index of religious fragmentation*	*Index of ethnic–religious fragmentation*
Botswana	1,300,000	600,400	27.5	0.3623	0.5000	0.8623
Brazil	144,723,000	8,512,000	74.9	0.6441	0.2070	0.8511
Bulgaria	8,991,000	110,840	67.7	0.2676	0.2604	0.5280
Canada	26,584,000	9,975,220	77.1	0.6600	0.6284	1.2884
Colombia	32,300,000	1,139,000	70.0	0.6545	0.0950	0.7495
Costa Rica	2,805,000	50,700	47.1	0.2670	0.0962	0.3632
Cyprus	681,000	9,250	52.8	0.3078	0.3078	0.6156
Denmark	5,140,000	43,080	87.0	0.0199	0.0394	0.0593
Dominica	71,000	750	57.0	0.1846	0.1832	0.3678
Dominican Rep.	7,170,000	48,730	60.4	0.4050	0.0394	0.4444
Ecuador	10,264,000	283,560	56.0	0.5819	0.1899	0.7718
El Salvador	5,172,000	21,390	44.4	0.1138	0.0774	0.1912
Finland	4,986,000	337,050	59.7	0.1128	0.1486	0.2614
France	56,735,000	547,030	74.3	0.1343	0.2972	0.4315
Germany	79,365,000	356,910	86.0	0.1530	0.6314	0.7844
Greece	10,161,000	131,990	62.5	0.969	0.0395	0.1364
Grenada	91,000	340	63.0	0.2790	0.5224	0.8014
Guatemala	9,198,000	108,890	39.4	0.6378	0.0774	0.7152
Honduras	5,105,000	112,090	43.7	0.1846	0.0587	0.2433
Iceland	255,000	102,850	90.5	0.0587	0.1800	0.2387
India	834,697,000	3,287,590	27.0	0.8706	0.3031	1.1737
Ireland	3,503,000	68,390	57.1	0.0779	0.1146	0.1925
Israel	4,660,000	20,700	91.6	0.2913	0.2913	0.5826
Italy	57,661,000	301,280	68.9	0.0394	0.0199	0.0593
Jamaica	2,415,000	11,420	52.3	0.3979	0.4022	0.8001
Japan	123,537,000	371,860	77.0	0.0198	0.6940	0.7138
Kiribati	72,000	680	36.0	0.0392	0.5671	0.6063
Liechtenstein	29,000	160	20.2	0.5568	0.2367	0.7935
Luxembourg	382,000	2,590	84.3	0.4411	0.0958	0.5369
Malaysia	17,764,000	332	43.0	0.6093	0.6648	1.2741
Malta	354,000	320	87.3	0.0780	0.0586	0.1366
Marshall Islands	46,000	181	65.0	0.0668	0.1810	0.2478
Mauritius	1,059,000	2,040	40.5	0.7231	0.6542	1.3773
Mexico	86,154,000	1,972,550	72.6	0.5418	0.1333	0.6751
Micronesia (Fed. States of)	101,000	702	19.4	0.6382	0.5282	1.1664
Monaco	30,000	2	100.0	0.7121	0.1874	0.8995
Nauru	10,000	21	47.9	0.5354	0.5736	1.1090
Netherlands	14,952,000	34,000	88.5	0.0782	0.6528	0.7310
New Zealand	3,363,000	269,060	84.0	0.3342	0.4904	0.8246
Norway	4,241,000	323,900	75.0	0.0783	0.1128	0.1911
Pakistan	112,049,000	803,900	32.0	0.7219	0.3550	1.0769
Papua New Guinea	3,699,000	462,840	15.8	0.8835	0.8286	1.7121
Peru	21,550,000	1,285,220	70.2	0.6598	0.0974	0.7572
Philippines	61,480,000	300,000	42.6	0.8544	0.2852	1.1396

Table A1. *continued*

Country	*Population*	*Area (sq. km)*	*Urbanization (%)*	*Index of ethnic fragmentation*	*Index of religious fragmentation*	*Index of ethnic–religious fragmentation*
Portugal	9,896,000	92,080	33.6	0.0199	0.0958	0.1157
St. Kitts & Nevis	42,000	270	48.9	0.1154	0.2662	0.3816
St. Lucia	133,000	620	46.4	0.1854	0.2478	0.4332
St. Vincent & Grenadines	107,000	390	20.6	0.5380	0.3694	0.9074
San Marino	23,000	61	92.5	0.2731	0.0928	0.3659
Senegal	7,504,000	196,190	38.4	0.8111	0.1674	0.9785
Singapore	2,705,000	616	100.0	0.3950	0.7862	1.1812
Solomon Islands	320,000	29,790	10.6	0.1333	0.3846	0.5179
South Korea	42,869,000	98,500	72.0	0.0000	0.7784	0.7784
Spain	38,959,000	504,880	78.4	0.4347	0.0582	0.4929
Sri Lanka	16,993,000	65,610	21.4	0.4151	0.4913	0.9064
Suriname	404,000	163,820	47.5	0.7331	0.7860	1.5191
Sweden	8,559,000	449,700	84.0	0.0966	0.4475	0.5441
Switzerland	6,712,000	41,290	59.9	0.5346	0.5687	1.1033
Taiwan	20,286,000	36,000	74.2	0.0392	0.6550	0.6942
Thailand	56,082,000	514,000	22.6	0.6154	0.0959	0.7113
Trinidad & Tobago	1,227,000	5,130	69.1	0.6321	0.7558	1.3879
Turkey	56,098,000	779,450	61.3	0.2346	0.0392	0.2738
Tuvalu	9,000	26	29.0	0.1679	0.0392	0.2071
Uruguay	3,094,000	186,930	85.5	0.1883	0.4276	0.6159
United Kingdom	57,561,000	244,100	89.1	0.1161	0.4150	0.5311
USA	249,911,000	9,372,570	75.0	0.3886	0.6798	1.0684
Vanuatu	147,000	14,760	25.8	0.1700	0.5402	0.7102
Venezuela	19,325,000	912,050	90.5	0.4754	0.0962	0.5716

Sources: Population: *Statistical Yearbook 1994*, 41st issue (1996) New York: United Nations Publications. For Taiwan: *Europa World Yearbook 1997* (1997) London: Europa Publications. Area: Derbyshire, J. Denis and Ian Derbyshire (1989) *Political Systems of the World*, Edinburgh: Chambers. Urbanization: *World Urbanization Prospects 1990* (1991) New York: United Nations Publications. For Dominica, Tuvalu: *Keesing's Record of World Events* 1996, R 158, Bristol: Keesing's Publications. For Germany: *Keesing's Record of World Events* 1996, R 159. For Grenada: *Keesing's Record of World Events* 1996, R 157. For the Marshall Islands: *Statistical Yearbook of Asia and the Pacific 1993* (1994) Bangkok: United Nations Publications. For the Federated States of Micronesia, Nauru, Taiwan: Bodo Harenberg (ed.) (1993) *Harenberg Länderlexikon '93/94*, Dortmund: Harenberg Lexikon-Verlag. Ethnic and religious fragmentation: *The World in Figures (1987)* London: Holder & Stoughton; *Hela världen i fakta 1986* (1985) Stockholm: Bonnier fakta bokförlag; Kurian, G. T. (ed.) (1992) *Encyclopedia of the Third World*, 4th edn, Vols I, II, III, New York: Facts on File; *Europa World Yearbook 1993*; *Regional Surveys of the World*, London: Europa Publications, various issues; *The World Factbook 1995–'96*, Washington: Central Intelligence Agency (Brassey's); *Harenberg Länderlexikon '93/94*. For the Federated States of Micronesia: Hanlon, D. and W. Eperiam (1988) 'The Evolution and Development of the Federated States of Micronesia', in R. Crocombe et al., *Micronesian Politics*, Vol. 3, Suva: Institute of Pacific Studies of the University of the South Pacific, esp. p. 84; *Demographic Yearbook 1988* (1990) New York: United Nations Publications.

Table A2. Electoral system, effective threshold, form of government, number of parties, electoral support for the leading party and the effective number of parties in countries with free party systems

Country	*Electoral system*	*Effective threshold*	*Form of government*	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Antigua & Barbuda	SP	35.00	parliamentary	8	60.2	1.97
Argentina[a]	PR	12.55	pres. NCE, SP	50	46.1	3.19
Australia	AV	NA	parliamentary	7	41.8	3.05
Austria	PR	4.69	hybrid	6	36.5	3.73
Bahamas	SP	35.00	parliamentary	5	54.3	2.05
Barbados	SP	35.00	parliamentary	3	49.1	2.40
Belgium	PR	7.52	parliamentary	14	17.0	9.64
Belize	SP	35.00	parliamentary	2	51.1	2.00
Bolivia[b]	PR	4.97	pres. CE, maj.	17	30.4	4.95
Botswana	SP	35.00	hybrid	9	59.0	2.18
Brazil[c]	PR	5.26	pres. NCE, maj.	21	21.3	8.40
Bulgaria	PR	8.95	hybrid	95	39.0	4.03
Canada	SP	35.00	parliamentary	15	42.2	3.46
Colombia[d]	PR	13.56	pres. NCE, maj.	18	52.1	2.42
Costa Rica[a]	PR	8.54	Pres. CE, SP	5	43.3	2.65
Cyprus	PR	8.00	parliamentary	4	32.2	3.89
Denmark	PR	2.00	parliamentary	14	36.0	4.80
Dominica	SP	35.00	parliamentary	3	42.6	2.84
Dominican Rep.[e]	PR	5.12	pres. CE, maj.	11	41.5	3.01
Ecuador[f]	PR	5.93	pres. PCE, maj.	21	30.7	5.92
El Salvador	PR	12.04	pres. NCE, maj.	12	45.4	3.20
Finland	PR	5.36	s.pres. NCE, maj.	15	26.6	5.84
France	SB	12.50	s.pres.NCE, maj.	17	28.6	5.51
Germany	mixed	5.00	parliamentary	68	36.6	3.70
Greece	PR	3.29	parliamentary	18	46.9	2.63
Grenada	SP	35.00	parliamentary	8	33.7	3.74
Guatemala[f]	PR	5.22	pres. CE, maj.	20	28.2	5.59
Honduras	PR	9.68	pres. CE, SP	7	52.0	2.43
Iceland	PR	6.60	hybrid	7	37.9	4.26
India	SP	35.00	parliamentary	77	32.3	5.84
Ireland	STV	16.07	hybrid	9	41.7	3.66
Israel[g]	PR	1.25	parliamentary	15	32.9	4.97
Italy[g]	PR	4.61	parliamentary	28	32.0	5.62
Jamaica	SP	35.00	parliamentary	3	58.4	1.94
Japan[g]	SNTV	16.49	parliamentary	12	41.4	4.39
Kiribati	SB	NA	hybrid	4	NA	NA
Liechtenstein	PR	8.00	hybrid	2	47.8	2.38
Luxembourg	PR	4.79	parliamentary	7	31.4	4.69
Malaysia	SP	35.00	parliamentary	41	58.5	2.65
Malta	STV	1.11	parliamentary	4	51.4	2.03
Marshall Islands	SP	35.00	hybrid	1	100.0	1.00
Mauritius	SP	35.00	parliamentary	11	59.0	2.25
Mexico[gh]	mixed	21.15	pres. PCE, SP	8	48.7	3.01

Table A2. *continued*

Country	*Electoral system*	*Effective threshold*	*Form of government*	*Number of parties*	*Electoral support for leading party*	*Effective number of parties*
Micronesia (Fed. States of)[i]	SP	35.00	hybrid	0	100.0	1.00
Monaco	SB	0.00	hybrid	2	85.6	1.35
Nauru	AV	NA	hybrid	1	100.0	1.00
Netherlands	PR	0.67	parliamentary	18	29.7	4.81
New Zealand[g]	SP	35.00	parliamentary	13	41.6	2.93
Norway	PR	4.00	parliamentary	9	35.6	4.51
Pakistan	SP	35.00	parliamentary	27	39.2	3.39
Papua New Guinea[j]	SP	35.00	parliamentary	13	12.1	34.10
Peru[g]	PR	5.10	pres. CE, maj.	23	40.2	4.11
Philippines	SP	35.00	pres. CE, SP	29	43.5	3.22
Portugal	PR	6.76	hybrid	14	47.2	2.97
St. Kitts & Nevis	SP	35.00	parliamentary	4	50.9	2.54
St. Lucia	SP	35.00	parliamentary	3	54.5	2.15
St.Vincent & Grenadines	SP	35.00	parliamentary	3	60.4	1.97
San Marino	PR	31.47	parliamentary	6	42.8	3.46
Senegal[h]	mixed	16.66	pres. PCE, maj.	9	64.0	2.08
Singapore	SP	35.00	parliamentary	19	62.1	2.26
Solomon Islands	SP	35.00	parliamentary	3	NA	NA
South Korea[g]	SP	35.00	pres. NCE, SP	7	38.5	3.78
Spain	PR	10.18	parliamentary	45	38.9	3.40
Sri Lanka[d]	PR	12.50	s.pres. NCE, maj.	16	49.8	2.53
Suriname	PR	13.10	hybrid	16	47.9	3.19
Sweden	PR	4.00	parliamentary	8	41.5	4.12
Switzerland	PR	9.00	hybrid	17	21.4	7.11
Taiwan[h]	mixed	10.41	hybrid	9	49.3	2.83
Thailand[k]	SP	35.00	parliamentary	20	21.9	6.01
Trinidad & Tob.	SP	35.00	parliamentary	13	46.7	2.56
Turkey	PR	12.60	parliamentary	7	24.2	5.43
Tuvalu[l]	SP	35.00	parliamentary	0	100.0	1.00
Uruguay	PR	0.75	pres. CE, SP	20	35.2	3.48
United Kingdom	SP	35.00	parliamentary	31	42.1	3.20
USA	SP	35.00	pres. PCE, SP	40	50.7	2.19
Vanuatu	SNTV	19.74	parliamentary	10	31.0	4.52
Venezuela	mixed	1.16	pres. CE, SP	12	33.3	4.50

Abbreviations: SP: simple plurality; PR: proportional representation; AV: alternative vote; STV: single transferable vote; SNTV: single non-transferable vote; SB: second ballot; pres.: presidential form of government; s.pres.: semi-presidential form of government; CE: concurrent elections; NCE: non-concurrent elections; PCE: partly concurrent elections; maj.: majority elections

Sources: Data on electoral system characteristics and electoral results have been compared to information provided by many sources: *Chronicle of Parliamentary Elections and Developments*, Geneva: Inter-Parliamentary Union (various issues); *Electoral Studies* (various issues); *Europa World Yearbook* (various issues); *European Journal of Political Research* (various issues); Keesing's (various issues); Mackie, Thomas and Richard Rose (1992) *The International Almanac of Electoral History*, 3rd edn, London: Macmillan; Nohlen, Dieter (ed.) (1993) *Handbuch der Wahldaten Lateinamerikas und der Karibik*, Opladen: Leske & Budrich; Jones, Mark (1995) 'A Guide to the Electoral Systems of the Americas', *Electoral Studies* 14: 5–21; Jones, Mark (1997) 'A Guide to the Electoral Systems of the Americas: An Update', *Electoral Studies*

16: 13–15. The following websites were extremely useful:
http: //www.universal.nl/users/derksen/election
http: //www.ipu.org/english/parline/parline.htm
Electoral Commission of Vanuatu (personal visit, March 1997); Electoral Commission of Papua New Guinea (personal visit, March 1997); Electoral Commission of the Solomon Islands (personal visit, March 1997); Georges Lisimachio, Secretary General of Conseil National de Monaco (personal correspondence, October 1996).

Concerning the form of government I have mainly used the following sources: Sartori (1994: 173–6); Shugart and Carey (1992); Jones (1993). The number of parties have been taken from the following publications in the Longman Current Affairs series: Coggins, J. and D. S. Lewis (eds) (1992) *Political Parties of the Americas and the Caribbean*; East, R. and T. Joseph, eds (1989) *Political Parties of Africa and the Middle East*; Jacobs, F. (ed.) (1989) *Western European Political Parties: A Comprehensive Guide*; Lewis, D. S. and D. J. Sagar (eds) (1992) *Political Parties of Asia and the Pacific;* Szajkowski, B. (ed.) (1991) *New Political Parties of Eastern Europe and the Soviet Union.*

[a]The presidential election is strictly speaking not conducted by means of plurality. In Argentina a candidate is required to obtain 45% of the votes in the first round in order to get elected. In Costa Rica a similar system is in use. Here, 40% of the votes is enough to get elected.

[b]In order to get elected in the first round, a presidential candidate is required to receive an absolute majority of the votes. If this is not the case, the president is elected by the parliament. The parliament can choose between the three candidates receiving most votes in the popular election.

[c]Because of lack of data the electoral support for the leading party as well as the effective number of parties have been calculated from the share of seats in parliament.

[d] Presidential elections occur generally only a couple of months after parliamentary elections. One can therefore regard them as concurrent (e.g. Jones, 1993: 10–11) or as non-concurrent (Shugart and Carey, 1992: 177).

[e]Until the 1996 elections the president was elected by plurality vote. Presidential elections were held concurrently with parliamentary elections. Beginning with the 1996 elections, the president is elected by majority vote. Presidential elections are no longer concurrent with parliamentary elections. Since I have used data from the 1994 and 1996 elections the Dominican Republic is given the value 0.5 on the variable describing the form of government.

[f]Elections of national deputies (*diputados nacionales*).

[g]Beginning with the 1996 election the prime minister of Israel is elected by popular election. This reform can be thought to have the same consequences for party system fragmentation as presidentialism. I have therefore only considered the results from the 1988 and 1992 elections. In Italy, Japan, New Zealand and Peru the electoral system has recently changed. I therefore use data from the two latest elections carried out prior to the changes. The same thing applies for South Korea. Since there have only been three elections under democratic rule I only use data from the 1992 elections. In Mexico, I have used data from the 1994 elections only since the electoral system previously in use strongly favoured the largest party, Partido Revolutionario Institutional (e.g. Balinski and Ramirez Gonzales, 1996). Presidential and parliamentary elections partly coincide in Mexico. Since I have used data from the 1994 elections only, which coincided with the presidential elections, Mexico is given the value 1.0 on the variable describing the form of government.

[h]In Mexico, 300 of the Representatives in Cámara de Diputados are elected by plurality electoral system and 200 by proportional representation. Voters have only one vote. I have chosen to regard the system as proportional since the number of representatives elected by proportional means is supposedly large enough to enable the voters to vote for smaller parties. The effective threshold is consequently very high, at 21.15%. A similar electoral system is in use in Senegal, although the proportion of representatives elected by proportional electoral system is higher, 58.33%. Taiwan uses a mixed system of SNTV and proportional elections.

[i]Countries without parties obtain the value 1.00 on the effective number of parties. Since there are no political parties the assumption is made that the country politically is extremely homogeneous.

[j]Excluded from analyses concerning the effective number of parties

[k]Due to lack of data I have only used data from the 1992 elections.

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