Abstract

What determines the number of parties in a particular country? Using a new dataset that covers all legislative and presidential elections during democratic periods in 199 countries between 1946 and 2000, I analyze those factors influencing the number of parties in a given country. To a large extent, this work builds on a growing empirical and theoretical literature that has developed over the last several years. I show that much of this existing research employs flawed statistical specifications that leave the results open to question. I take account of these problems and extend these studies in several new directions. I argue that social forces are the primary factor influencing the number of parties in a country and find that the accuracy with which party systems reflect existing social cleavages increases as electoral institutions become more permissive.

*All data and computer code necessary to replicate the results in this analysis will be made publicly available at the author’s webpage at http://homepages.nyu.edu/~mrg217 on publication. STATA 7 was the statistical package used in this study.
1 Introduction

What determines the number of parties in a given country remains an important fundamental question in political science. This is because the number of parties in a polity has a significant impact on numerous issues ranging from government formation and executive durability (Powell 1982), to party system extremism (Cox 1990), macroeconomic outcomes (Roubini & Sachs 1989) and political violence (Powell 1982). Understanding the factors that influence the number of parties is also an area of research in which there has been a steady and substantial accumulation of empirical and theoretical knowledge (Riker 1982). Much of the recent empirical research has focused on the relative impact of institutions and social cleavages on the number of parties in a given polity (Powell 1982, Ordeshook & Shvetsova 1994, Amorim Neto & Cox 1997, Jones 1997, Filippov, Ordeshook & Shvetsova 1999, Taagepera 1999, Mozaffar 2001, Coppedge 2002, Jones 2002). It appears that a consensus has now developed that institutions and social cleavages both matter.

One problem with this consensus is that it is built on research that incorrectly or inadequately analyzes the potential interaction between electoral institutions and social cleavages. As a result, several of the conclusions in the literature remain open to question. Part of the problem lies in the fact that there appears to be some theoretical confusion as to exactly how electoral institutions or social heterogeneity influence the number of parties. The conclusion that electoral institutions and social heterogeneity interact to determine the number of parties in a given country is clearly informative. However, it raises additional questions. For example, one might reasonably want to know the extent to which various electoral institutions modify the impact of social heterogeneity. This type of information is not discussed in a detailed manner in the existing literature.

In this paper, I readdress exactly how social cleavages and electoral institutions influence the number of parties or candidates using an improved statistical specification and a fresh dataset. The dataset is substantially larger than those used in previous studies since it includes all democratic legislative and presidential elections in 199 countries between 1946 (or independence) and 2000. A significant advantage of this dataset is that it includes information on a wide range of Asian, African and East European countries that have been absent in previous studies. The inclusion of elec-
tions in the 1990s also marks a difference with earlier research and allows one to examine whether the impact of electoral institutions and social heterogeneity on party systems has changed since the third wave of democratization (Huntington 1991). This is substantively important since the number of countries holding democratic elections has increased enormously in this period from 68 in 1989 to 109 in 1999 (Golder 2002). It is also theoretically significant since one might expect that the impact of electoral institutions and social heterogeneity on party systems is weaker in this decade due to the large number of new democracies.

I extend current research on party systems in several other directions beyond simply enlarging the geographical and temporal domain of previous empirical analyses. First, I provide a clearer picture than exists in the literature of the theoretical argument linking social heterogeneity and electoral institutions to the number of parties. Second, I investigate the factors that influence the number of candidates in presidential elections. While this is not an entirely original endeavor (Jones 1999, Jones 2002), the factors that determine the number of presidential candidates remain relatively understudied. Third, I employ statistical models to analyze elections across countries and across time. This offers the opportunity for new insights since previous research has tended to ignore variation in party systems across time in favor of focusing on cross-national differences. Finally, I use a replication of the results found in Amorim Neto and Cox (1997) to illustrate some of the methodological problems that appear in the literature and as a point of comparison to explicitly illustrate the additional information provided in this article.

In the next section, I briefly describe how electoral institutions might mediate the impact of social cleavages on the number of parties in a given country and provide a simple statistical model of how best to examine this interaction. I also provide evidence that several of the inferences made in the literature regarding social heterogeneity and institutions may be open to question. In the remaining sections, I turn to a reexamination of the relative impact of electoral institutions and social cleavages on the number of parties or presidential candidates. I begin by investigating those factors determining the number of presidential candidates, before going on to examine the determinants of the number of parties amongst the electorate and in the legislature. I test hypotheses linking features such as district magnitude, upper tier seats, election runoffs, and social heterogeneity to the number of parties using models that draw on information from 850 legislative elec-
tions and 284 presidential elections between 1946 and 2000. I conclude with suggestions for areas of future research.

2 Electoral Institutions and Social Heterogeneity

The literature examining which factors influence the number of political parties in a particular country is one of the richest in comparative politics (Duverger 1954, Grumm 1958, Eckstein 1963, Lipset & Rokkan 1967, Rose & Urwin 1970, Rae 1971, Sartori 1976, Riker 1982, Taagepera & Shugart 1989, Lijphart 1994, Cox 1997, Chhibber & Kollman 1998, Cox 1999, Powell 2000). Both institutional and sociological branches of this literature have a pedigreed past. While institutionalists focus on identifying links between various aspects of the electoral system and the number of parties, the sociological literature typically addresses the sources of demand for parties. Recently, scholars have attempted to integrate these two traditions using multiplicative interaction models (Ordeshook & Shvetsova 1994, Amorim Neto & Cox 1997, Cox 1997, Filippov, Ordeshook & Shvetsova 1999, Mozaffar 2001, Jones 2002). Although this research has led to significant advances in our understanding of party systems, I argue that these scholars fail to correctly interpret or fully utilize the conditional nature of these statistical models. As a result, they do not gain maximum conceptual clarity or empirical precision; in some cases, they make inferential errors.

2.1 The Modifying Nature of Electoral Institutions

Several scholars have recently argued that the number of parties in a particular country is determined by the interaction between the electoral system and the degree of social heterogeneity. However, the exact causal process underlying this interaction is often left somewhat vague. Amorim Neto and Cox (1997: 152) suggest that strategic behavior on the part of parties, candidates and voters typically reduces the number of social cleavages to a smaller number of party-defining cleavages in a three-stage process. In their framework, social cleavages are initially translated into partisan differences. These partisan differences are then translated into votes in the second stage, before being translated into seats in the final stage. According to this view, social cleavages represent ‘natural constituencies’ that generate particular
policy demands. While political parties are seen as organizations that form to represent these demands (Lipset & Rokkan 1967), electoral institutions are treated as intervening factors determining the extent to which existing socio-economic cleavages are translated into political parties. In other words, electoral laws act as a filter or valve linking social heterogeneity to the number of parties in a particular country.

Electoral institutions determine how accurately party systems reflect existing social cleavages through the strategic incentives that they create for both elites and voters. For example, it is well-known that small district magnitudes grant considerable electoral advantages to large parties. This is illustrated quite clearly in Britain where the Labour and Conservative parties are typically awarded a much larger share of seats than the share of votes they receive. The existence of this ‘mechanical effect’ creates incentives for strategic voting on the part of voters and for strategic entry or withdrawal on the part of political entrepreneurs (Duverger 1954, Cox 1997, Indridason 2000). Members of socio-economic groups represented by small parties are more likely to vote strategically if they find themselves in single-member district electoral systems than if they vote in multi-member districts (Duverger 1954, Riker 1982). In contrast, the benefits of strategic voting are unlikely to loom as large in highly proportional systems such as those in Israel or the Netherlands. Similarly, political entrepreneurs will be more willing to form new parties to take advantage of unrepresented constituencies in permissive electoral systems; in less permissive systems, these entrepreneurs are more likely to prefer seeking elected position by running within an existing party (Gerber & Morton 2001).

These strategic considerations suggest that electoral institutions should modify the relationship between socio-economic cleavages and the number of parties in a given country. This framework indicates that there are two reasons why a particular country might have a small number of parties. It could be the case that the demand for parties is low because there are few social cleavages. However, it may also be the case that the demand for parties is high but the electoral system is not permissive. Only a polity characterized by both a high degree of social heterogeneity and a highly permissive electoral system is expected to produce a large number of parties. This line of reasoning generates the following hypothesis:

Hypothesis 1: Social heterogeneity only increases the number of parties when electoral institutions are sufficiently permissive.
2.2 Testing Conditional Hypotheses

This hypothesis is obviously conditional since the effect of social heterogeneity on the number of parties is expected to depend on the electoral system. Conditional hypotheses such as this are best tested using interaction models (Friedrich 1982, Gill 2001). For example, Hypothesis 1 can be tested using the simple model shown below:

\[ \text{PARTIES}_i = \beta_0 + \beta_1 \text{SOCIAL}_i + \beta_2 \text{INSTITUTION}_i + \beta_3 \text{SOCIAL} \times \text{INSTITUTION}_i + \epsilon_i \]  

where PARTIES is a measure of the number of parties, SOCIAL is a measure of social heterogeneity, and INSTITUTION is some measure of electoral system permissiveness.

The estimated causal effect of social heterogeneity on the number of parties is given by \( \beta_1 + \beta_3 \text{INSTITUTION} \). The claim that greater social heterogeneity should increase the number of parties when electoral institutions are permissive simply indicates that this effect should be positive and statistically significant when INSTITUTION is sufficiently high or permissive. Although theory does not provide us with a clear expectation as to when this will be the case, it seems clear that Hypothesis 1 will have found little support if \( \beta_1 + \beta_3 \text{INSTITUTION} \) is never positive and significantly different from zero. Since the causal effect of social heterogeneity is expected to be increasing as electoral institutions become more permissive, \( \beta_3 \) should also be positive. It seems reasonable to think that increased social heterogeneity is likely to have no effect on the number of parties in a given country when electoral institutions are not permissive at all (INSTITUTION=0). As a result, one would expect \( \beta_1 \) to be zero. Similarly, one would expect the permissiveness of electoral institutions to have no influence on the number of parties when there are no social cleavages. Thus, \( \beta_2 \) should be zero as well. This simple multiplicative interaction model and set of predictions underlies all of the statistical models that appear in subsequent sections.

2.3 Previous Statistical Analyses

Several scholars have recently attempted to examine how electoral institutions and social heterogeneity interact to determine the number of parties using interaction models similar to that shown above (Ordeshook &
The first thing to note about these models is that the linear components of the interaction term (SOCIAL and INSTITUTION) must be included separately to avoid ‘nonsensical’ models (Friedrich 1982). This is true even if the linear components are not statistically significant and even if the researcher has an *a priori* hypothesis that the linear components are not relevant (Gill 2001). The problem with dropping one or more of the linear terms from Equation 1 is that it makes the unlikely assumption that social heterogeneity and the permissiveness of electoral institutions have no effect on the number of parties in the absence of the other. If this assumption is incorrect, then the estimated coefficient on the interaction term will be biased and the causal effect of social heterogeneity will be incorrectly measured (Cleary & Kessler 1982). Even if this assumption were valid, a second problem exists in that it is not possible to interpret the variance of the interaction term except in the context of the variance of its linear components (Jaccard & Wan 1995). Amorim Neto and Cox (1997), Cox (1997), Ordeshook and Shvetsova (1994), Filippov, Ordeshook and Shvetsova (1999), Mozaffar (2001) and Jones (2002) all make inferences based on models in which at least one of the linear components is omitted. This suggests that some of the results in the existing literature may be biased and difficult to interpret in a meaningful way.

The fact that the coefficients in interaction models are conditional is rarely taken into account when inferences are drawn. For example, Amorim Neto and Cox (1997), Cox (1997), Ordeshook and Shvetsova (1994), Mozaffar (2001) and Jones (2002) only ever report and use a single coefficient when they make inferences. The coefficient that is reported describes the estimated causal effect of SOCIAL or INSTITUTION when the relevant modifying variable is zero. The information that can be gathered from this single coefficient is often severely limited and can be quite misleading when it comes to interpretation. It is also crucial to realize that the standard errors in interaction models are conditional as well. In other words, the size of the standard error varies with the particular value of the modifying variable. This is rarely taken into account either. Inferences about the causal effect of social heterogeneity and electoral system permissiveness are typically based solely on whether these variables have a significant impact.
on the number of parties when the relevant modifying variable is zero; one never knows if they have a significant effect at other values.

Although these earlier studies make important advances in our understanding of what determines the number of parties or presidential candidates in a given polity, there is clear reason to think that some of the inferences may be open to question. As a result, it is worthwhile reexamining the effect of electoral institutions and social heterogeneity on party systems. This is the focus for the remaining sections. I also build on the existing empirical literature to examine more precisely the extent to which various electoral institutions modify the impact of social heterogeneity on party systems. I begin by investigating how social heterogeneity and electoral institutions influence the number of presidential candidates.

3 Presidential Candidates

With a few notable exceptions (Shugart & Carey 1992, Cox 1997, Jones 1999, Jones 2002), there have been few systematic studies investigating the factors that determine the number of candidates in presidential elections. The vast majority of research on party systems has typically focused on the number of parties in legislative elections. This is somewhat surprising given the growing evidence that presidential elections can have an important impact on legislative elections (Jones 1994, Coppedge 2002, Filippov, Ordeshook & Shvetsova 1999, Cox 1997, Amorim Neto & Cox 1997, Mainwaring & Shugart 1997). In this section, I attempt to redress some of this imbalance in our empirical knowledge of presidential and legislative elections.

3.1 Theory

I focus my attention on how the demand for presidential candidates (social heterogeneity) and the electoral formula (plurality or runoff) interact to determine the number of presidential candidates. Presidential elections that employ a runoff procedure are typically viewed as more permissive than those that use a plurality formula (Duverger 1954, Greenberg & Shepsle 1987, Wright & Riker 1989, Fey 1997). In other words, plurality systems are expected to constrain the number of presidential candidates
more than runoff systems. There are at least two reasons for this. First, only one candidate can win plurality elections, whereas two candidates can ‘win’ the first round of runoff elections. Thus, the incentives for strategic voting and strategic entry/withdrawal are likely to be weaker in runoff systems (Cox 1997). Second, runoff systems create incentives for candidates who have no chance of ultimately winning to enter presidential contests. This is because a good showing can leave them in a strong bargaining position to obtain concessions from candidates who need their endorsement in the second round. This line of reasoning generates the following simple hypothesis:

Hypothesis 2: Social heterogeneity has little effect on the number of presidential candidates in plurality systems. However, it increases the number of candidates in runoff elections.

3.2 The Model

This hypothesis can be tested using the following model:

\[
PRESIDENT_i = \beta_0 + \beta_1 SOCIAL_i + \beta_2 RUNOFF_i + \beta_3 SOCIAL \times RUNOFF_i + \epsilon_i
\]

where PRESIDENT measures the effective number of presidential candidates and SOCIAL uses the effective number of ethnic groups in a country as a proxy for social heterogeneity. RUNOFF is a dummy variable equal to one if the presidential election involves a runoff of some kind and zero otherwise. SOCIAL*RUNOFF is included to test the conditional nature of Hypothesis 2.

The dataset used to test this model and those that appear in subsequent sections is new and covers all democratic legislative and presidential elections in 199 countries between 1946 (or independence) and 2000. A regime is classified as a dictatorship if the chief executive is not elected, the legislature is not elected, there is no more than one party, or there has been no alternation in power (Przeworski et al. 1996). In other words, a regime is democratic if those who govern are selected through contested elections. According to this classification scheme, there have been 284 democratic presidential elections and 850 democratic legislative elections in this period worldwide.
Several presidential elections have been omitted from the statistical analysis that follows because they are unsuitable for testing Hypothesis 2. For example, I have excluded elections in which the president is always indirectly elected by an electoral college. This affects presidential elections in Finland between 1946 and 1982, all elections in the United States, and the 1946, 1958, 1963, 1983 and 1989 Argentinian elections. Presidential elections in Sri Lanka and Ireland have been dropped because they employ the single transferable vote rather than a plurality or runoff formula. Finally, presidential elections in Kiribati have been omitted because the number of candidates permitted to run is automatically limited to a maximum of four (Nohlen, Grotz & Hartmann 2001a). While these elections have been dropped for theoretical reasons, the presidential elections in Cape Verde, Comoros, the Dominican Republic, Greek Cyprus, Iceland, Palau and Sao Tome and Principe have all had to be dropped because data on the effective number of ethnic groups is not available. I have also been unable to obtain the presidential election results for Honduras 1957 and Kyrgyzstan 1991. This leaves a total of 205 presidential elections in 53 countries. 81 elections employed plurality rule, while 124 involved a runoff procedure. Descriptive statistics on the effective number of presidential candidates and ethnic groups are shown in Table 1, while predicted values are listed in Table 2:

Insert Table 1

Insert Table 2

I tested Hypothesis 2 using both cross-sectional and time-series cross-sectional (TSCS) designs. The two cross-sectional specifications used a single election from each country in the 1980s and the 1990s. Thus, tests were conducted on 15 presidential elections in the 1980s and 48 in the 1990s. The TSCS design that involved pooling all 205 presidential elections raised several methodological problems. In order to take account of potential panel heteroscedasticity and contemporaneously correlated errors, I employed the Beck and Katz (1995) procedure for panel-corrected standard errors. The fact that the Durbin-Watson statistic from a pooled regression provided no evidence of any first-order autocorrelation suggests that a lagged dependent variable is unnecessary on econometric grounds. However, I believe that there may be theoretical reasons for including one anyway. For example, it is highly plausible that the number of candidates in the previous presidential
election is likely to influence the strategic behavior of voters and party elites in subsequent elections by signalling the number of viable candidates. As a result, I include a lagged dependent variable in some models.

### 3.3 Results and Interpretation

The results from seven slightly different models are shown in Table 3 below. To place my results in comparison with those in the literature, I report the results from Amorim Neto and Cox (1997) in the first column.\(^{13}\) Their results are based on a cross-sectional analysis of presidential elections in 16 different countries during the 1980s. The established democracies model excludes all presidential elections from those countries that transitioned to democracy in the 1990s, while the presidential systems model includes only those elections that occurred in presidential regimes.\(^{14}\)

Insert Table 3

It is important to remember that the figures in Table 3 only indicate the effect of social heterogeneity on the number of presidential candidates when there are no runoffs. As predicted, none of the models provide any evidence that social heterogeneity has any impact on the number of candidates when electoral institutions are not permissive (plurality rule). Although the interaction term always has the predicted positive sign, it is not significant in three of the models. The insignificance of the interaction term in these models should not immediately lead one to conclude that it was wrong to include it, though. It may still be the case that social heterogeneity has a notable causal effect on the number of presidential candidates when runoff procedures are employed. Table 4 provides evidence as to whether this is true or not.

Insert Table 4

As predicted, the estimated causal effect of social heterogeneity on the number of presidential candidates is nearly always positive when elections employ runoff provisions. The fact that the Amorim Neto and Cox figures are anomalous may explain why they spend little more than a paragraph in their
article discussing their model of presidential candidates. The estimated causal effect of social heterogeneity when there are runoffs is also significant for elections held in the 1980s, elections held in established democracies and elections held in presidential systems. It is also significant in the full pooled dataset when there is no lagged dependent variable. This suggests that there is considerable evidence in favor of Hypothesis 2.

It is only when the presidential elections of the 1990s are considered separately or the full data set is used with a lagged dependent variable that there is little evidence to support Hypothesis 2. One explanation for this might lie with the huge increase in the number of new countries that emerged in the 1990s during the third wave of democratization (Huntington 1991). To a large extent, the hypothesis linking electoral system permissiveness and social heterogeneity to the number of presidential candidates assumes that party systems are in some sort of ‘equilibrium’. The fact that many of the countries holding elections in the 1990s had recently experienced a transition to democracy suggests that many may not have reached their ‘equilibrium’ yet (Kaminski 2001, Kaminski 2002). This would explain why the estimated causal effect of social heterogeneity has the correct sign for this period but does not achieve traditional levels of significance. This tentative explanation receives some support from the fact that social heterogeneity does significantly increase the number of presidential candidates whenever runoff procedures are used in the established democracies model. This is because this model excludes precisely those presidential elections that occurred in countries that transitioned to democracy in the 1990s. If it turns out that social heterogeneity and electoral institutions fail to have a significant impact on legislative elections in the 1990s as well, then this explanation would receive further support.

I have noted that there has been little accumulated knowledge of the factors that determine the number of presidential candidates in a particular country. This brief analysis represents an attempt to remedy this situation to some extent. I have focused solely on how electoral system permissiveness and social heterogeneity interact to influence the number of presidential candidates around the world. Clearly, more research is required to understand how other institutional features influence presidential elections. The results from this investigation are fairly intuitive, though. I find that social heterogeneity only increases the number of candidates when electoral institutions are permissive; it has no effect in plurality systems. It is worthwhile briefly considering how these results stand in relation to those already in the lit-
erature. This analysis suggests that Jones (2002) is incorrect to conclude that there is no interaction effect between presidential runoffs and social heterogeneity. It also indicates that Jones’ conclusion that ‘societal heterogeneity has no noteworthy effect on the number of relevant candidates in presidential elections’ is only half correct. While this seems to be the case in plurality systems, it is not true for those countries that employ runoff procedures. Finally, Jones’ (1999, 2002) claim that runoffs increase the number of presidential candidates is consistent with the results presented here once one states that the effect is dependent on the level of social heterogeneity.

4 Electoral Parties

While the number of candidates in presidential elections has been relatively understudied, the same cannot be said for the number of parties in legislative elections. A vast literature has developed to explain both the number of parties that win votes (electoral parties) and the number of parties that wins seats (legislative parties). In this section I address how the demand for political parties (social heterogeneity) and the permissiveness of electoral institutions interact to determine the number of parties that the electorate actually votes for. In other words, I focus on the ‘psychological effects’ of electoral institutions. I also address how the number of presidential candidates influences the number of electoral parties.

4.1 Theory

There is good reason to suspect that electoral institutions might modify how well social heterogeneity is translated into actual parties. Higher levels of social heterogeneity should only have a minimal impact on the number of electoral parties in those countries employing single member districts. This is because disproportional systems such as this create incentives for parties that have no chance of winning to withdraw. If these parties fail to withdraw, then voters will have an incentive to vote strategically in favor of better placed parties (Duverger 1954, Cox 1997, Cox 1999). Thus, disproportional systems with low district magnitudes are likely to reduce the demand for political parties created by social heterogeneity. On the other hand, one would predict that social heterogeneity would have a greater impact in those
countries that have upper tier seats (Amorim Neto & Cox 1997). This is because the compensatory nature of these seats should encourage political parties to remain in electoral contests given that they have a better chance of actually winning a seat when upper tiers are used. Voters should also feel more willing to support minor parties in these countries since their votes are less likely to be wasted (Golder 2003). This argument generates the following hypotheses:

Hypothesis 3: Social heterogeneity only increases the number of electoral parties when the district magnitude is sufficiently large.

Hypothesis 4: Social heterogeneity increases the number of electoral parties when more seats are allocated in upper tiers.

Recent research suggests that presidential elections also have an important impact on legislative elections (Shugart & Carey 1992, Lijphart 1994). Thus far, the results have been somewhat contradictory. Some research has found that presidential elections increase party system fragmentation (Filippov, Ordeshook & Shvetsova 1999), while other analyses suggest the opposite (Amorim Neto & Cox 1997, Coppedge 2002). Much of the existing research focuses on particular regions of the world such as Eastern Europe or Latin America where there can be limited variation in the institutional rules electing presidents. For example, all of the elections analyzed by Filippov, Ordeshook and Shvetsova came from East European countries that employed a runoff procedure for electing the president. As a result, it is hard to know whether their conclusion that presidential systems increase the number of electoral parties is a feature of presidential regimes in general or only those that employ runoff procedures. Given the contradictory conclusions in the literature, it is worthwhile reexamining the influence of presidential elections using data from around the world.

Presidential elections are typically viewed as being more important than legislative elections. As a result, it is possible that they have a coat-tails effect on legislative elections. The actual impact of this coat-tails effect will depend on the number of presidential candidates and the temporal proximity of presidential elections to legislative ones (Cox 1997). Temporal proximity essentially captures the ability of presidential elections to influence legislative elections. For example, presidential elections are most likely to have their strongest effect when presidential and legislative elections are held concurrently. The further apart in time these elections are held, the harder it is to
imagine that presidential elections will significantly influence the behavior of voters and party elites in legislative elections. The actual direction of the coat-tails effect will depend on the number of presidential candidates. Typically there is only a small number of candidates who compete for the presidency since there is only one or two candidates that can realistically win. Given that political parties often organize around the presidency, presidential elections should have a strong reductive effect on the number of electoral parties (Samuels 2002). However, this reductive effect is likely to be weaker whenever there is a large number of presidential candidates. This line of reasoning generates the following hypothesis:

Hypothesis 5: Presidential elections will have a large reductive effect on the number of electoral parties when presidential and legislative elections are proximate. This reductive effect will be weaker as the number of presidential candidates increases.

4.2 Model

Hypotheses 3-5 can be tested using the following model:

\[ ELECPARTIES_i = \beta_0 + \beta_1 \text{SOCIAL}_i + \beta_2 \ln(MAGNITUDE)_i + \beta_3 \text{UPPERTIER}_i \\
+ \beta_4 \text{PRESIDENT}_i + \beta_5 \text{PROXIMITY}_i \\
+ \beta_6 \text{SOCIAL} \ast \ln(MAGNITUDE)_i \\
+ \beta_7 \text{SOCIAL} \ast \text{UPPERTIER}_i \\
+ \beta_8 \text{PRESIDENT} \ast \text{PROXIMITY}_i + \epsilon_i \]  

(3)

where ELECPARTIES, SOCIAL and PRESIDENT measure the effective number of electoral parties, ethnic groups and presidential candidates respectively. MAGNITUDE measures the average district magnitude and is logged to capture the intuition that the marginal causal effect of a unit change in district magnitude is smaller as magnitude increases. UPPERTIER is the percentage of seats allocated in upper tiers. The percentage of upper tier seats ranges from 0 in countries like the United Kingdom to 77.95% in the 1995 Croatian elections. Finally, PROXIMITY measures the temporal proximity of presidential and legislative elections. I use the continuous measure of proximity proposed by Amorim Neto and Cox (1997). This equals one whenever presidential and legislative elections are held concurrently and zero whenever there are midterm legislative elections or no direct presidential elections. The various interaction terms are required to test the conditional nature of Hypotheses 3-5.
The dataset used to test this model draws on information from 850 democratic legislative elections in 125 independent countries since 1946. It is not possible to test Hypothesis 5 in fused vote systems (Cox 1997, Jones 2000). As a result, legislative elections in these systems have been dropped. This includes all of the elections in Bolivia and Uruguay, as well as Honduran elections up to 1993 and Guatemalan elections up to 1990. It also meant dropping elections in the Dominican Republic for 1966, 1970, 1974 and 1986 (Mitchell 1998). Elections in Kiribati, Kyrgyzstan, Lebanon, the Marshall Islands, Micronesia, Nauru, and Palau were also omitted because it was not possible to identify actual formal political parties in these countries. I also dropped the Colombian elections between 1958 and 1970 since there was a constitutional agreement during this period that the Conservative and Liberal Party would alternate in power and share the legislative seats irrespective of the electoral results (Nohlen 1993a). Elections in Papua New Guinea and Mauritius, as well as Malta since 1987 and South Korea between 1988 and 1995 were also omitted since the upper tier seats in these countries cannot be considered as compensatory. While these elections have been omitted for theoretical reasons, several other elections were dropped due to missing data on one or more of the explanatory variables.

One measurement problem arose with the calculation of the effective number of electoral parties. This is because official electoral statistics often do not provide information on the number of votes and seats won by all competing parties. Typically, very small parties are lumped together into a residual category known as ‘other’. Although unusual, the combined vote and seat totals for this ‘other’ category can be quite large. For example, the ‘other’ category accounted for 66.5% of the constituency seats and 49.7% of the constituency votes in the 1994 legislative elections in the Ukraine. How one deals with this category can significantly influence the effective number of parties that is calculated. This is problematic since measurement error on independent variables leads to biased estimates and poses particular difficulties for the estimation of interaction models (Berry 1993, Jaccard & Wan 1995). Many of the empirical investigations that use the effective number of parties as a variable do not explicitly state how this residual category is treated. Dropping the ‘other’ category or assuming that it represents a single party can lead to vast underestimates. I decided to omit 22 elections where the residual category was unusually large (greater than 15% of the votes). For the remaining elections, I follow the advice of Taagepera (1997) and use the method of bounds to calculate a more accurate effective number of parties. This leaves a total of 545 legislative elections.
Descriptive statistics are shown in Table 5 below. The figures for PRESIDENT and PROXIMITY are based only on those countries that actually held direct presidential elections.

Insert Table 5

Predicted values are listed in Table 6 below. Since district magnitude and upper tier seats should have no impact on electoral parties when there are no social cleavages, \( \beta_2 \) and \( \beta_3 \) should both be zero. \( \beta_1 \) is also expected to be zero since social heterogeneity should not influence the number of electoral parties in non-permissive electoral systems i.e. in single-member districts with no upper tier seats. However, the estimated causal effect of social heterogeneity \( (\beta_1 + \beta_6 \ln(MAGNITUDE) + \beta_7 UPPERTIER) \) should become positive and distinguishable from zero for a significant range of the modifying variables. Since district magnitude and upper tier seats are both expected to increase the permissiveness of the electoral system, then \( \beta_6 \) and \( \beta_7 \) should both be positive. Given that electoral parties organize around the presidency in presidential systems, \( \beta_4 \) should be positive. In other words, larger numbers of presidential candidates should increase the number of electoral parties. \( \beta_5 \) should be negative since PROXIMITY captures the reductive effect of presidential elections. Since the reductive effect of presidential elections should become weaker as the number of presidential candidates increases and the impact of presidential candidates should become stronger the more proximate the elections are, \( \beta_8 \) should be positive.

Insert Table 6

I tested Hypotheses 3-5 using both a cross-sectional and a time-series cross-sectional (TSCS) design. As before, the two cross-sectional specifications used a single election from each country in the 1980s and 1990s. Tests were conducted on 37 elections in the 1980s and 62 in the 1990s. The TSCS format involved pooling 545 legislative elections. Once again, I used the Beck and Katz (1995) procedure for panel-corrected standard errors. The Durbin-Watson statistic from a pooled regression indicated that there was no evidence of any first-order autocorrelation. As a result, there is no econometric need for a lagged dependent variable. However, there may be a theoretical reason to include one if the number of electoral parties in previous elections signals the number of viable parties in the present election.
to voters and party elites. As a result, I include a lagged dependent variable in some specifications.

4.3 Results and Interpretation

The results from eight slightly different models are shown in Table 7. Once again, I provide the figures based on the Amorim Neto and Cox (1997) dataset as a point of comparison. The various established democracy models (one for the 1990s, one for the pooled data, and one for the pooled data with a lagged dependent variable) exclude all legislative elections from those countries that transitioned to democracy in the 1990s.

Insert Table 7

The evidence in favor of Hypotheses 3-5 is somewhat mixed. All of the hypotheses receive considerable support from the Amorim Neto and Cox data. However, there is reason to doubt their result concerning upper tier seats. An outlier analysis using a Cook’s distance test and an examination of the leverage of each observation clearly indicates that these results depend entirely on the Belgium data (Cook 1977). If this is removed, there is no evidence that upper tier seats ever modify the impact of social heterogeneity on the number of electoral parties. This is true whether one uses the specification used by Amorim Neto and Cox in their article or the specification shown in Table 7. In fact, the evidence to claim that upper tier seats ever have a modifying effect on social heterogeneity is particularly weak in all of the models. Only in the pooled model of established democracies without a lagged dependent variable is the interaction term (SOCIAL*UPPERTIER) both positive and significant.

As with the previous analysis of presidential candidates, those regressions that include elections from the new democracies of the 1990s provide considerably less support for Hypotheses 3-5 than those regressions where these observations have been excluded. In two of the models where these elections have been retained, higher levels of social heterogeneity appear to significantly increase the number of electoral parties even when the electoral system is not permissive i.e. in single-member districts. This is not what is predicted. These results may again reflect the fact that there has been insufficient time for the effect of electoral institutions to be fully felt.
in these new democracies. The evidence from those models that only focus on established democracies is much better, though. There is considerable support for the claim that the number of presidential candidates modifies the reductive effect of presidential elections on electoral parties and that district magnitude modifies the impact of social heterogeneity. In order to fully appreciate these mediating effects, it is necessary to examine the impact of presidential elections and social heterogeneity at various values of their respective modifying variables.

Insert Figure 1 here

The effect of presidential elections on the number of electoral parties can be seen graphically in Figure 1. Although this figure is based on the pooled established democracies model without the lagged dependent variable, the other models produce very similar figures. The solid sloping lines indicate how the estimated causal effect of presidential elections changes as the number of presidential candidates increases. One can see whether the impact of presidential elections is significant by considering the two-tailed 95% confidence intervals (dashed lines) that are drawn around it. The effect of presidential elections is significant whenever the upper and lower bounds are both above or below the zero line. The first thing to note is that presidential elections have a strong reductive effect on the number of electoral parties when there are few presidential candidates. As Hypothesis 5 predicts, this reductive effect declines as the number of candidates increases. Once there are more than 3.5 presidential candidates, presidential elections no longer have a significant impact on the number of electoral parties. About 80% of democratic presidential elections have involved fewer presidential candidates than this. As a result, the number of electoral parties in countries holding presidential elections is likely to be lower than that in countries where these elections do not take place. It is interesting to note that Figure 1 offers a potential explanation as to why some previous studies might have found that presidential elections have little effect on electoral parties (Coppedge 2002) or actually increase the number of these parties (Filippov, Ordeshook & Shvetsova 1999). Depending on the number of presidential candidates in their sample of countries, both of these results are possible.

Insert Figure 2 here
The effect of social heterogeneity on the number of electoral parties is illustrated graphically in Figure 2. This figure is also based on the pooled established democracies model without the lagged dependent variable. Each sloping line indicates how the estimated causal effect of social heterogeneity changes as the average district magnitude increases. Sloping lines are illustrated for the case when there are no upper tier seats, the average percentage of upper tier seats allocated in multiple-tier systems (25%) and one standard deviation above the average (40%). One can think of these slopes as representing the United Kingdom, Italy and Japan respectively. The vertical distance between the three lines indicates how changes in the percentage of upper tier seats mediate the impact of social heterogeneity. If the estimated causal effect of social heterogeneity is significant at the 95% level in a two-tailed test, then this is indicated by an asterix. The figure clearly indicates that social heterogeneity increases the number of electoral parties once we move beyond single member districts or add upper tier seats.

Several important results are generated from this brief investigation of the ‘psychological effect’ of electoral institutions and the impact of presidential elections. Most importantly, there is strong evidence that social heterogeneity does have a significant impact on the number of electoral parties once the electoral system becomes sufficiently permissive. This is the first analysis to actually show this explicitly. Second, I find that the conclusion reached by Amorim Neto and Cox (1997) concerning the modifying impact of upper tier seats is based on a single extreme outlier in their dataset (Belgium). My own results suggest that upper tier seats have little ‘psychological’ impact on voters and political elites since there is no consistent and compelling evidence that they ever have a modifying effect on social heterogeneity. Finally, my analysis indicates the importance of considering the number of presidential candidates when addressing the impact of presidential elections on legislative elections. By doing so, one can find a potential explanation for some of the contradictory results in the literature.

5 Legislative Parties

Whereas I examined the ‘psychological effects’ of electoral institutions in the previous sections, I now focus on their ‘mechanical effects’. In this section, I examine those features of electoral systems that might influence how accurately the number of legislative parties mirrors the number of parties
amongst the electorate.

5.1 Theory

It is clear that the number of legislative parties would be identical to the number of electoral parties in a particular country if the electoral system was characterized by pure proportionality. However, the most cursory examination of electoral systems around the world indicates that such a system does not exist. Even in the world’s most proportional systems it is possible for a party to obtain a significant number of votes without winning a seat. Thus, the number of legislative parties will nearly always be smaller than the number of parties amongst the electorate. This can be seen in Figure 3, which plots the effective number of legislative parties from all democratic legislative elections since 1946 against the effective number of electoral parties. All but a handful of observations fall below the 45 degree line. The extent to which the number of legislative parties is smaller should depend on several institutional features such as the average district magnitude and the number of upper tier seats.

Insert Figure 3

In single-member districts, only one of the parties actually winning electoral support can obtain a seat. However, more electoral parties can actually win seats and obtain representation in the legislature as the district magnitude increases. Thus, the accuracy with which the number of legislative parties mirrors the number of electoral parties grows as district magnitude becomes larger. The number of electoral parties should also translate more accurately into legislative parties when there are upper tier seats. This is because these seats are typically compensatory in nature. For example, 39 seats are redistributed in a second tier among the parties and cartels in Sweden whose share of the seats is less than their share of the votes (Caramani 2000). Likewise, parties in Venezuela that are under-represented in the allocation of district level seats relative to their national voteshare are eligible to receive a limited number of compensatory seats (Jones 1995, Crisp 2000).

Thus, one would expect the number of legislative parties to increase as the number of electoral parties grows. However, the extent to which this occurs
depends on the proportionality of the electoral system’s mechanical effects. More specifically,

Hypothesis 6: The number of electoral parties should have a greater effect on the number of legislative parties when district magnitudes are large.

Hypothesis 7: The number of electoral parties should have a greater effect on the number of legislative parties when the percentage of seats allocated in upper tiers is large.

5.2 Model

These hypotheses can be tested using the following model:

\[
LEGPARTIES_i = \beta_0 + \beta_1 ELECPARTIES_i \\
+ \beta_2 \ln(MAGNITUDE)_i + \beta_3 UPPERTIER_i \\
+ \beta_4 ELECPARTIES_i \times \ln(MAGNITUDE) \\
+ \beta_5 ELECPARTIES_i \times UPPERTIER + \epsilon_i
\] (4)

LEGPARTIES measures the effective number of legislative parties, while ELECPARTIES measures the effective number of electoral parties. MAGNITUDE is the average district magnitude and UPPERTIER is the percentage of assembly seats allocated in upper tiers. The interaction terms are required to test the conditional nature of Hypotheses 6 and 7. I use the same dataset as before to test this model. The only difference is that I now include those elections from countries that employ fused vote systems. This leaves a total of 668 legislative elections. Descriptive statistics are shown in Table 8 below.

Predicted values are listed in Table 9. Since the number of electoral parties should influence the number of legislative parties in single-member districts, \( \beta_1 \) should be positive. The estimated causal effect of electoral parties should increase as district magnitude and upper tier seats are expected to increase the proportionality of the electoral system. As a result, the coefficients on each of the interaction terms are expected to be positive. District magnitude
and upper tier seats should have no effect on the number of legislative parties when there are no electoral parties. This means that $\beta_2$ and $\beta_3$ should both be zero.

Insert Table 9

Once again, I tested Hypotheses 6 and 7 using both cross-sectional and time-series cross-sectional formats. The cross-sectional investigation analyzed 54 elections in the 1980s and 81 elections in the 1990s. As before, I employed the Beck and Katz (1995) procedure for panel-corrected standard errors. The Durbin-Watson statistic from a pooled regression indicated that there was no evidence of first-order autocorrelation. As a result, a lagged dependent variable is not required. Unlike in the previous two sections, there is no theoretical reason to include a lagged dependent variable either. This is because the number of legislative parties in the previous election is unlikely to influence the ‘mechanical’ translation of votes into seats.

5.3 Results and Interpretation

The results from four different models are shown in Table 10 below.

Insert Table 10 here

Once again, the results from the Amorim Neto and Cox data provide a point of comparison. It should be noted that these figures do not match those in Table 1 of their article. One reason for this is that it is not possible to replicate their results perfectly. More significantly, the results in their article are based on a model that does not include any of the linear components for the interaction terms apart from the effective number of electoral parties. Once the other linear terms are included, the evidence to support Amorim Neto and Cox’s conclusion that upper tier seats modify the impact of electoral parties disappears. This result is somewhat consistent with the figures from the other models. In no model do upper tier seats ever increase the accuracy with which the number of electoral parties are translated into legislative parties. In fact, three of the models suggest that they actually make the electoral system more disproportional. 25
In contrast, Hypothesis 6 receives considerable support since the interaction term, ELECPARTIES*MAGNITUDE, is positive and significant across all four models. The pooled model in Table 10 indicates that an additional electoral party in countries with single-member districts and no upper tier seats will lead to an additional 0.6 legislative parties. For a country such as the Netherlands where the district magnitude is 150, the results suggest that an additional electoral party translates into 0.9 legislative parties. Clearly, the mechanical effects of electoral institutions can vary quite significantly across countries. It is these effects that encourage voters to engage in strategic voting and party elites to participate in strategic entry or withdrawal.

6 Conclusion

What determines the number of parties in a particular country? The theoretical argument that I presented at the very beginning suggested that social forces were the primary driving force behind the multiplication of political parties (Duverger 1954). However, the accuracy with which social cleavages are translated into political parties or presidential candidates should depend on the permissiveness of the electoral system. The evidence presented in this article provides strong support for this theoretical framework. Table 11 indicates how the estimated causal effect of an additional social group on the number of electoral and legislative parties changes with district magnitude. It is relatively easy to see that district magnitude influences not only how social groups are transformed into electoral parties but also how votes are translated into legislative parties. The larger the district magnitude, the greater the effect of social heterogeneity on the number of parties. For example, an additional social group in the United Kingdom is only expected to lead to an extra 0.12 electoral parties and 0.07 legislative parties. On the other hand, an additional social group is associated with 1.41 electoral parties and 1.25 legislative parties in Israel.

While district magnitude consistently has an influential effect on the impact of social heterogeneity, the same cannot be said for upper tier seats. The replication of the Amorim Neto and Cox (1997) analysis suggests that they were perhaps too hasty in claiming that upper tier seats have an important
effect on the number of electoral parties by modifying the impact of social heterogeneity. My results from various cross-sectional and time-series cross-sectional analyses indicate that upper tier seats rarely have any effect. When they do, it is often in the wrong direction. The inability to find the predicted impact of upper tier seats may simply be the result of the fact that about half of the world’s multi-tier elections since 1946 have occurred in the 1990s. Many of the countries adopting multiple electoral tiers in the 1990s have recently transitioned to democracy and may not have reached an equilibrium in their party system yet. It would be interesting to see whether upper tier seats have the predicted impact as these new democracies hold more elections.

Presidential elections also seem to have an impact on the number of electoral parties. Countries typically have fewer electoral parties when there are few presidential candidates. This reductive effect declines as the number of candidates increases. The fact that the number of presidential candidates is likely to be higher when there are runoff procedures suggests that there should be more electoral parties in those countries using runoffs for presidential elections rather than plurality rule. In fact, there is considerable empirical support for this (Jones 1994, Jones 2002). In the dataset that I use, the average number of electoral parties in those countries holding presidential elections with runoffs is about 4.6. The average number of electoral parties in those countries employing plurality rule is only 3.6. An implication of this is that one should witness an increase in the number of electoral parties in those Latin American countries that have recently switched from plurality systems to ones using runoff procedures (Payne et al. 2002).

The fact that the empirical support for the hypotheses discussed above is not as strong in the 1990s does suggest that party systems do take a while to reach equilibrium. However, an alternative explanation that cannot entirely be ruled out by this analysis is that the weak results for the 1990s are a consequence of all the new democracies in Eastern Europe. It could simply be the case that the effect of social heterogeneity and electoral institutions might not be the same in this region of the world. There is some reason to question the validity of this line of reasoning, though. The fact that only about 40% of the new democracies appearing in the 1990s are located in Eastern Europe suggests that the weak results for this decade may be a feature of new democracies in general rather than a particular geographical region. Numerous transitions to democracy or independence during this period of time also occurred in Africa, Asia, Latin America and even Western
Europe. Since social heterogeneity and electoral institutions do have the predicted effects on the party systems of the established democracies in these regions, there is little evidence to support the notion of strong regional idiosyncracies. Although, the fact that East European countries experiment so often with their electoral rules suggests that their party systems will take longer to reach the predicted equilibrium (Golder 2002), there is little compelling evidence to suggest that this equilibrium will never be reached.

While there has been a substantial accumulation of knowledge in recent years concerning the factors that influence the number of parties in a particular country, there are many more interesting questions that should be addressed. For example, theory suggests that the effects of electoral institutions should primarily be felt at the district level rather than at the national level (Cox 1999). It should be relatively easy to test this claim if data on social heterogeneity is available at the constituency level. For example, one could compare the estimated causal effect of district magnitude on the local party system to its effect on the national party system. The fact that electoral institutions appear to have an effect beyond the district level suggests that party systems are nationalized to some extent. However, the process through which party systems become nationalized is little understood. Only now are we beginning to examine the empirical variation in the extent to which party systems of different countries are nationalized (Chhibber & Kollman 1998, Kasuya 2001, Jones 2003). New theoretical and empirical research is required to answer these questions.
Table 1: Descriptive Statistics for Presidential Elections, 1946-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESIDENT</td>
<td>205</td>
<td>2.90</td>
<td>1.08</td>
<td>1</td>
<td>6.57</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>205</td>
<td>2.09</td>
<td>1.24</td>
<td>1</td>
<td>8.18</td>
</tr>
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</table>

Table 2: Predicted Values

<table>
<thead>
<tr>
<th>Coefficient (variable)</th>
<th>Predicted Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1$ (SOCIAL)</td>
<td>0</td>
</tr>
<tr>
<td>$\beta_2$ (RUNOFF)</td>
<td>0</td>
</tr>
<tr>
<td>$\beta_3$ (SOCIAL*RUNOFF)</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 3: The Dependent Variable is the Effective Number of Presidential Candidates

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Amorim Neto &amp; Cox</th>
<th>1980s</th>
<th>1990s</th>
<th>Pooled1</th>
<th>Pooled2</th>
<th>Established Democracies</th>
<th>Presidential Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESIDENT (LAGGED)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.47***</td>
<td>0.43***</td>
<td>0.43***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUNOFF</td>
<td>-2.49</td>
<td>-0.67</td>
<td>-0.77</td>
<td>-0.50**</td>
<td>-0.34</td>
<td>-0.81*</td>
<td>-0.98***</td>
</tr>
<tr>
<td></td>
<td>(-1.56)</td>
<td>(-1.61)</td>
<td>(-0.72)</td>
<td>(-0.23)</td>
<td>(0.32)</td>
<td>(0.48)</td>
<td>(0.36)</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>-0.98</td>
<td>-0.29</td>
<td>-0.25</td>
<td>-0.10</td>
<td>-0.12</td>
<td>-0.02</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td>(-0.77)</td>
<td>(-0.73)</td>
<td>(-0.22)</td>
<td>(0.08)</td>
<td>(0.11)</td>
<td>(0.19)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>SOCIAL*RUNOFF</td>
<td>2.01*</td>
<td>1.06</td>
<td>0.41</td>
<td>0.43***</td>
<td>0.24</td>
<td>0.51*</td>
<td>0.54***</td>
</tr>
<tr>
<td></td>
<td>(0.94)</td>
<td>(0.83)</td>
<td>(0.26)</td>
<td>(0.10)</td>
<td>(0.15)</td>
<td>(0.27)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>4.30***</td>
<td>2.78*</td>
<td>3.61***</td>
<td>2.88***</td>
<td>1.78***</td>
<td>1.71***</td>
<td>1.88***</td>
</tr>
<tr>
<td></td>
<td>(1.23)</td>
<td>(1.37)</td>
<td>(0.61)</td>
<td>(0.20)</td>
<td>(0.41)</td>
<td>(0.58)</td>
<td>(0.46)</td>
</tr>
<tr>
<td>Observations</td>
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<td>15</td>
<td>48</td>
<td>205</td>
<td>134</td>
<td>103</td>
<td>96</td>
</tr>
<tr>
<td>$R^2$</td>
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<td>0.46</td>
<td>0.06</td>
<td>0.12</td>
<td>0.29</td>
<td>0.38</td>
<td>0.37</td>
</tr>
</tbody>
</table>

*p < 0.10; **p < 0.05; ***p < 0.01 (two-tailed)
Standard errors are given in parentheses for the first three models; panel-corrected standard errors are used for the remaining models.
Table 4: The Estimated Causal Effect of Social Heterogeneity on the Number of Presidential Candidates in Plurality and Runoff Systems

<table>
<thead>
<tr>
<th>Specification</th>
<th>Social Heterogeneity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plurality</td>
<td>Runoff</td>
<td></td>
</tr>
<tr>
<td>Amorim Neto &amp; Cox</td>
<td>-2.49</td>
<td>-0.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-1.56)</td>
<td>(?)</td>
<td></td>
</tr>
<tr>
<td>1980s</td>
<td>-0.29</td>
<td>0.76*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.73)</td>
<td>(0.39)</td>
<td></td>
</tr>
<tr>
<td>1990s</td>
<td>-0.25</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.14)</td>
<td></td>
</tr>
<tr>
<td>Pooled1 (without lag)</td>
<td>-0.10</td>
<td>0.33***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.07)</td>
<td></td>
</tr>
<tr>
<td>Pooled2 (with lag)</td>
<td>-0.12</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.12)</td>
<td></td>
</tr>
<tr>
<td>Established Democracies</td>
<td>-0.02</td>
<td>0.49***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.19)</td>
<td></td>
</tr>
<tr>
<td>Presidential Systems</td>
<td>-0.12</td>
<td>0.42**</td>
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</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.19)</td>
<td></td>
</tr>
</tbody>
</table>

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)
(Standard errors are given in parentheses)
### Table 5: Descriptive Statistics for Electoral Parties, 1946-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECPARTIES</td>
<td>545</td>
<td>4.02</td>
<td>1.89</td>
<td>1.23</td>
<td>14.13</td>
</tr>
<tr>
<td>MAGNITUDE</td>
<td>545</td>
<td>13.33</td>
<td>30.96</td>
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<td>150</td>
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<tr>
<td>UPPERTIER</td>
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<td>12.40</td>
<td>0</td>
<td>77.95</td>
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<tr>
<td>SOCIAL</td>
<td>545</td>
<td>1.78</td>
<td>1.09</td>
<td>1</td>
<td>14.22</td>
</tr>
<tr>
<td>PRESIDENT</td>
<td>237</td>
<td>2.89</td>
<td>1.22</td>
<td>1</td>
<td>6.57</td>
</tr>
<tr>
<td>PROXIMITY</td>
<td>237</td>
<td>0.66</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### Table 6: Predicted Values

<table>
<thead>
<tr>
<th>Coefficient (variable)</th>
<th>Predicted Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1$ (SOCIAL)</td>
<td>0</td>
</tr>
<tr>
<td>$\beta_2$ ln(MAGNITUDE)</td>
<td>0</td>
</tr>
<tr>
<td>$\beta_3$ (UPPERTIER)</td>
<td>0</td>
</tr>
<tr>
<td>$\beta_4$ (PRESIDENT)</td>
<td>+</td>
</tr>
<tr>
<td>$\beta_5$ (PROXIMITY)</td>
<td>−</td>
</tr>
<tr>
<td>$\beta_6$ (SOCIAL*ln(MAGNITUDE))</td>
<td>+</td>
</tr>
<tr>
<td>$\beta_7$ (SOCIAL*UPPERTIER)</td>
<td>+</td>
</tr>
<tr>
<td>$\beta_8$ (PRESIDENT*PROXIMITY)</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 7: The Dependent Variable is the Effective Number of Electoral Parties

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Amorim Neto &amp; Cox</th>
<th>1980s</th>
<th>1990s</th>
<th>Established Democracies (1990s)</th>
<th>Pooled1 Established Democracies (Pooled1)</th>
<th>Pooled2 Established Democracies (Pooled2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECPARTIES (LAGGED)</td>
<td>0.76***</td>
<td>0.76***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL</td>
<td>-0.05 (-0.28)</td>
<td>-0.06 (-0.11)</td>
<td>0.07 (0.37)</td>
<td>-0.62 (-0.68)</td>
<td>0.19** (0.10)</td>
<td>0.12 (0.09)</td>
</tr>
<tr>
<td>ln(MAGNITUDE)</td>
<td>-0.08 (-0.30)</td>
<td>-0.02 (-0.41)</td>
<td>0.50 (-0.44)</td>
<td>-0.69 (-0.59)</td>
<td>0.33** (0.13)</td>
<td>0.08 (0.11)</td>
</tr>
<tr>
<td>UPPERTIER</td>
<td>-0.07 (-0.04)</td>
<td>-0.17 (-0.13)</td>
<td>0.01 (0.03)</td>
<td>-0.01 (-0.06)</td>
<td>0.05*** (0.01)</td>
<td>-0.05** (0.02)</td>
</tr>
<tr>
<td>PRESIDENT</td>
<td>0.22 (0.27)</td>
<td>0.59 (0.43)</td>
<td>0.37 (0.26)</td>
<td>0.07 (0.22)</td>
<td>0.34*** (0.09)</td>
<td>0.27*** (0.07)</td>
</tr>
<tr>
<td>PROXIMITY</td>
<td>-5.88*** (-0.84)</td>
<td>-2.91*** (1.32)</td>
<td>-4.31*** (1.26)</td>
<td>-5.07*** (1.24)</td>
<td>-3.45*** (0.50)</td>
<td>-3.13*** (0.40)</td>
</tr>
<tr>
<td>SOCIAL*ln(MAGNITUDE)</td>
<td>0.37* (0.20)</td>
<td>0.18 (0.23)</td>
<td>-0.09 (0.17)</td>
<td>0.69* (0.34)</td>
<td>0.08 (0.08)</td>
<td>0.27*** (0.08)</td>
</tr>
<tr>
<td>SOCIAL*UPPERTIER</td>
<td>0.07*** (0.02)</td>
<td>0.15 (0.09)</td>
<td>-0.01 (-0.01)</td>
<td>0.002 (0.04)</td>
<td>-0.02*** (0.004)</td>
<td>0.06*** (0.02)</td>
</tr>
<tr>
<td>PRESIDENT*PROXIMITY</td>
<td>1.84*** (0.43)</td>
<td>0.12 (0.66)</td>
<td>1.02*** (0.46)</td>
<td>1.50*** (0.44)</td>
<td>0.82*** (0.20)</td>
<td>0.70*** (0.17)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>2.60*** (0.51)</td>
<td>3.32*** (0.49)</td>
<td>4.08*** (0.95)</td>
<td>4.98*** (1.33)</td>
<td>2.79*** (0.19)</td>
<td>2.88*** (0.17)</td>
</tr>
<tr>
<td>Observations</td>
<td>51</td>
<td>37</td>
<td>62</td>
<td>38</td>
<td>545</td>
<td>475</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.77</td>
<td>0.62</td>
<td>0.29</td>
<td>0.50</td>
<td>0.30</td>
<td>0.40</td>
</tr>
</tbody>
</table>

* p < 0.10; ** p < 0.05; *** p < 0.01 (two-tailed)
Standard errors are given in parentheses for the first four columns; panel-corrected standard errors are used for the remaining columns.
Figure 1: The Estimated Causal Effect of Proximity on the Number of Electoral Parties in Established Democracies

- Coefficient on Proximity
- 95% Confidence Intervals

Effective Number of Presidential Candidates

Estimated Causal Effect of Proximity

-4 -3 -2 -1 0 1 2 3 4 5 6

0 1 2 3 4 5 6
Figure 2: The Estimated Causal Effect of Social Heterogeneity on the Number of Electoral Parties in Established Democracies
Figure 3: The Effective Number of Legislative Parties Against the Effective Number of Electoral Parties since 1946
Table 8: Descriptive Statistics for Legislative Elections, 1946-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGPARTIES</td>
<td>668</td>
<td>3.15</td>
<td>1.40</td>
<td>1</td>
<td>10.87</td>
</tr>
<tr>
<td>ELECPARTIES</td>
<td>668</td>
<td>3.81</td>
<td>1.77</td>
<td>1.23</td>
<td>14.13</td>
</tr>
<tr>
<td>MAGNITUDE</td>
<td>668</td>
<td>1.38</td>
<td>1.35</td>
<td>0</td>
<td>5.01</td>
</tr>
<tr>
<td>UPPERTIER</td>
<td>668</td>
<td>6.10</td>
<td>13.17</td>
<td>0</td>
<td>77.95</td>
</tr>
</tbody>
</table>

Table 9: Predicted Values

<table>
<thead>
<tr>
<th>Coefficient (variable)</th>
<th>Predicted Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_1 ) (ELECPARTIES)</td>
<td>+</td>
</tr>
<tr>
<td>( \beta_2 ) ln(MAGNITUDE)</td>
<td>0</td>
</tr>
<tr>
<td>( \beta_3 ) (UPPERTIER)</td>
<td>0</td>
</tr>
<tr>
<td>( \beta_4 ) (ELECPARTIES*ln(MAGNITUDE))</td>
<td>+</td>
</tr>
<tr>
<td>( \beta_5 ) (ELECPARTIES*UPPERTIER)</td>
<td>+</td>
</tr>
</tbody>
</table>
Table 10: The Dependent Variable is the Effective Number of Legislative Parties

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Amorim Neto</th>
<th>1980s</th>
<th>1990s</th>
<th>POOLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECPARTIES</td>
<td>0.37***</td>
<td>0.58***</td>
<td>0.39***</td>
<td>0.60***</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td>(0.08)</td>
<td>(0.08)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>MAGNITUDE</td>
<td>-0.32***</td>
<td>-0.26</td>
<td>-0.14</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.18)</td>
<td>(0.15)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>ELECPARTIES*MAGNITUDE</td>
<td>0.16***</td>
<td>0.14**</td>
<td>0.09**</td>
<td>0.06***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.05)</td>
<td>(0.04)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>UPPERTIER</td>
<td>0.01</td>
<td>0.05***</td>
<td>0.017</td>
<td>0.02***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.02)</td>
<td>(0.013)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>ELECPARTIES*UPPERTIER</td>
<td>0.19</td>
<td>-0.009**</td>
<td>-0.003</td>
<td>-0.004***</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.004)</td>
<td>(0.003)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1.02***</td>
<td>0.41*</td>
<td>1.19***</td>
<td>0.55***</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.23)</td>
<td>(0.29)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Observations</td>
<td>54</td>
<td>54</td>
<td>81</td>
<td>668</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.94</td>
<td>0.92</td>
<td>0.76</td>
<td>0.85</td>
</tr>
</tbody>
</table>

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed)

(Standard errors are given in parentheses)
Table 11: Estimated Causal Effect of an Additional Social Group on the Number of Electoral and Legislative Parties by District Magnitude

<table>
<thead>
<tr>
<th>District Magnitude</th>
<th>Countries (examples)</th>
<th>Electoral Parties</th>
<th>Legislative Parties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Australia</td>
<td>0.12</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Canada</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>United Kingdom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-5</td>
<td>Chile</td>
<td>0.31-0.55</td>
<td>0.20-0.38</td>
</tr>
<tr>
<td></td>
<td>Thailand</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ireland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-10</td>
<td>Greece</td>
<td>0.55-0.74</td>
<td>0.38-0.55</td>
</tr>
<tr>
<td></td>
<td>Argentina</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honduras</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-20</td>
<td>Portugal</td>
<td>0.74-0.93</td>
<td>0.55-0.73</td>
</tr>
<tr>
<td></td>
<td>Finland</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brazil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Luxembourg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120-150</td>
<td>Israel</td>
<td>1.41-1.47</td>
<td>1.25-1.32</td>
</tr>
<tr>
<td></td>
<td>Netherlands</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Sources for Election Results

Articles and Books

Information relating to election results came from Payne et al. (2002); Baxter (2002); Bigelow (1960); Birch (2001); Butwell (1960); Caramani (2000); Castillo (1997); Conaghan (1995); Cook and Paxton (1998); Cox (1997); Crisp (2000); Fairbairn (1957); FLACSO (1995); Fraga (1999); Central Electoral Commission of the Dominican Republic (1970, 1974, 1990, 1995); Gonzalez (1995); Jones and Samuels (2002); Kohin (1964); Leon (1986); Lijphart (1994); Mackie and Rose (1991); Monlinelli, Palanza and Sin (1999); Nicolau (1998); Nohlen (1978, 1993a, 1993b); Nohlen, Grotz and Hartmann (2001b, 2001a); Nohlen, Krennerich and Thibaut (1999); Ozbudun (2000); Perez (1986); Saez (1998); Silverstein (1952); Solsten (1993); Ulloa (1999); Venezuelan Electoral Commission (1963). Various issues of *West European Politics, Electoral Studies, the European Journal of Political Research, Boletin Latinoamerica*, the *Chronicle of Parliamentary Elections*, and the *Political Handbook of the World* were also used.

Personal Correspondence

Jonathan Hartlyn, Mark Jones, Helga Fleischhacker, Brian Crisp.

Internet Sites

Notes


2 The recent work by Coppedge (2002) and Jones (1999) represent exceptions.

3 A common criticism of this framework is that it ignores the problem of endogeneity since electoral institutions are treated as exogenously-given (Grumm 1958, Eckstein 1963, Benoit 2002). Instead of claiming that electoral institutions shape party systems, this criticism posits that it is just as reasonable to think that party systems (and social cleavages) determine electoral laws (Boix 1999, Kaminski 1999, Kaminski 2002). There are at least two valid responses to this criticism. First, there is strong evidence that electoral structures influence party systems even after controlling for social heterogeneity (Cox 1997: 20-23, Powell: 1982). Second, electoral institutions often prove to be quite sticky (Lijphart 1994: 52, Mozaffar 2001: 6). After all, it is typically the case that ‘it is the winners under the current electoral system who . . . must find it in their interest to change the electoral system’ (Cox 1997: 18).

4 Powell (1982: 82) argues that Duverger saw social forces as the ‘most decisive influences driving the multiplication of parties.’ Electoral systems functioned primarily as a ‘brake or accelerator.’

5 Since voters may care about which governments form after the election, a strategic vote could still make sense in a highly proportional system. However, it would require the voter to figure out an extremely sophisticated model of government formation (Austen-Smith & Banks 1988).

6 An alternative way to restate this hypothesis might be to claim that electoral institutions only influence the number of parties when there is a high level of social heterogeneity. However, I believe that this restatement is somewhat misleading and theoretically inaccurate. The theoretical framework outlined above clearly indicates that electoral institutions play the modifying role in determining the number of parties. After all, the electoral system can in no obvious sense be said to ‘cause’ political parties to form. As a result, I prefer the more accurate theoretical claim stated in Hypothesis 1.

7 Gill (2001) notes that if this assumption is correct, then terms such as SOCIAL * INSTITUTION are really single variables rather than interaction terms between two variables.

8 Ordeshook and Shvetsova (1994) make several potential inferential errors by treating the results of their interaction model as in regular additive models. For example, they often claim that social heterogeneity or the permissiveness of electoral institutions have no effect on the number of parties in a particular country if the linear component (β1 or β2 in
Equation 1) is not statistically significant. They fail to realize that these coefficients only represent the estimated causal effect of SOCIAL and INSTITUTION when the relevant modifying variable is at zero. Social heterogeneity and electoral institutions may well have significant effects on the party system at more realistic levels of the modifying variable.

9 For example, the conditional standard error for SOCIAL in Equation 1 is calculated as \( \sqrt{\text{var}(\beta_1) + \text{var}(\beta_3) + 2\text{cov}(\beta_1, \beta_3) + \text{var}(\text{INSTITUTION})^2} \).

The effective number of presidential candidates is calculated as \( 1/\sum v_i^2 \), where \( v_i \) is the percentage of votes won by the \( i^{th} \) candidate (Laakso & Taagepera 1979). The data sources used to construct this variable are given in the appendix. The effective number of ethnic groups is calculated as \( 1/\sum g_i^2 \), where \( g_i \) is the percentage of the population comprised by the \( i^{th} \) ethnic group. Data for this variable were kindly provided by James Fearon (2002). These data cover 820 ethnic groups in 160 countries that made up at least 1% of a country’s population in the early 1990s. As such, these data comprise a significantly larger number of countries than other existing measures of ethnic diversity.

11 Presidential elections are coded as employing a runoff procedure if they use an absolute or qualified majority threshold. An absolute majority threshold requires that a candidate must win greater than 50% of the vote to be elected in the first round. The threshold that must be met in qualified majority systems varies from a low of 36% in the 1980 Peruvian elections to a high of 55% in the 1996 Sierra Leone election. In some qualified majority systems, the electoral process in the second round mirrors the absolute majority systems with the top two candidates facing a runoff election. In others, an electoral college, parliament or joint session of a bicameral legislature are used to elect the winning candidate. I have coded both absolute and qualified majority systems as employing runoff procedures since they clearly provide greater strategic incentives for more candidates to run than plurality systems. Data for this variable come from Golder (2002).

12 The specific classification of regime types is based on an updated and revised version of the data found in Przeworski, Alvarez, Cheibub and Limongi (2000).

13 These figures were taken directly from Table 3 in their article. It was not possible to actually replicate these figures since their published data do not include a runoff variable.

14 Several different criteria have been proposed for classifying presidential and parliamentary regimes (Shugart 1992, Lijphart 1992). I follow a fairly minimalist definition, where a presidential regime is one in which the government serves at the pleasure of the elected president. In other words, the president must select and determine the survival of the government. A parliamentary regime is one in which the government serves so long as it maintains the confidence of the legislature. A regime in which the government must respond both to the legislative assembly and to an elected president is classified as mixed. This classification scheme follows the recommendations of Przeworski et al. (2000).

15 It is not possible to calculate both of the conditional standard errors for the Amorim Neto and Cox model since I do not have their runoff variable and they do not report the covariance between social heterogeneity and the interaction term. However, it is clear that the conditional coefficient is negative and that there is little support for their hypothesis.
that social heterogeneity increases the number of presidential candidates when runoffs are used. This illustrates the danger of emphasizing the sign and significance of the interaction term as they do without actually calculating the full range of conditional coefficients and standard errors.

The 1995 Croatian assembly comprised 127 seats. 28 seats were allocated in single-member districts. The remaining seats were allocated in upper tiers. 80 seats were allocated in a single national tier, 12 seats in a single district for the Croatian diaspora and 7 seats in special districts for ethnic minorities (Kasapovic 1996).

Temporal proximity is calculated as follows: \( \text{PROXIMITY} = 2 \times \left| \frac{L_t - P_{t-1}}{P_{t+1} - P_{t-1}} - 1/2 \right| \), where \( L_t \) is the year of the legislative election, \( P_{t-1} \) is the year of the previous presidential election, and \( P_{t+1} \) is the year of the next presidential election. The following results are qualitatively similar if a dummy variable is used to capture whether presidential and legislative elections are concurrent or not.

Both Papua New Guinea and Mauritius use majoritarian formulas in their upper tiers (Hicken & Kasuya 2002). The upper tier seats allocated in Malta since 1987 have specifically been designed to ensure that any party that wins a majority of votes receives a majority of seats (Golder 2002). In the democratic elections in South Korea between 1988 and 1995 the largest party at the constituency level was guaranteed at least one half of the upper tier seats; only the remaining upper tier seats were allocated according to a proportional formula (Nohlen, Grotz & Hartmann 2001a, Morriss 1999). The seats allocated in each of these four electoral systems are clearly not compensatory in nature.

The method of bounds essentially requires calculating the effective number of parties treating the ‘other’ category as a single party (smallest effective number of parties), then recalculating the effective number of parties as if every vote or seat in the ‘other’ category belonged to a different party (largest effective number of parties) and taking the mean.

Although it was possible to replicate Amorim Neto and Cox’s results for electoral parties perfectly, the results shown in Table 7 are not entirely the same as those shown in Table 2 of their article. Amorim Neto and Cox failed to include all of the linear components of the interaction term separately in their model. Moreover, they included upper tier seats as an additive variable rather than an interaction variable as their theoretical argument would imply. The results shown in Table 7 are based on a model where these features are corrected.

An asterix is used to indicate significance so as to mirror how significance is illustrated in traditional results tables. Drawing confidence intervals as in the previous figure would be an alternative, but would look confusing with three lines.

As I noted earlier, one cannot in fact be very confident in claiming that upper tier seats increase the effect of social heterogeneity on the number of electoral parties. This is because the coefficients for SOCIAL*UPPERTIER are not particularly robust across the various models. However, much more confidence can be placed in the conclusion that larger district magnitudes do enhance the impact of social heterogeneity. For example, the equivalent graphical analysis for the pooled established democracies model with the
lagged dependent variable is almost identical to Figure 2 when there are no upper tier seats.

23 Although it is impossible for the actual number of legislative parties to be larger than the number of electoral parties, this is no longer the case when we deal with the effective number of parties. For example, the use of electoral districts specifically created for minority groups can mean that the effective number of legislative parties is greater than the effective number of electoral parties.

24 It also depends on the threshold of votes that must be overcome before a party can obtain a seat. A ‘natural’ threshold that depends on the size of the legislative assembly and the district magnitude exists in all countries. However, some countries have also introduced higher legal thresholds that must be overcome before receiving a seat. For example, the electoral laws used in the recent 2002 elections in Turkey stipulated that a party must obtain more than 10% of the vote nationwide to be eligible for legislative seats. These legal thresholds clearly affect the proportionality of a country’s party system. The problem with including these thresholds in a statistical test is that it is difficult to compare them cross-nationally. For example, some thresholds are implemented in the electoral constituency, whereas others are enforced at the regional or national level. Some thresholds even depend on the actual election outcome. For these reasons, I have excluded legal thresholds as an explanatory variable in the analysis that follows.

25 The negative results in the 1990s and the pooled model may be caused by elections in Eastern Europe. The number of electoral parties in the lower tiers of Eastern Europe are typically much larger than the number of parties in the upper tier. This is because local notables have been able to win in single-member districts without national party affiliations. Party labels have only proven to be crucial in the larger proportional upper tier districts (Moser 1999). This means that upper tiers will have a negative impact on the translation of electoral parties into legislative parties in these cases. This should obviously change as the East European party systems become nationalized. Some evidence for this comes from the results of a model where the new democracies that emerged in the 1990s are dropped. The coefficient on ELECPARTIES*UPPERTIER is now positive, although insignificant.

26 The figures in Table 11 are based on the established democracies pooled models without a lagged dependent variable.
References


Laakso, Markku & Rein Taagepera. 1979. “‘Effective’ Number of Parties: A Measure with Application to Western Europe.” *Comparative Political Studies* pp. 3–27.


