This article makes a fresh start in the attempt to explain the number of parties in party systems. It develops a simultaneous equations model to differentiate between the psychological and mechanical effects of district magnitude on party-system fragmentation. Both effects are statistically significant and approximately equal. However, neither effect is very large in comparison to underlying patterns of politicization, which are argued to be reflections of the number of political cleavages in society. These cleavages predispose each party system to converge toward a country-specific effective number of parties within 5 elections, regardless of the initial level of fragmentation, barring outside disturbances. Major devaluations may act as such disturbances, but the evidence so far is inconclusive. The analysis is based on new data from 62 elections in Argentina, Bolivia, Colombia, Peru, and Venezuela, supplemented by 30+additional elections in Brazil, Chile, Costa Rica, Ecuador, Mexico, and Uruguay for the exploration of economic impacts.

DISTRICT MAGNITUDE, ECONOMIC PERFORMANCE, AND PARTY-SYSTEM FRAGMENTATION IN FIVE LATIN AMERICAN COUNTRIES

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S tudies of regime stability and governmental performance routinely report that the format of party systems matters: The larger the number of parties, the more likely governments are to fall (Lijphart, 1984, pp. 78-85), structural economic reforms are to be abandoned (Kaufman & Haggard, 1992), and presidential democracies are to experience executive-legislative stalemate (Diamond & Linz, 1989; Linz, 1994) or to be overthrown (Huntington, 1965).¹ For all these reasons it is important to understand why some party systems are more fragmented than others, and whether and how their degree of fragmentation may be changed to promote good governance.

1. Of course, fewer parties is not better in all respects. Dominant party systems tend to discourage participation and represent citizens poorly, and they are generally less democratic.

COMPARATIVE POLITICAL STUDIES, Vol. 30 No. 2, April 1997 156-185 © 1997 Sage Publications, Inc. 156 Four decades of research have brought tremendous advances in many areas data collection, the operationalization of both fragmentation and its possible causes, and elegant and persuasive theorizing about complex interactions among causes (Laakso & Taagepera, 1979; Lijphart, 1984, 1994; Rae, 1970; Taagepera & Shugart, 1989). Nevertheless, there are still lively debates about even the most basic elements of an understanding of fragmentation, such as whether, to what extent, and under what conditions electoral laws shape party systems; and whether economic performance alters the format of the party system or, to the contrary, party systems condition economic performance, or both (Sartori, 1995).

This article contributes to the ongoing debate by (a) using new data from Latin American countries, which have rarely been included in significant numbers in comparative research on these issues; and (b) proposing a simple recursive theory of party-system evolution, and testing it using a simultaneous equations model. This procedure allows one to make inferences about the direction of causation with greater confidence, and in particular, to distinguish between the impact of electoral laws on voter decisions (the "psychological" effect) and the impact of laws during the "mechanical" translation of votes into seats.² On the basis of this model, I will argue that

- the only electoral institution that has a distinguishable, separate impact on fragmentation is the one lately considered its single most important cause district magnitude.
- 2. both the psychological and mechanical effects of district magnitude have some statistical significance and are approximately equal.
- 3. the impact of district magnitude is, however, slight in comparison with that of underlying patterns of politicization in society.
- 4. these patterns gently nudge party systems toward a country-specific level of fragmentation over the long term, if left undisturbed by other forces.
- one of these disturbing forces in Latin America may be economic performance, specifically traumatic currency devaluations; but the evidence for this is still inconclusive.

THE MODEL

The large literature on party-system fragmentation, as well as my own research on party-system volatility, suggested a theoretical model that could be as complex as the one depicted in Figure 1. First, economic conditions may persuade governments to crack down on opposition parties and remove

2. The terminology is Duverger's (1954) and is equivalent to what Rae (1970) called "distal" and "proximal" effects, respectively.

them from competition, or they may influence the parties' own decisions about splitting or merging or boycotting elections. The causal arrow labeled (1) in Figure 1 corresponds to this hypothesis. Such tactics, which have been called "supply-side" factors because they affect the "supply" of parties before the voters' "demands" have a chance to shape the party system (Schedler, 1995), would be extreme instances of the adaptation that parties everywhere undergo to survive in a changing political environment (Rose & Mackie, 1988). Splits, mergers, boycotts, and bans could also be caused by adaptation to electoral laws such as district magnitude (arrow 2). The magnitude of an electoral district is simply the number of legislative seats to be filled by the district-one in single-member districts, or several to dozens in proportional representation systems. Average district magnitude is the average magnitude of all a country's electoral districts, or the total number of seats divided by the total number of districts. The smaller the district magnitude, the harder it is for small parties to win one of the seats to be filled; the larger the magnitude, the easier it is for small parties to survive. One reasonable hypothesis is therefore that small district magnitudes discourage large parties from splitting and encourage small parties to pool their strengths in a merger, whereas large district magnitudes encourage splintering by making it possible for splinters to survive. This is a supply-side variant of Duverger's Law, which holds that single-member districts encourage bipolar competition (Duverger, 1954; Taagepera & Shugart, 1989, pp. 142-153). Supply-side maneuvering, whatever its causes, seems very likely to change the number of parties in the system (arrow 5).

One of the most prevalent hypotheses is that economic conditions directly affect the voters' propensity to support the incumbent party (Erickson, 1989; Hibbs, 1977; Kramer, 1975; Remmer, 1991; Tufte, 1978). Although changes in support for incumbents do not necessarily translate into changes in the degree of party-system fragmentation, the literature provides sufficient evidence of economic voting for one to expect some sort of relationship between economic performance and fragmentation to exist (arrow 3). The expectation of economic voting must be tempered, however, to the extent that party identification is strong. Voting studies invariably show that one of the most important-usually the most important by far-determinants of voting behavior is the voters' standing identification with parties (Campbell, Converse, Miller, & Stokes, 1960). Strong identifiers vote for the same party in election after election, impervious to short-term factors such as economic performance. Weak identifiers, or swing voters, are influenced more by short-term factors. Therefore, the stronger party ID is, the better present fragmentation is predicted by past fragmentation, and the worse present fragmentation is predicted by recent economic performance (arrow 4).

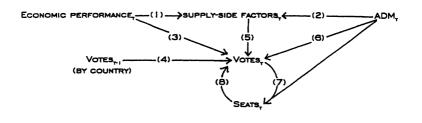


Figure 1. Full model of causes of fragmentation.

District magnitudes are also thought to have a "psychological" effect on voters (arrow 6) and a "mechanical" effect on the translation of votes into seats (arrow 7). The literature on the political consequences of electoral laws has established beyond doubt that there is a mechanical effect. Specifically, all electoral systems tend to overrepresent larger parties and underrepresent smaller parties in the distribution of seats and therefore produce legislative party systems that are less fragmented than the electoral party systems (Rae, 1970). Moreover, the feature of electoral systems that exerts the greatest control over the reduction of the number of legislative parties is district magnitude (Lijphart, 1994; Taagepera & Shugart, 1989). The psychological effect is less well established, but theorists have long assumed that voters anticipate which parties have a chance of winning a seat under the prevailing electoral rules and therefore avoid "wasting" their votes on smaller parties when district magnitude is small (Duverger, 1954; Rae, 1970, pp. 141-142; Taagepera & Shugart, 1989, p. 215). The final hypothesis in Figure 1 is that voters take their strategic voting cues not from district magnitude but from actual experience: They prefer to vote for parties that have successfully won seats in the past and shun parties that were too small to have won seats (arrow 8) (Leys, 1963).

Most of these promising and plausible hypotheses, however, have weak empirical support when tested with pooled data from 62 legislative elections in five countries—Argentina, Bolivia, Colombia, Peru, and Venezuela.³

3. This is an original compilation of data drawn from many sources. Election returns used to calculate indexes of fragmentation are basically those reported in Coppedge (1993), although they have been revised in some respects to incorporate information from Nohlen (1993) and updated to 1994 or 1995 for these five countries. Information on district magnitudes and other aspects of electoral law were collected by the author for Argentina, Colombia, and Venezuela; and by Julie Clugage and Carlos Lozada (under the author's supervision) for Bolivia and Peru. Their work was funded by Princeton University Faculty Research Grant No. 285-2311, which

1914, 1916, 1918, 1920, 1922, 1924, 1926, 1928, 1930, 1946, 1958, 1960, 1963,
1965, 1973, 1983, 1985, 1987, 1989, 1991, 1993, 1994, ^b 1995
1966, 1979, 1980, 1985, 1989, 1993
1939, 1941, 1943, 1945, 1947, 1949, 1958, 1960, 1962, 1964, 1966, 1968, 1970,
1974, 1978, 1982, 1986, 1990, 1990, ^b 1991
1962, 1963, 1978, ^b 1980, 1985, 1990, 1992 ^b
1963, 1968, 1973, 1978, 1983, 1988, 1993

Table 1			
Elections	Used in	n This	Study ^a

a. All are chamber-of-deputies elections unless otherwise noted.

b. Constituent assembly election.

Table 1 lists these elections. The indicators of party-system fragmentation used as endogenous variables are the Laakso-Taagepera indexes of the effective number of parties for both votes and seats and will be referred to here as ENPV and ENPS, respectively.⁴ Various indicators of district magnitude were calculated and used in preliminary models and will be described below, but the one that explained fragmentation best was simply the national total of seats divided by the number of districts, or average district magnitude (ADM).⁵

Table 2 presents summary statistics for the principal variables and cases. As the table indicates, this is a diverse set of party systems—ranging from highly to hardly fragmented, from relatively invariant to volatile, and from continuously to intermittently democratic. Despite being national averages, district magnitudes also vary widely, from little over 1 to 100.

Contrary to (8), voters in these countries do not seem to take past wins and losses into account at all when deciding for whom to vote.⁶ Contrary to

4. This index is the reciprocal of the sum of the squared party shares. See Laakso and Taagepera (1979) for details.

5. All of the indicators of district magnitude were national aggregates because the variables to be explained were measures of fragmentation at the national level. An analysis using electoral districts as the units of analysis would almost certainly produce a tighter fit.

6. The variables included in the model to be presented are those that survived the following specification search. First, bivariate correlations were used to identify independent variables that were most likely to be significant in multivariate single-stage models of effective numbers for both votes (ENPV) and seats (ENPS). Approximately 20 variables were chosen in this way for each dependent variable. Variables that were then found to have nonsignificant coefficients were eliminated from each model one by one, in ascending order of significance, until a working model was obtained in which all independent variables were close to significance at the .05 level.

is gratefully acknowledged. Most of the economic data were compiled by Rafael de la Dehesa. Pablo Abitbol, Ronna Montgomery, and Adrian Hurditch, and Alejandra Grosse provided related additional research assistance.

	Argentina	Bolivia	Colombia	Peru	Venezuela	All 5
Number of elections	22	6	20	7	7	62
Average ENPV ^a	4.34	4.02	2.27	3.85	4.23	3.57
SD	1.36	1.08	0.74	0.83	1.40	1.42
Minimum	2.60	2.07	1.86	2.98	2.97	1.86
Maximum	8.67	4.96	5.09	5.06	6.83	8.67
Average ENPS ^b	3.28	3.55	2.19	3.81	3.39	3.03
SD	0.99	1.08	0.58	1.40	0.96	1.09
Minimum	1.72	1.47	1.79	2.32	2.42	1.47
Maximum	5.42	4.32	4.40	5.84	4.88	5.84
Average ADM ^c	7.47	13.68	11.47	30.62	7.32	11.96
SD	3.40	1.29	14.05	40.98	2.55	16.78
Minimum	4.62	11.33	4.88	6.08	1.62	1.62
Maximum	18.54	14.44	71.00	100.00	8.92	100.00

 Table 2
 Summary Statistics for Fragmentation and District Magnitudes

a. ENPV = effective number of parties for votes.

b. ENPS = effective number of parties for seats.

c. ADM = average district magnitude.

(5), bans, boycotts, and splinters have no significant impact on the number of parties.⁷ In the absence of any such supply-side impact there is little point in investigating the impact of either electoral rules (2) or economic performance (1) on elite behavior. The hypotheses that did find clear empirical support are represented by the much simplified diagram shown in Figure 2—only those relating to party ID and political cleavages (4), psychological effects (6), and mechanical effects (7). The inconclusive evidence of an economic impact on fragmentation of the vote (3) will be discussed after the simplified

Different operationalizations of several concepts (district magnitude, registration thresholds, turnout, economic growth, and the passage of time) were then resubstituted until the most significant operationalization of each concept was identified. The working models were subjected to various modifications to improve their fit and theoretical plausibility. These tests resulted in the elimination of volatility and any version of the boycotts and bans variable as explanations of fragmentation, the creation of country interactions for lagged ENPV, and the rejection of most of the economic variables and various transformations of them (because of insignificance). At this stage the sample size was fixed at 62 for the basic model with average district magnitude (ADM) and no economic variables. These refined models of ENPS and ENPV were then reestimated as a simultaneous-equations model, and all of the theoretically interesting variables that had been rejected earlier were retested in the simultaneous equations format. Only those models in which such other variables proved significant are reported here.

7. A significant effect of bans and boycotts does show up for a larger sample of elections, however, and will be seen in Table 6.

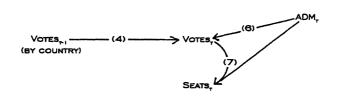


Figure 2. Simplified model of causes of fragmentation.

model has been discussed in detail. It is important to emphasize that this model is simplified not because more elaborate models could not be tested but because they *were* tested, and they were found not to be very useful for understanding national-level fragmentation within and across Argentina, Bolivia, Colombia, Peru, and Venezuela.⁸

Table 3 presents the two-stage least squares estimates for the model depicted in Figure 2. The first equation finds that half of the variance in ENPS (fragmentation of the legislative party system) can be explained by ADM and the fragmentation of the electoral party system (ENPV). The strong significance of ENPV as an explanatory factor will surprise no one; all theory, as well as common sense, tells us that fragmentation in seats is a function of fragmentation in votes. Almost all research on the determinants of the number of parties has, nevertheless, neglected to take votes into account when estimating the impact of electoral laws, as though the fragmentation of the vote were completely independent of district magnitudes and other aspects of electoral law. If they were independent, then regression estimates of the impact of laws would be the same whether ENPV were included in the model or not. But all theorists, from Liphart to Taagepera and Shugart to Rae to Duverger, have in virtually the same breath speculated that laws and votes are not independent; that there is, in other words, a psychological effect: Voters are more likely to vote for smaller parties when the electoral laws make it easier for smaller parties to win a seat. If this speculation is correct, then any estimate of the impact of electoral laws on the number of legislative parties must control for the number of electoral parties; otherwise, regression estimates will misstate (most likely, exaggerate) the impact of electoral law. This first model finds that average district magnitude still has a significant

8. I remain hopeful, however, that a modified operationalization of bans and boycotts will show the expected relationship with the fragmentation of the vote. Also, as discussed below, an expanded sample of elections yields some evidence in support of contributions from bans and boycotts and from economic performance, but this is still inconclusive.

Equation 1 Endogenous variable	ENPS ^a			
N	62			
F value Adjusted R ²	32.72 .510			
Augusted A	.510			
	Explanatory Variable	Unstandardized Coefficient	<u>SE</u>	T Statistic
	Intercept	0.316	0.364	0.87
	ADM _t ^b	0.013*	0.006	2.26
	ENPV _t ^c	0.716***	0.101	7.09
N E value	62			
N F value Adjusted R ²	62 7.55 .392			
F value	7.55	Unstandardized		
F value	7.55 .392	Unstandardized Coefficient	SE	T Statistic
F value	7.55 .392 Explanatory		<u></u> 0.468	<u>T Statistic</u> 5.59
F value	7.55 .392 Explanatory Variable	Coefficient		
F value	7.55 .392 Explanatory Variable Intercept	Coefficient 2.615*** 0.017	0.468	5.59
F value	7.55 .392 Explanatory Variable Intercept ADMt ENPVt-1 for Argentina	Coefficient 2.615*** 0.017 0.332**	0.468 0.009 0.106	5.59 1.84 3.14
F value	7.55 .392 Explanatory Variable Intercept ADMt ENPVt-1 for Argentina Bolivia	Coefficient 2.615*** 0.017 0.332** 0.380*	0.468 0.009 0.106 0.168	5.59 1.84 3.14 2.27
F value	7.55 .392 Explanatory Variable Intercept ADMt ENPVt-1 for Argentina Bolivia Colombia	Coefficient 2.615*** 0.017 0.332** 0.380* 189	0.468 0.009 0.106 0.168 0.219	5.59 1.84 3.14 2.27 -0.87
F value	7.55 .392 Explanatory Variable Intercept ADMt ENPVt-1 for Argentina Bolivia	Coefficient 2.615*** 0.017 0.332** 0.380*	0.468 0.009 0.106 0.168	5.59 1.84 3.14 2.27

 Table 3

 A Simultaneous-Equations Model of Party-System Fragmentation

a. ENPS = effective number of parties for seats.

b. ADM = average district magnitude.

c. ENPV = effective number of parties for votes.

*Significant at the .05 level; **significant at the .005 level; ***significant at the .0005 level or better.

effect on fragmentation in seats even when controlling for fragmentation in votes. There is, then, a mechanical effect of district magnitude. But as we shall shortly see, it is a much weaker effect than most specialists would have predicted.

The second equation in Table 3 confirms that we must control for the number of electoral parties, because ADM is a significant predictor of the

fragmentation of the vote. (Strictly speaking, ADM's coefficient is significant only at the .07 level, but this is too close to the conventional standard of .05 to ignore, especially when dealing with a control variable.) Moreover, ADM is significant even when controlling for the lagged fragmentation of the vote, meaning that ADM helps explain the *change* in fragmentation of the vote from one election to the next. This equation also reveals that the impact of the old level of fragmentation on the new varies significantly from one country to another: a result that has fascinating implications, which will be analyzed in the next section.

IMPLICATIONS FOR FRAGMENTATION OF THE LEGISLATIVE PARTY SYSTEM

The model for ENPS says two things: first, that the translation of votes into seats almost always reduces the effective number of parties; and second, that district magnitude partially offsets this reduction. The first finding, which was first demonstrated by Rae (1970), is expressed through the combined action of the intercept and the coefficient for ENPV. Setting aside the mechanical effect of district magnitude for the moment, seats and votes are in a linear relationship:

ENPS = .316 + .716 ENPV.

According to this formula, ENPS will be smaller than ENPV for any value greater than 1.11, which does not occur in party systems that are minimally competitive. (The lowest value in the Latin American data I have compiled is 1.32, for Mexico in 1964.) This formula is, I think, an improvement on Taagepera and Shugart's (1989) rule of thumb that ENPS = ENPV – .4 (pp. 77-91). The two formulas yield identical values for ENPS when ENPV = 2.52, but mine has a gentler slope. Under their rule, the percentage reduction in the effective number of parties declines rapidly to zero as the number of electoral parties rises; under mine, the rate of reduction always increases, but at a declining rate approaching a maximum of 28.4%. This is more in keeping with the commonsense rule that the more parties there are, the harder it is for any electoral system to represent them all proportionally.

Large district magnitudes can offset this reduction, but not by much according to this model. To increase ENPS by just one effective party, ADM would have to increase by 58.8 seats, an increment that is larger than all but

3 of the 62 ADMs in my sample. Achieving a reduction equivalent to one effective party by lowering ADM would be an impossibility for the remaining cases. Reformers often assume or imply that party systems can be reshaped dramatically by amending electoral laws. As far as district magnitudes are concerned, my estimates make such claims seem disappointingly unrealistic.

Nor is there much hope that some other aspect of electoral law might be more effective than district magnitudes at controlling fragmentation. Other variables that have no plausible significant partial association with ENPS when controlling for ENPV are:

- The proportion of the seats that were filled in single-member districts or under rules that guaranteed a fixed percentage of seats to the largest party
- The threshold for eligibility to win a seat, as a percentage of the total valid vote
- The inverse of this threshold
- Signatures required to register a party, as a percentage of the total valid vote⁹
- The inverse of this threshold
- The percentage of the vote required to maintain party registration
- The inverse of this threshold
- A dummy variable for concurrent presidential and legislative elections
- A dummy variable for honeymoon (first quarter of presidential term) elections
- A dummy variable for endterm (last quarter of presidential term) elections
- A dummy variable for midterm (middle half of presidential term) elections
- The proportion of the presidential term elapsed before the legislative election
- Many linear and nonlinear transformations of this timing variable, designed to adjust for a point of maximum impact on fragmentation

The one variable tested by others but not yet tested here is assembly size. However, because Lijphart (1994, pp. 95-117) found it to be his weakest predictor of fragmentation, I doubt that it would turn out to be significant while controlling for ENPV.

Also, despite much elegant and persuasive theorizing, simple ADM explains the translation of national votes into national seats better than any other operationalization of aggregate district magnitude. Exploring alternatives, I tried the following substitutes for ADM:

9. The signature threshold and threshold to maintain registration were, in fact, statistically significant, but their signs indicated that the higher the threshold, the larger the number of parties. Because this is just the reverse of any plausible relationship, I have written them off as artifacts of the sample.

- The magnitude of the largest district in the country (LDM)
- A weighted average district magnitude (WADM)¹⁰
- An adaptation of Generalized Duverger's Rule based on ADM¹¹
- An adaptation of Generalized Duverger's Rule based on WADM.

All of these are closely intercorrelated and are often statistically significant when substituted for ADM, but ADM's coefficient is the most significant in this model and in many other models along the same lines.

IMPLICATIONS FOR FRAGMENTATION OF THE ELECTORAL PARTY SYSTEM

There is inertia in the fragmentation of the electoral party system. If one were to estimate the impact of lagged ENPV on present ENPV (while controlling for ADM), it would be the most significant explanatory variable in the model, at p < .0001, with a coefficient of 0.5. Although there are better models of ENPV, this one holds an important lesson: that fragmentation does not start from scratch at every election but changes incrementally. This is important to keep in mind when assessing the impact of electoral laws, because it means that we should not expect the full impact of a law or a reform

10. Weighted average district magnitude (WADM) was intended to be a more transparent version of Taagepera and Shugart's (1989) "effective magnitude" (pp. 135-140) and Lijphart's (1994) "effective threshold" (p. 27). The idea behind it is that the true effect of district magnitude should lie somewhere between ADM and the magnitude of the largest district in the country (LDM). Weighting each district magnitude by its proportional contribution to total seats produces an index that equals ADM if all districts are of equal magnitude and approaches LDM to the degree that one of the district dwarfs the others. For a single-tiered system, the formula for WADM reduces to the sum of the squared district magnitudes divided by the total number of seats. For a two-tiered system, WADM elegantly solves the problem of combining the tiers into a single index. If, as is typical, the second tier is a single national district, the magnitude of that district is effectively equal to the sum of all the seats allocated in the first tier; but the weight of the second tier is only the proportion of total seats that are allocated in it, which is usually a far smaller number. One supposed advantage of effective magnitude and effective threshold is that they similarly incorporated multiple tiers and additional seats into a single index; however, both require some subjective judgment to calculate, whereas WADM does not.

11. Taagepera and Shugart's (1989) "Generalized Duverger's Rule" (p. 53) states that ENPS = 1.15 (2 + log M), where M is district magnitude. However, it is intended to apply to actual, not aggregated, district magnitudes, which makes its use problematic for explaining national-level fragmentation. My adaptations of this formula simply substitute ADM and WADM for M and leave off the 1.15 coefficient because regression estimates provide a coefficient automatically.

to manifest itself immediately. Rather, to the extent that laws shape party systems, they do so gradually over a period of several elections.

The weight of this inertia, however, varies significantly from country to country. As estimated by equation 2 in Table 3, it ranges from a nonsignificant –.19 in Colombia to a significant +.38 in Bolivia. To what, concretely, do these coefficients refer? Various possibilities suggest themselves. These varying degrees of inertia could reflect cross-national differences in the strength of party identification, or in the willingness of politicians to split away and found new parties, or in voter expectations about which parties will be successful. They could also reflect different rates of mass political learning from the results of past elections. Although I am admittedly indulging in speculation, I favor a different interpretation in which these coefficients indirectly reflect the number of political cleavages in a society. The reasons why are subtle and impossible to see as long as one's attention is directed to the immediate effects of lagged vote fragmentation. To perceive the possible connection between lagged fragmentation and cleavages, it is necessary to shift attention to the long term.

What happens to fragmentation in votes over the course of several elections? In the initial election, the effective number of parties (call it L_0) is a baseline that we will call simply I. Thus, $L_0 = I$. In the second election, the relationships estimated in equation 2 begin to operate, and

$$L_1 = aI + k$$
,

where a is the coefficient of lagged fragmentation, and k = 2.615 + .017 ADM (we can treat it as a constant because ADM is not time dependent). In the third election,

$$L_2 = a(aI + k) + k = a^2I + k (1 + a).$$

Repeating this process, it soon becomes clear that the general formula for L at time t is

$$L_t = a^t I + k (1 + a + a^2 + ... + a^{t-2} + a^{t-1}).$$

In the long term, as t approaches infinity, the a's with exponents shrink to zero (because they are between -1 and 1), and the limit of L becomes 0 + k $(1 + a + a^2 + ...)$, which is exactly equal to

$$\lim_{t \to \infty} L_t = \frac{k}{1-a}.$$

In plain English, the model in Table 3 holds that in the long run, the level of fragmentation of the electoral party system should converge to a country-specific effective number of parties, regardless of the initial level of fragmentation. This convergence point is equal to (2.62 + .017 ADM)/(1 - a). The coefficients of lagged fragmentation could therefore be considered "convergence coefficients." The smaller the coefficient, the more rapidly the effective number of parties should approach the convergence point, and the lower that convergence point will be; the larger the coefficient, the more slowly the effective number of parties should approach the convergence point, and the higher that point will be. In no case (in this sample) is the time required for convergence longer than five elections.¹² In Colombia, the time required is virtually zero.

For a more intuitive illustration of convergence refer to Figures 3, 4, 5, 6, and 7, which compare the predicted eventual convergence points and the actual effective number of electoral parties for each of the five countries. These figures call attention to two points. First, the predicted convergence points vary very little over time within most of the countries. They change only if there is a change in ADM, whose impact is heavily discounted anyway. Only in Colombia 1990 and in Peru 1978 and 1992 was the increase in district size for the constituent assembly elections large enough to affect the predicted convergence points noticeably. As with ENPS, it takes a big change in ADM to effect a small change in the effective number of parties, although in this case the degree of change necessary is also a function of the convergence coefficient. Table 4 gives (a) the change in ADM required to increase or decrease ENPV by one effective party given various convergence coefficients and (b) the change in ADM required to change ENPS by one when both the psychological effects on electoral parties and the mechanical effect on legislative parties are taken into account. In theory, a comparatively minor reduction of 3.5 seats per district would be sufficient to reduce ENPV by 1 if the convergence coefficient were 0.9. We must remember, however, that all of the coefficients reported here are less than 0.4, which would require a change of two dozen or more seats in ADM. The only cases of such a dramatic change in ADM in this set of countries were the constituent assembly elections of 1990 in Colombia and 1978 and 1992 in Peru, when ADMs that were normally less than 10 in chamber elections suddenly increased to 71, 100, and 80, respectively-ascribable to the election of constituent delegates

12. In this sample, the maximum theoretical time required for convergence to within .05 points of the convergence point is 4.75 elections, for Bolivia, with 4.96 "initial" effective parties in 1989 and a convergence coefficient of .380. The formula for convergence time (T) is $T = (\log [.05/I]) / \log a$, where I is the initial number of parties and a is the convergence coefficient.

in a single national district—and then fell back to normal magnitudes afterward.¹³ Changes in district magnitude sufficient to raise or lower the effective number of electoral parties by 1 are therefore quite rare. Because the psychological (and mechanical) effects are relatively weak, the convergence coefficients are by default the most powerful determinants of the eventual degree of fragmentation of party systems.

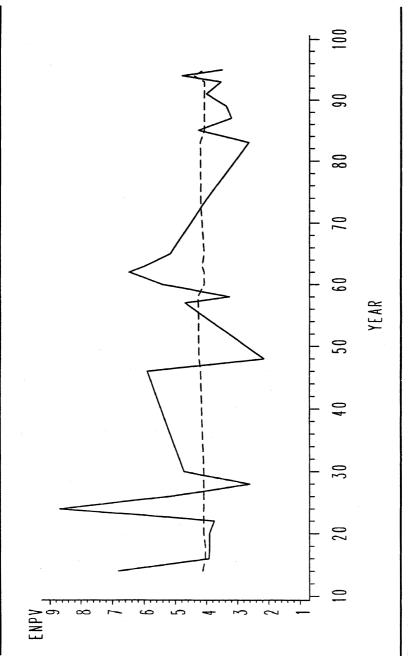
Second, some actual convergence toward the predicted convergence points can be observed in Figures 3-7. It is striking in Bolivia, and loose and late but still present in Argentina and Venezuela.¹⁴ The degree of convergence in Colombia is slight and disrupted once by the aberrant constituent assembly election, whereas in Peru some dramatic convergence can detected by the early 1960s, only to be disrupted in 1978 and 1992. In both cases, when the convergence point changes dramatically, the pattern of convergence is disrupted and it takes several elections to recover, for the same reason that it is harder to hit a moving target.

These illustrations tell us what a convergence point *does*, but not what one *is*. Although one can only speculate at this point, I would like to argue that convergence points are indirect measures of the number of blocs defined by political cleavages in the electorate. Political cleavages are more specific than social cleavages and more general than party identification. Unlike social cleavages, which divide societies along the lines of fairly objective primordial characteristics such as race, class, language, ethnicity, or gender, political cleavages are mediated by subjective understandings of the world and one's

13. For those who wonder whether the impact of district magnitude might be greater if these three "outlier" elections were prevented from skewing the "true" relationship, I have found that the weak impacts reported here are due entirely to the disparity between these three constituent assembly elections and the other 59, which were conducted with far smaller ADMs. When the three constituent assembly elections are excluded from the sample, the relationship between ADM and fragmentation disappears completely (t statistics drop to .005 and -.458 for the mechanical and psychological effects, respectively). The weak effects reported here are, therefore, the most generous argument that can be made for district magnitude with this sample of countries, when controlling for fragmentation in votes.

14. The convergence pattern in Argentina is easier to appreciate if you segment the graph into four different party systems—the 1916-1930 period of Radical dominance, the 1946-1948 elections in which Peronism was born, the 1957-1965 period in which Peronism was proscribed, and the period from 1973 to the present, when neither Radicals nor Peronists were proscribed. Clearly, a variable that measured the disruptions to convergence caused by the creation, removal, and restoration of major parties would mop up much of the unexplained variance (for AD/M – 19 in Colombia and Cambio 90 in Peru as well), but until such phenomena can be treated in a theoretical framework, a variable of this sort would smack of adhockery.

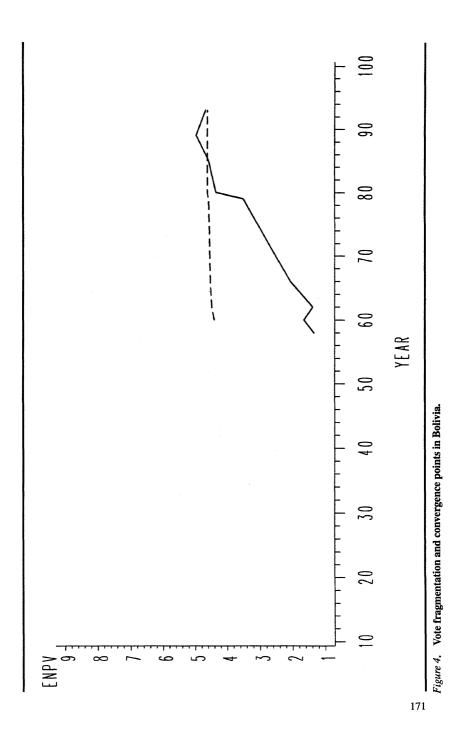
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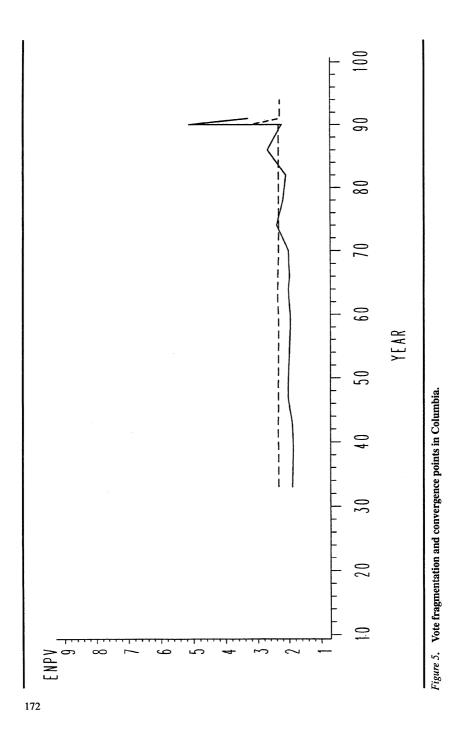


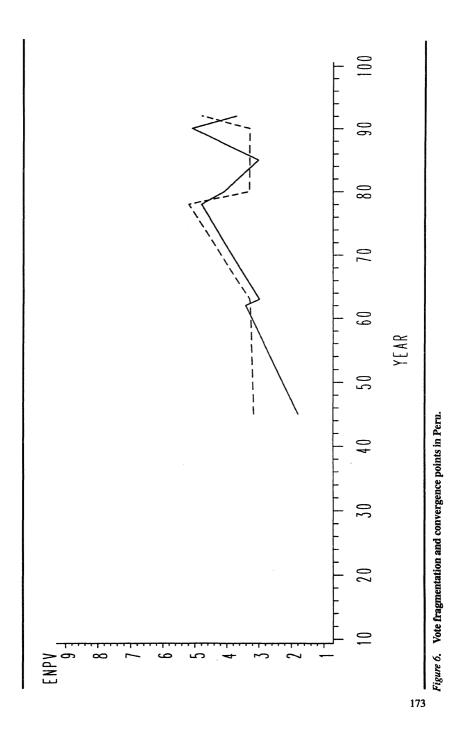


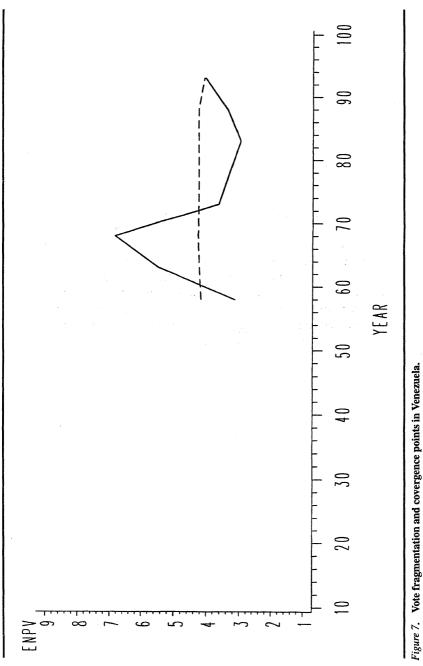
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Convergence						-		_		
coefficient	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
Psychological effect on electoral parties										
ΔADM	58.8	52.9	47.1	41.1	35.3	29.4	23.5	17.7	11.8	5.9
Combined with mechanical effect, on legislative parties										
ΔADM	40.0	36.0	31.9	27.8	23.8	19.7	15.7	11.6	7.6	3.5

 Table 4

 Change in ADM^a Required for a Change of One Effective Party

place in it. And unlike party loyalties, political cleavages transcend the actual choices that the party system happens to offer voters in any given election.¹⁵ Rather, political cleavages are the divisions between general political orientations that are derived, in part, from social characteristics but are mediated by culturally defined identities and perceptions of conflict and shared interest. The most familiar examples of the blocs defined by political cleavages are positions on the left-right dimension; however, blocs based on religious, ethnic, or gender identities, or perhaps even personalistic loyalties, are also possible.

Prior theory supports the idea that cleavages are important determinants of the number of parties. For example, Lijphart (1984) argued that "when there are several dimensions of political conflict in a society, one would expect that a relatively large number of parties are needed to express all of these dimensions, unless they happened to coincide with each other" (pp. 147-148), and he finds a .75 correlation between the number of dimensions and the effective number of parties. Taagepera and Shugart (1989, pp. 92-103) attempted to refine the connection by claiming that ENPS equals the number of issue dimensions plus one. They also elaborate an argument as to why such a relationship should exist: that when a new issue dimension arises, it generally creates only one new party in the long run.

I prefer to build my hypothesis around the number of blocs rather than the number of cleavages because the number of blocs formed depends on the degree to which cleavages overlap. For example, if a society has a left-right

15. The distinction between specific party loyalties and the more general political cleavages helps explain why convergence points do not vary much even when significant new parties are born. In Argentina, for example, it could be argued that Perón did not create a populist or pro-union bloc; rather, he provided expression to one that already existed and had been providing lukewarm support to the Radicals and the Socialists for years.

cleavage and a religious-secular cleavage, it would have two blocs if the cleavages reinforce each other, three blocs if the left is uniformly secular but the right is divided along religious-secular lines, and four blocs if the cleavages crosscut each other completely. Because blocs take the degree of overlap into account, they should be better predictors of party-system fragmentation than the number of cleavages would be.

The connection between the number of cleavages or blocs and the phenomenon of convergence toward country-specific levels of fragmentation could hardly be clearer. In essence, each country has an underlying political cleavage structure that is relatively permanent. Party systems tend to adjust themselves to this structure because voters reward the parties that are most closely aligned with it. If the party system is less fragmented than the cleavage structure, then the voters will reward politicians who splinter away and found new parties; if the party system is more fragmented than the cleavage structure, then either the parties merge or the voters choose the party that best represents the bloc formed by the cleavage, and the competitors eventually fade away. This theory will have to remain speculative until there is a rigorous way to count cleavages, but in the meantime it is a very attractive explanation for fragmentation that is perfectly consistent with the convergence coefficients discussed here.

Cleavages are notoriously difficult to count, especially in Latin America, where clientelism undermines ideological attachments.¹⁶ But it is safe to say that there are fewer dimensions of conflict in Colombia, where the nature of the cleavage dividing Liberals from Conservatives is blurry, than in Bolivia, where one finds the ideological left-center-right dimension crisscrossed with class, regional, and racial (as well as personal) dimensions of conflict. It seems to be no accident that Colombia and Bolivia also have the most divergent convergence coefficients among the five countries studied here. On the basis of the coefficients for their last elections, the convergence points for the five Latin American countries are: Argentina, 4.05; Bolivia, 4.61; Colombia, 2.26; Peru, 4.76¹⁷; and Venezuela, 4.07.¹⁸ (In interpreting these figures it must

16. See, however, Huber and Inglehart (1995).

17. This figure is higher than Bolivia's because the Peruvian Democratic Constituent Congress of 1992 was elected in an 80-member single national district.

18. The figure of 4.07 for Venezuela will seem high to those who consider it historically a two-to-two-and-a-half-party system. But it was far more fragmented than this in 1963-1968, and the actual value of ENPV in 1993 was, in fact, 4.03, with votes divided relatively equally among Acción Democrática (AD), Comité de Organización Política Electoral Independiente (COPEI), Causa R, and Convergencia Nacional. Perhaps something like this "aberrant" four-party system will be normal for Venezuela in the future.

be remembered that the Laakso-Taagepera index is often higher than our intuitive judgments about the number of parties.)

ECONOMIC PERFORMANCE AND PARTY-SYSTEM FRAGMENTATION

Even assuming that this basic model of party-system fragmentation is correct, it is far from the whole story, as only 40% to 50% of the variance has been explained so far. This model would not allow one to predict levels of fragmentation with any confidence (except in Colombia, where they rarely change much anyway). It is only natural, then, to ask what additional factors might be added to the model to provide a fuller understanding of the determinants of the number of parties. My tests so far indicate that fragmentation is not affected by a history of repression of parties and neither increases nor decreases as a democratic regime matures (when controlling for convergence). No other potential explanations for the remaining variance have been ruled out at this point, but one that seems promising is economic performance.¹⁹

It may seem obvious that economic performance should affect partysystem fragmentation. It is easy to imagine that if the economy declines, some leaders of the governing party are more likely to defect and form a splinter party, formerly pro-government voters are more likely to support such defectors, and some politicians who were never aligned with the government are more likely to win support by criticizing the government for its management of the economy. In a more diffuse sense, one might expect there to be less consensus about the best course for the economy, and therefore new political support for a wider range of parties.

There are several reasons why economic decline may, nevertheless, not increase fragmentation. Looking at the mass level, first, most research on voting behavior tells us that party identification cushions the impact of economic performance. Voters identified with the governing party or parties tend not to blame the government when the economy sours and so continue to support it. Conversely, in periods of economic improvement, party ID

19. According to some models, fragmentation declines as turnout increases, but it increases in proportion to the absolute value of changes in turnout. I have rejected this line of explanation because the fact that changes in turnout are associated with seats but not votes suggests that fragmentation is more a cause than an effect of turnout. Adding turnout to this model as an endogenous variable confirms this direction of causality. allows the opposition to deny the government credit on the grounds that their party could do better or that other economic problems remain unaddressed. The stronger party identification is, the less impact the economy should have.

Second, even the voters with weak identification, whose choices are affected by economic performance, may behave in ways to reduce fragmentation in an economic decline and augment it in a boom. They may defect from a minority governing party to a larger opposition party, increasing the concentration of the vote. This scenario does not occur often because the president's party is usually the largest one, but there are exceptions-Bolivia 1985 and 1989, Chile 1970, Peru 1990, and Venezuela 1978, and perhaps others. And even if the governing party were the largest party at first, fragmentation would be reduced if an opposition grouping emerged as the new largest party and became larger than the governing party, as Ibáñez's Partido Agrario Laborista (PAL; Labor Agrarian Party) did in Chile and the Peronists did in Argentina and Fujimori's Cambio 90/Nueva Mayoría did in Peru in 1992-1995. At the elite level, opposition politicians from a fragmented group of small parties have at times been known to merge their organization into a united opposition alliance, thereby reducing fragmentation. This occurred in Chile when the Liberals and Conservatives merged to form the National Party and was augmented when they threw their support to the Christian Democrat Eduardo Frei in 1965. In general, economic crisis can reduce fragmentation if it polarizes a party system that was relatively fragmented before. If one were to disaggregate the question and examine the impact of the economy on governing parties or minority governments, and so on, then it might be possible to define unambiguous expectations. But there is no a priori reason to expect economic performance consistently to increase or decrease fragmentation at the highly aggregated level of the party system. It becomes an empirical question. An open-ended search for an empirical association between economic crisis and fragmentation is probably worth doing, but any findings would call for further theoretical work to explain why some of the many possible connections hold and others do not.

One such open-ended search with Latin American data turns up the following finding: that fragmentation may be positively associated with major currency devaluations.²⁰ Model 1 in Table 5 reports the parameters of

20. Incidentally, according to multivariate estimates, no other significant relationships exist for this sample between fragmentation and any of the following economic indicators—gross domestic product (GDP), annual change in GDP, cumulative change in GDP during the last 2 years, cumulative change in GDP since the last election, average annual change in GDP, cumulative change in GDP since the last election, average annual change in GDP, cumulative change in per capita GDP, since the last election, cumulative devaluation in the

	Model 1	Model 2	
N	47	46 (without Peru 1990)	
Endogenous variable 1	ENPS _t ^a	ENPS _t	
Adjusted R^2	.587	.625	
Explanatory	Unstandardized	Unstandardized	
Variable	Coefficient	Coefficient	
Intercept	0.533	0.449	
1	(.374)	(.339)	
ADM ^b	0.015***	0.015**	
	(.005)	(.005)	
ENPV ^c	0.630***	0.660***	
•	(.108)	(.098)	
Devaluation	0.00066	0.179	
	(.00036)	(.409)	
Endogenous variable 2	ENPV _t	ENPV _t	
Adjusted R^2	.436	.487	
Explanatory	Unstandardized	Unstandardized	
Variable	Coefficient	Coefficient	
Intercept	2.242***	2.087***	
	(.456)	(.438)	
ADM _t	0.017*	0.020*	
	(.008)	(.008)	
ENPVt-1 for			
Argentina	0.393**	0.421***	
	(.115)	(.110)	
Bolivia	0.475**	0.502**	
	(.152)	(.145)	
Colombia	0.021	0.065	
	(.201)	(.191)	
Peru	0.263	0.207	
	(.155)	(.149)	
Venezuela	0.433**	0.462***	
	(.128)	(.122)	

Table 5 Simultaneous-Equations Models With Devaluation

Note. Standard errors are given in parentheses.

a. ENPS = effective number of parties for seats.

b. ADM = average district magnitude.

c. ENPV = effective number of parties for votes.

*Significant at the .05 level; **significant at the .005 level; ***significant at the .0005 level or better

this finding.²¹ There are three reasons why there is some doubt about the validity of this finding. First, the significance test for devaluation is borderline, at p = .07. Second, devaluation is associated with fragmentation in seats but not in votes, which suggests that fragmented control of the legislature may be contributing to economic problems that require major devaluations, not the other way round. And third, tinkering with transformations of the devaluation variable reveals that only extremely traumatic devaluations, in excess of 900% in a year, appear to have such a noticeable effect on fragmentation. In fact, in this sample the entire relationship between devaluation and fragmentation hinges on a single case—Peru in 1990, which brought outsider Alberto Fujimori to power in the midst of an economic collapse.²² When this case is removed from the sample, as in Model 2 in Table 5, devaluation has no effect, and the other coefficients remain about the same. The finding therefore hangs on a very slender thread.

Would that slender thread become a sturdy cable if we had evidence from additional cases? No, but it does become more substantial. Using a larger database with data from 92 elections about fragmentation in votes and various economic indicators for six other countries (Brazil, Chile, Costa Rica, Ecuador, Mexico, and Uruguay) in addition to the five already studied, it is possible to test for relationships between economic performance and party-system fragmentation while controlling for lagged vote fragmentation in each country. These estimates are not strictly comparable with those in Tables 3 and 5 because ADM was excluded to increase the sample size and an improved indicator of the expected effect of bans and boycotts on fragmentation was added to the model.²³ However, according to these estimates, which are reported in Table 6, devaluation does indeed increase fragmentation, as does per capita gross domestic product (GDP). These findings are reassuring,

last 2 years, cumulative devaluation since the last election, or average annual devaluation since the last election. Significant bivariate correlations exist between ENPV and per capita GDP (1980s only); between ENPS (all years for five countries) and annual change in GDP and 2-year cumulative change in GDP; and between ENPS (1978 and after, five countries) and GDP, per capita GDP, and 2-year cumulative change in GDP.

^{21.} The sample size is reduced to 47 in this estimate because economic data are not available for the cases predating 1953, almost all of which were in Argentina and Colombia.

^{22.} There are two other devaluations of this magnitude in the sample–Argentina 1989 and Bolivia 1985—but according to a partial plot, their impact on fragmentation was within the range of cases in which the devaluation was less than 100%.

^{23.} The "boycotts and bans" variable is a measure of the expected impact of the addition or removal of any given party on the expected number of parties. It is derived from the formula for the Laakso-Taagepera index, and is calculated as

	Model 3 (Devaluation Only)	Model 4 (Per Capita GDP ^a Only)	Model 5 (Devaluation and Per Capita GDP)
N	98	93	92
R^2	.705	.702	.726
F value	15.46	14.32	14.60
Intercept	1.765***	0.407	0.402
	(.425)	(.684)	(.663)
Devaluation	0.0018*		0.0016*
	(.0007)		(.0006)
Per capita GDP		2.11*	1.785*
-		(.789)	(.780)
Boycotts and bans effect	0.690***	0.716***	0.710***
•	(.129)	(.123)	(.119)
$ENPV_{t-1}^{b}$ for			
Argentina	0.534***	0.342*	0.380*
	(.122)	(.135)	(.133)
Bolivia	0.472*	0.760***	0.703***
	(.183)	(.191)	(.186)
Brazil	0.855***	0.907***	0.902***
	(.102)	(.104)	(.101)
Chile	0.680***	0.476***	0.515***
	(.090)	(.117)	(.115)
Colombia	0.256	0.206	0.288
	(.219)	(.204)	(.201)
Costa Rica	0.360	0.279	0.372
	(.208)	(.191)	(.190)
Ecuador	0.891***	0.926***	0.950***
	(.108)	(.102)	(.099)
Mexico	029	601	474
mente	(.388)	(.430)	(.422)
Peru	0.300	0.416	0.388*
	(.173)	(.163)	(.158)
Uruguay	0.337	026	0.077
<i>y</i>	(.256)	(.279)	(.275)
Venezuela	0.552***	0.315	0.389*
	(.150)	(.162)	(.160)

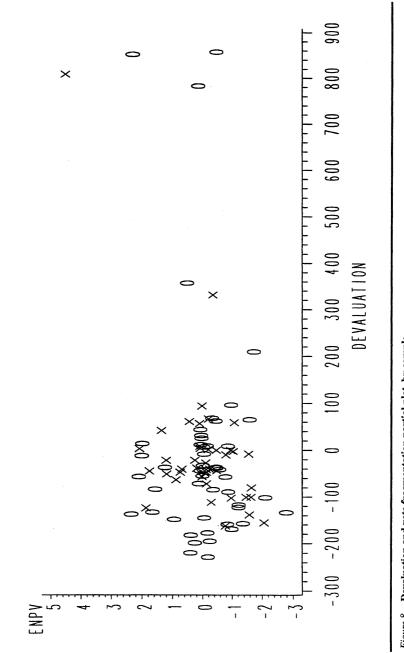
Table 6
Significant Economic Factors in an Expanded Sample

Note. Dependent variable is ENPV_t. Coefficients are unstandardized. Standard errors are in parentheses.

a. GDP = gross domestic product.

b. ENPV = effective number of parties for votes.

*Significant at the .05 level; **significant at the .005 level; ***significant at the .0005 level or better.





because two other cases of massive devaluation—Brazil 1990 (at the transition from Sarney to Collor) and Mexico 1982 (coinciding with the debt service moratorium)—flesh out the relationship somewhat, and the additional cases are more supportive of the finding than the original five were. Figure 8 is a plot of the partial relationship (purged of the partial effects of other explanatory variables in the model) between devaluation and vote fragmentation, in which the two samples can be distinguished—0's mark the original sample of five countries and X's mark the additional six countries. With these additional cases, Peru in 1990 begins to look a bit less like an outlier.

But if these findings are valid, they offer more questions than answers. Why does devaluation and not some other dynamic aspect of economic performance augment fragmentation? Why only traumatic devaluations? To what extent do fragmented party systems themselves contribute to massive devaluations? Why is the effect to increase, rather than decrease, fragmentation? Why would fragmentation increase with per capita GDP?²⁴ How could these relationships exist for some countries but not others? Whether these findings would hold when controlling for district magnitude is also unknown, so at this point they must be regarded as inconclusive, although worthy of further investigation.

CONCLUSION

For several decades now political scientists specializing in the impact of electoral laws on party systems have labored to tell us as much as can be known about elections without delving into the nitty-gritty of campaigns, ideologies, rhetoric, argumentation, platforms, programs, tactics, propaganda, clientelism, vote buying, attack ads, slogans, sound bites, and

BOYBAN EFFECT =
$$\frac{(1 - BOYBAN)^2}{\frac{1}{ENPV_{t-1}} - BOYBAN^2} - ENPV_{t-1}$$
,

where BOYBAN is the 0-1 proportion of the vote won previously by boycotting or banned parties or currently on restoration. Unlike the boycotts and bans variable in Coppedge (1992), it is positive for parties that are removed and negative for parties that are restored. This formula is based on the assumption that when a party is removed from, or restored to, the system, all the other parties' shares are increased or decreased proportionally.

24. The answer to this question is probably that the poorer countries are less pluralistic. Their civil societies are not as vibrant and contestational, and their regimes are more likely to repress certain opposition groupings, resulting in fewer parties. Bolivia during the Revolution, Peru before the 1970s, and Mexico come to mind here. The association between per capita GDP and levels of democracy is well known.

personalities—in short, without delving into what other political scientists and the general public consider the flesh and blood of elections. Although there are commonsense reasons to be skeptical about the aims of the electoral law specialists, their efforts have turned up abundant evidence that there is a sort of skeleton underlying the flesh and blood of elections—a deep structure that both supports and constrains the evolution of party systems. This structure can be taken for granted as long as one's attention is narrowed to a single country and a limited series of elections. But when one compares party systems, as political scientists increasingly do, the deep structure must be acknowledged; otherwise, we get a distorted view of elections in which any outcome is possible and individual actors and ephemeral forces are fully responsible for whatever happens. The structure will never completely explain outcomes either, but it is an indispensable part of the picture.

However, there is still disagreement about the nature of the structural factors shaping elections. This article has suggested that the influence of electoral laws has been exaggerated and that more attention should be paid to cleavages in society if we want to understand as much as possible about structural determinants of party-system evolution. It has also suggested that economic performance may affect fragmentation but that more nuanced hypotheses about the connections between economic performance and fragmentation need to be elaborated before much progress will be made in this line of inquiry.

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