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**EXPLAINING THE EFFECTIVE NUMBER OF PARTIES PARADOX
IN POST-COMMUNIST EUROPE: PRESIDENTS MATTER**

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A Post-Communist Anomaly?

According to Riker (1982), Duverger's Law is among the most established propositions in political science. The Law holds that single mandate district (SMD) electoral systems tend to be associated with two party political systems. Its corollary, Duverger's Hypothesis, associates proportional representation (PR) with multi-party systems. Since Duverger (1954) first postulated his law and hypothesis, a number of scholars have argued in a similar vein (Cox, 1997; Lijphart, 1994; Rae, 1971; Taagepera & Shugart, 1989). However, research on Duverger's Law and Hypothesis in post-communist Europe has been inconclusive. While Ordeshook and Shvetsova (1994) find that electoral systems have the expected effect on party systems, Moser (1997; 1999; 2001) argues that they do not hold in several instances. Golosov (2003) finds in Russia that PR has benefited a small number of parties while SMD has led to their proliferation.

Given the area studies tradition of communist and post-communist studies, it is not surprising that a number of scholars have argued that social cleavages provide a stronger explanation for party fragmentation than electoral law (Evans and Whitefield, 1993; Kitschelt, 1992; Kitschelt, 1995). However, efforts to locate the explanation in institutional factors have continued as well. More recent scholarship has focused on interactive effects. Noting that a significant number of post-communist states have adopted a mixed electoral system, a number of studies have argued that an interactive effect exists across the two tiers, which requires that such systems be treated as distinct from pure SMD or PR electoral systems (Clark and Prekevičius 2000; Cox and

Schoppa 2002; Ferrara 2004; Ferrara and Herron 2005; Herron and Nishikawa 2001) vice two separate systems (Moser 1997; 1999; 2001; Moser and Scheiner 2004). Other scholars have focused on the impact of strong presidents on party systems (Ishiyama & Kennedy, 2001; Fish, 2000; Colton, 1995).

We continue in this latter vein to seek institutional explanations for party system fragmentation in post-communist Europe. Our analysis gives special consideration to interactive effects. In particular, we test for the effect of presidentialism on the number of effective parties, the contamination effect across tiers in mixed electoral systems, and the interaction between district magnitude and measures of social heterogeneity. The analysis is cross-national and relies on election data from 1990 to 2004. Our results argue that presidential strength is the most salient factor in explaining the effective number of electoral parties, and that electoral system and social heterogeneity provide the best explanation for the number of parliamentary parties. However, once first elections are removed from the analysis, presidential strength is the most salient factor in explaining both the effective number of electoral and parliamentary parties.

Explaining the Effective Number of Parties

The literature on party system fragmentation identifies three broad approaches for explaining the number of effective political parties. The first, which is associated with Maurice Duverger (1954), takes a decidedly institutionalist perspective and argues that the number of parties is constrained by the electoral system (Cox 1997; Lijphart 1990, 1994; Rae 1971; Sartori 1968, 1976; Taagepera and Shugart 1989). Starting from the premise that all electoral laws essentially reduce the number of political parties

(Duverger's mechanical effect), proponents of this school contend that the tendency to do so is stronger in single mandate electoral systems than in PR systems. Since parties that win less than a plurality in single-member districts do not receive a seat, small parties are particularly under-represented in SMD systems. Once voters realize this, they are less likely to "waste" their votes on smaller parties (Duverger's psychological effect), which further reduces the representation of smaller parties. Extending Duverger's logic, Sartori (1968) argued that the rational response of parties is to coalesce in the largest possible blocs in order to increase their chance of electoral victory. Subsequent scholarship using this approach has adopted district magnitude as a surrogate measure in testing the effect of electoral system design on party system fragmentation (Cox 1997; Cox and Shugart 1996; Taagapera and Shugart 1989).

Eschewing institutional explanations, a second approach, associated with Lipset and Rokkan (1967), locates the cause of party fragmentation in social cleavages, such as class, religion, ethnicity, region, and the urban-rural dimension (Heath, Jowell, and Curtice 1985; Kelley, McAllister, and Mughan 1985; Kitschelt 1993; Lipset 1960; Rose and Urwin 1969). The classic view is that these cleavages are artifacts of deeply rooted historical and cultural experiences and are reflected in social divisions (Eckstein 1963; Grumm 1958). More recent scholarship has argued that party fragmentation might be the result of social factors that are less historically and culturally constrained. Among the most popular approaches is that associated with Ronald Inglehart (1984; 1990) who argues that parties reflect newly emerging ideas and values in a post-industrial era (Coppedge 1997; Franklin, Mackie, Valen, et.al. 1992; Knutson 1988; 1989). A closely related explanation argues that party systems are rooted in social divisions that are

constructed by modern political and social elites (Przeworski and Sprague 1986; Torcal and Mainwaring 2003).

A third school has emerged locating the explanation of party fragmentation in interactive effects. Within this approach, a number of scholars have found that the interactive effect between district magnitude and social heterogeneity provides greater explanation than either factor by itself (Amorim Neto and Cox 1997; Ordeshook and Shvetsova 1994; Taagepera 1999). Others have focused on the interaction of institutions. Such studies have included those that have considered the impact on the party system of concurrent elections to both chambers of a bicameral legislature (Cox 1997), local elections held concurrently with national elections (Gaines 1999), an inchoate party system (Moser 1997, 1999, 2001; White, Rose, and McAllister 1997), and federalism (O'Neill 2003).

More recently, analyses of institutional interactive effects have focused on mixed electoral systems (Clark and Prekivičius 2000; Ferrara 2004; Ferrara and Herron 2005) and the strength of presidents (Samuels 2002; Shugart 1998). The recent rise in the popularity of mixed electoral systems has resulted in an increase in scholarly attention devoted to them (Massicotte and Blais 1999; Shugart and Wattenberg 2001). In those systems in which the SMD and PR tiers are not linked (non-compensatory systems), disagreement has emerged over whether the two tiers can be treated independently of each other. Those who believe they can be, argue that the number of effective parties in the SMD tier should be less than those in the PR tier (Benoit 2001; Moser 1997, 1999, 2001; Moser and Scheiner 2004; Reed 1999; Stratmann and Baur 2002). The opposing view is that contamination effects across the two tiers make mixed electoral systems

distinct from either pure SMD or PR systems (Bawn and Thies 2003; Herron and Nishikawa 2001).

Those who treat each tier of non-compensatory mixed systems independently of the other implicitly assume that parties pursue separate strategies in each tier. However, there are reasons to believe that this may not be the case. As Ferrara and Herron (2005) point out, placing more candidates in the SMD tier increases a party's visibility and thereby increases its chances in the PR tier. Hence, more parties are likely to enter the SMD races. This tendency might well be exacerbated by the calculus that running in PR races will enhance the party label and therefore the chance of victory in SMD races.

Scholars have also placed increasing attention on the affect of presidents on party systems. The earliest considerations emphasized the timing of presidential elections. Scholars generally argued that systems in which presidential elections were held close to legislative elections tended to a two-party system (Amorim Neto and Cox 1997; Jones 1995; Shugart and Carey 1992). Mainwaring (1993) was the first to shift the focus to the strength of presidents. He contended that strong executives can significantly reduce incentives for those seeking legislative office to coalesce in large parties. As a consequence, the number of parties in such systems is likely to be greater regardless of the choice of electoral system. Samuels (2002) subsequently argued that the reverse should be true - the number of parties is smaller in presidential systems. He (Samuels 2000) found that in Brazil's federal system the effective number of parties in legislative elections is increased by the number of candidates in gubernatorial races rather than the presidential race.

Testing for Interactive Effects

The foregoing discussion demonstrates that the literature has identified three categories of variables possess causal significance for party system fragmentation: institutional design, social cleavages, and interactive effects. We intend to test these competing arguments in post-communist Europe. We hypothesize as follows.

Institutional Effects

Hypothesis 1_A: SMD electoral systems are associated with a lower degree of party system fragmentation than PR systems.

Hypothesis 1_B: Higher district magnitude is associated with a higher degree of party system fragmentation.

Social Cleavages

Hypothesis 2: Increasing social heterogeneity is associated with a higher degree of party system fragmentation.

Interactive Effects

Hypothesis 3_A: Increasing social heterogeneity in SMD electoral systems reduces the degree of party system fragmentation.

Hypothesis 3_B: Mixed electoral systems are associated with higher levels of party system fragmentation.

Hypothesis 3_C: Political systems with stronger chief executives are associated with a higher degree of party system fragmentation.

Hypothesis 3_D: The closer a legislative election is to the election of the chief executive (president), the lower the degree of party system fragmentation.

As a measure of our dependent variable, party system fragmentation, we calculated the inverse of the Herfindahl-Hirschman concentration index. Taagepera and Shugart (1989, p. 79) employed this index to indicate the “number of hypothetical equal-sized parties that would have the same effect on fractionalization of the party system as have the actual parties of varying size.”¹ The formula permits us to calculate two measures of party system fragmentation using constituency level election results: the effective number of parties based on vote share, N_v , which uses the fractional vote share of the i th party for p_i , and that based on seat share, N_s , using the fractional seat share of the i th party. We calculate N_v and N_s using the election results for the countries of post-communist Europe compiled by the *Project on Political Transformation and the Electoral Process in Post-Communist Europe*.² A description of the project³ and the data base⁴ are available on line. Gaps in the database were filled using data available on the websites of the electoral commissions of the relevant countries. We include all elections conducted from 1990 to mid-2004 in post-communist Europe.⁵

We test the effect of a number of independent variables on party system fragmentation. The first is directly related to Duverger’s Law and Hypothesis. We code countries with an SMD system “1” and those with a PR system “2.” Each tier of mixed electoral systems is treated separately.

We calculate our second independent variable, district magnitude, using a variation of nationwide effective magnitude that follows the equation:

$$M_{eff} = \sum_{i=1}^n (S_i M_i) / S$$

where M_{eff} is nationwide effective magnitude, S_i is the number of seats of the i th district, S is the total number of seats in parliament, and M_i is the magnitude of the i th district.

While a district's magnitude and number of seats are often equated, we treat S_i and M_i as distinct due to the operation of plurality selection and legal thresholds. When seats are allotted through plurality voting, district magnitude always equals one, regardless of seat number.

The potential overriding effect of legally imposed thresholds on the level of voter support necessary for electoral success can be observed when one considers that a five percent threshold will mathematically limit the number of electable parties to twenty, irrespective of seat number. Therefore, when a legal threshold is involved, we use the calculation:

$$M_{adj} = \frac{.5}{T}$$

where M_{adj} is a potential value of M_i , and T is the legal threshold. The smaller of the two values, M_{adj} and S_i , is then selected as M_i to calculate M_{eff} (Taagepera and Shugart, 1989).

Our calculation of the effective district magnitude, M_{eff} , departs from Taagepera and Shugart's (1989) strategy, which equates the independent variable with average district magnitude so that:

$$M_{eff} = \frac{S}{E}$$

where E is the number of electoral districts. Their method operates on an assumption that all districts have an equal effect on nationwide effective district magnitude. However, by this logic, the significant magnitude of a one district system like that of Israel will be almost halved by the addition of one single-mandate district, even if the new district is so small as to make it intuitively negligible in the evaluation of the system as a whole. In our estimation, the individual voter is a superior metric to the individual district; and our

method, assuming the absence of severe malapportionment, indirectly weights each district based on its population share (see Neto and Cox, 1997, for an alternative method based on this logic).

Six of our fourteen cases - Lithuania, Poland, Hungary, Croatia, Russia, and Ukraine – pose a special challenge as their electoral systems comprise more than one tier. In each case, voters cast two ballots; one segment of parliament is elected at the district level and another at the national level. All but one of these systems are mixed in the sense that the district-level vote operates under plurality while the national vote is proportional; in Poland, both tiers are proportional. Our calculation of M_{eff} treats multiple-tier systems as unique systems. In calculating a single value for district magnitude in these systems, we weight each district's magnitude by its fractional share of *total* seats and treat the national-list tier as a single district.

Hungary is the most unique of the mixed electoral systems. The country's electoral law provides yet a third tier of 58 seats allotted in a manner to assure greater proportionality in the national tier (subject to a 5% legal threshold). While an ideal method of operationalizing compensatory seats remains elusive, we have employed the system used by Taagepera and Shugart (1989), which, in the case of Hungary, indicates that the third tier be treated as an additional district of magnitude 10 ($M = .5/.05$).

We use an index provided in Yeoh Kok Kheng, "Toward an Index of Ethnic Fractionalization" (1999), as a measure of social heterogeneity. The index employs Rae's index to quantify ethnic, linguistic, and ethno-religious cleavages. To test the effect of concurrent elections to a bicameral election, we code concurrent elections "1." All other legislative elections are coded "0." Our evaluation of the effect of the

proximity of presidential elections relies on the absolute value of the difference in months between the parliamentary election and the nearest presidential election. Since the legislature elects the chief executive in parliamentary systems, the value used in these cases is “0.” To test the effect of federalism, we code federal systems “1.” All other systems are coded “0.”

Finally, to test the effect of presidentialism on the number of parties, we employ a modified coding system put forth by Shugart (1996). Countries are assigned a score of one to twelve, based on various factors impacting the president’s control over cabinet formation and dismissal, assembly survival, and presidential survival. The criteria are at Table 1, and the scores are at Table 2. One to four indicates low presidential strength, five to eight is moderate strength, and nine to twelve is high strength.

Results

The results of the regression of our independent variables on the index for the number of effective political parties based on vote share (N_p) are at Table 3. Standardized betas are reported. The electoral system, social heterogeneity, or the interactive effect of the two do not exert a statistically significant effect on party system fragmentation as measured by vote share. The only factor doing so is the strength of the chief executive. The stronger the president is, the greater the number of effective electoral parties. Hence, chief executives would appear to undermine the rationale in voters’ minds (as well as in the calculations of political elites seeking office) to vote for parties that are likely to be able to secure a legislative majority. As presidents are increasingly able to control policy outcomes, voters focus less on parties and more on individual deputies; and politicians

are less concerned with parties. The result is the number of parties receiving a substantial share of the vote increases. The effect increases as presidential elections are further removed from legislative elections. This strongly suggests that voters are more likely to cast their votes for the legislative party of the president when elections are concurrent or close. The president's control over policy enhances the visibility of his party in legislative elections. However, such a conclusion is undermined by the fact that the statistical significance of the proximity of legislative to executive elections is .102.

The results of the regression of our independent variables on the index for the number of effective political parties based on seat share (N_s) are at Table 4. In contrast to vote share, neither presidential strength nor the proximity of parliamentary and presidential elections exert a statistically significant effect on party system fragmentation as a function of seat share. Instead, the number of legislative parties is constrained by the design of the electoral system and social homogeneity. Of the two institutional factors, district magnitude has a stronger effect on party system fragmentation by seat share. This corroborates Taagepera and Shugart's (1989) argument that district magnitude is a better surrogate than a simple categorization of an electoral system as SMD.

The fact that our dummy variable for whether an electoral system is mixed is not statistically significant argues that district magnitude sufficiently captures the effect of an electoral system on assembly party system fragmentation regardless of the system's design or number of tiers. However, such systems must be treated as a single system (instead of addressing each tier as a separate election), as captured in our calculations for M_{eff} . Hence, it would appear that regardless of whether or not the tiers of mixed systems are formally linked, there is indeed an interactive effect between the tiers.

Social homogeneity also has the hypothesized effect. Further, it is slightly stronger than that for district magnitude. As societies become increasingly socially fragmented, the number of political parties increases. Stronger still, however, is the effect of the interaction between the electoral system and the number of socially distinct ethnic groups. Controlling for the number of deputies being elected in each district, the total number of parties receiving a share of the vote is less than it otherwise would be given the degree of social fragmentation.

Further Considerations and Implications

Duverger (1954), Sartori (1976), and institutionalists in general have long maintained that the mechanical effect of electoral design will be felt first at the level of seat share. Our results would appear to support this argument. The regressions on the number of effective parliamentary parties demonstrate that electoral system design and social heterogeneity indeed exert the hypothesized mechanical effect. However, we do not find support for the existence of a psychological effect of the electoral system on voters. Table 5 reports the results of a subsequent regression of our independent variables on the effective number of parties by vote share when first elections are removed from the data. The results indicate that not only does presidential strength remain the sole statistically significant predictor of vote share, it is a stronger predictor (both the standardized beta and r-square value for the overall equation increasing). Hence, it does not appear that as voters (and political elites) over time become aware of the effect of the electoral system on small parties that they adjust their behavior (voting

and coalition building) accordingly. Our analysis demonstrates that electoral system does not exert a statistically significant effect on how voters vote.

This suggests that something is intervening in the calculations of voters other than the effect of electoral system design or social heterogeneity. Our results argue that presidents matter in post-communist Europe. As presidents are able to control policy outcomes, political elites and voters are less concerned with whether parties can achieve a legislative plurality. Hence, politicians are more likely to form small parties or run as independents; and voters are willing to vote for them. In short, strong presidents significantly undermine the rationale for party cohesion. The result is a larger number of parties receiving votes.

This could conceivably create a tendency overcoming the mechanical effect on party fragmentation. The results at Table 6 of regressions of our independent variables on the number of effective parties by seat share with first elections removed from the data demonstrate that this is the case. Electoral system and social heterogeneity no longer provide a statistically significant explanation for the number of parliamentary parties. The lone remaining factor is presidential effect. In effect, the psychological effect of presidential strength essentially is overcoming that of electoral design. Voters are learning that it does not matter if a party captures a majority. It will not translate into meaningful policy control. As presidential strength increases, voters are less concerned about voting for parties capable of securing a legislative majority. Hence, they are more likely to vote for small regional parties and independents, which are then awarded seats. There is an attendant decrease in the probability that any one party will achieve a majority or significant plurality.

This also raises the possibility that legislators in systems with strong presidents will be concerned primarily with pork barrel politics and district concerns (versus broader national goals). If parties are collective action mechanisms for the furtherance of a policy agenda, then the less control that the legislature has over national policy, the less justification there is for parties in the traditional sense. During parliamentary elections, voters may focus less on the fortunes of a particular political party and more on the ability of an individual deputy to tend to local concerns and bring home some legislative bacon. Political office seekers will soon respond to those expectations if they intend to secure the perks of being a parliamentary deputy.

We conclude that strong presidents are not likely to face organized legislative resistance to their policy control in post-communist Europe. Hence, presidential elections matter. Citizens in systems with very strong chief executives are potentially electing a policy dictator for the constitutionally mandated term. However, these executives face the challenge of having to cobble together a legislative majority to support their initiatives in a highly fragmented legislature. The design of the electoral system is not likely to help resolve the problem, but timing presidential elections closely to parliamentary elections might give chief executives a legislative plurality for their own party.

Table 1 Criteria for Scoring Presidential Strength⁶

Cabinet Formation

- 0 – President can not name ministers on own initiative
- 1 – President nominates prime minister, who requires parliamentary confidence
- 2 – President appoints prime minister with consent of parliament
- 3 – Presidential appointment of prime minister does not require parliamentary approval

Cabinet Dismissal

- 0 – Government may only be removed by parliament
- 1 – Government may be removed by the president under certain stipulated conditions
- 2 – Government may be removed by the president with the approval of parliament
- 3 – Government may be removed by the president without parliamentary approval

Assembly Survival

- 0 – President can not call for pre-term elections
- 1 – President can call for pre-term elections during a specified time frame
- 2 – President can call for pre-term elections upon a vote of no confidence in the government
- 3 – President can call for pre-term elections at any time

Presidential Survival

- 0 – Assembly can call for pre-term presidential elections at any time
- 1 – If the assembly calls for pre-term presidential elections, the assembly must also stand for re-election
- 2 – Assembly can call for pre-term presidential elections in special cases
- 3 – Assembly can not call for pre-term presidential elections

Table 2 Scores for Presidential Strength

Country	Presidential Strength				Total Score
	Cabinet	Cabinet	Assembly	Presidential	
	Formation	Dismissal	Survival	Survival	
Bulgaria	1	0	1	3	5
Czech Republic	2	1	1	3	7
Estonia	1	0	1	3	5
Hungary	1	0	2	3	6
Latvia	1	0	1	0	2
Lithuania	2	1	2	2	7
Moldova	1	1	1	0	3
Poland	1	0	0	3	4
Romania	1	0	2	2	5
Russia	2	3	3	3	11
Slovakia	2	2	1	1	6
Slovenia	0	0	1	2	3
Ukraine	2	3	1	3	9

Table 3

Regression of Indicators of Institutional, Social, and Interactive Effects on the Effective Number of Political Parties Based on Vote Share (N_v)

SMD	-.022
District Magnitude (M _{eff})	.455
Ethnic Fractionalization	.597
Interactive Effect: M _{eff} and Ethnic Fractionalization	-.696
Mixed Electoral System	-.229
Presidential Strength	.865**
Proximity of Presidential Elections and Parliamentary Elections	.290

$r^2 = .579$

Standard Error = 2.76096

F Significance = .003

** p<.01

Table 4

Regression of Indicators of Institutional, Social, and Interactive Effects on the Effective Number of Political Parties Based on Seat Share (N_e)

SMD	-.694**
District Magnitude (M_{eff})	.913**
Ethnic Fractionalization	1.195**
Interactive Effect: M_{eff} and Ethnic Fractionalization	-1.369**
Mixed Electoral System	-.273
Presidential Strength	.560
Proximity of Presidential Elections and Parliamentary Elections	.136

$r^2 = .501$

Standard Error = 2.15024

F Significance = .006

** $p < .01$

Table 5

Regression of Indicators of Institutional, Social, and Interactive Effects on the Effective Number of Political Parties Based on Vote Share (N.), First Elections Removed from the Data

SMD	.371
District Magnitude (M_{eff})	-.455
Ethnic Fractionalization	-.959
Interactive Effect: M_{eff} and Ethnic Fractionalization	1.088
Mixed Electoral System	.099
Presidential Strength	.987**
Proximity of Presidential Elections and Parliamentary Elections	.233

$r^2 = .843$

Standard Error = 1.82843

F Significance = .000

** $p < .01$

Table 6

Regression of Indicators of Institutional, Social, and Interactive Effects on the Effective Number of Political Parties Based on Seat Share (N_e), First Elections Removed from the Data

SMD	-.038
District Magnitude (M_{eff})	.258
Ethnic Fractionalization	.696
Interactive Effect: M_{eff} and Ethnic Fractionalization	-.499
Mixed Electoral System	-.556
Presidential Strength	1.083**
Proximity of Presidential Elections and Parliamentary Elections	.263

$r^2 = .759$

Standard Error = 1.15786

F Significance = .001

** $p < .01$

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ENDNOTES

¹ The formulae (Taagepera & Shugart, 1989) for these indexes are

$$N_v = \frac{1}{\sum_{i=1}^n p_i^2} \quad \text{and} \quad N_s = \frac{1}{\sum_{i=1}^n p_i^2}$$

where n is the actual number of parties receiving votes (N_v) or seats allotted in the legislature (N_s) and p is the number of votes received (N_v) or seats allotted the party (N_s) for each party “i.”

² The data base was compiled by the Department of Government at the University of Essex between May 1999 and May 2002 as part of an Economic and Social Research Council project, *One Europe or Several?*

³ <http://www2.essex.ac.uk/elect/database/aboutProject.asp>

⁴ <http://www.essex.ac.uk/elections/>

⁵ Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, and Ukraine are included in the analysis. We did not include Albania, Belarus', Croatia, Macedonia, Montenegro, and Serbia in the analysis given the uncertainty of democratic institutions stemming from chronic political instability.

⁶ The source is Shugart, Matthew Soberg. “Executive-Legislative Relations in Post-Communist Europe.” *Transitions*, 13 December 1996, p. 7, with modifications.