Extra System Electoral Volatility and the Vote Share of Young Parties

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Paper for the annual meeting of the Canadian Political Science Association

May 28, 2009

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[*] Herbert Kitschelt and Richard Rose offered useful suggestions on an earlier version of this paper. María Victoria De Negri, Carol Hendrickson, Matthew Panhans, and Melissa Rossi provided research assistance.

What accounts for the remarkable differences in how electorally successful new parties are in different contexts? This question is relatively new on the political science agenda. In their seminal work, Lipset and Rokkan (1967) underscored the stability of Western European party systems. By implication, it was very difficult for new parties to come on the scene and secure a significant share of the vote. In the aftermath of the third wave of democratization, however, the variance in the fluidity or stability of party systems is great. Among the 58 countries included in the analysis in this paper, mean electoral volatility—a conventional, widely used measure of aggregate electoral change form one election to the next—is twenty *times* greater in the country with highest volatility (Benin, 68.3%) than in the country with the greatest aggregate stability (the United States, 3.4%). Conversely, the capacity of new parties to burst on the scene and win a meaningful share of the vote varies greatly across countries.

Electoral volatility is a useful measure of aggregate stability and change in party systems (Bartolini and Mair 1990; Bielasiak 2002; Birch 2003: 119-135; Caramani 2006; Chhibber and Noorudin 2008; Gunther 2005; Lane and Ersson 2007; Madrid 2005; Mozaffar and Scarritt 2005; Pedersen 1979, 1983; Przeworski 1975; Roberts and Wibbels 1999; Shamir 1984; Sikk 2005; Tavits 2005, 2008b; Toka 1998). It is computed by adding the absolute value of change in the percentage of votes gained or lost by each party from one election to the next, and dividing by two so that gains and losses are not effectively double counted. Although this conventional measure is useful, it fails to distinguish between vote transfers among established parties and transfers to new contenders. We argue that this distinction is helpful in analyzing differences among party systems.

In this paper, we analyze the capacity of new and young parties to win votes. Building on some recent works (Birch 2003: 119-135; Golosov 2004: 47-49; Sikk 2005; Tavits 2008b), we distinguish between within-system and extra-system electoral volatility. Within-system volatility means that voters are transferred from one established party to another. Extra-system volatility occurs when the vote share of some established parties declines and is instead captured by new electoral contenders. The dynamics and characteristics of a party system are quite different if new parties frequently enter the system and capture a significant share of the vote. In this situation, not only do the vote shares change from one party to another, but the very parties that compete to win elections change. A swing of 10% of the electorate from Republicans to Democrats is quite a different phenomenon than a swing of 10% from Republicans to a party that hitherto did not exist. In the latter situation, a newcomer successfully challenges all of the previously existing parties.

Extra-system volatility refers to the fact that these new parties come from outside the previously existing party system even though they become part of the new system. It indicates the extent to which new parties grab an important share of the vote. It therefore serves as a measure of change and stability not only of electoral competition among parties, but also of the membership in the party system. High extra-system volatility reflects dissatisfaction with all of the parties within the system. It captures voters'

willingness to shift to an entirely new party,[1] and it therefore taps a failure of representation of the previously existing parties. Extra-system volatility is therefore a useful complement to the widely used data on electoral volatility and a useful complementary measure of party system institutionalization.

We also introduce a second indicator (later used as a dependent variable): the share of the vote captured by *young* parties, defined as those that have competed in elections for ten years or less. If our only dependent variable were the share of the vote captured by *new* parties, there would be no distinction between a party that has competed once and a party that has competed for 150 years. Young parties are still youthful challengers to the established parties, and their electoral support still signals a failure of the previously existing parties. The vote share of young parties is a way of assessing the electoral success of youthful entrants during the short period when they still obviously count as fresh contenders.

Whereas extra-system volatility is a subset of total electoral volatility, this is not true for the vote share won by young parties. If a *new* party wins 20% of the vote in its first election, this 20% counts toward extra-system volatility, total volatility, and the share of the vote won by young parties. If this party wins 20% again in the next election (or any other election until ten years after its first election), this 20% counts toward the share of the vote won by *young* parties, but not toward extra-system volatility or total volatility.

Prior to the "third wave of democratization," studying extra-system volatility and the vote share of young parties would not have been especially useful because variance across countries was limited. The main parties in western European party systems were stable over time from the 1920s until 1967, when Lipset and Rokkan published their seminal contribution. Major new parties were a rare phenomenon. In some post-1978 competitive regimes, however, new parties burst on the scene and become important electoral contenders while some established parties fade away into oblivion. The mean vote share of new and young parties in competitive regimes established by 1945 is a meager 2.4% and 8.2%, respectively, compared to means of 13.4% for new parties and 26.6% for young parties in competitive regimes established after 1977.[2] Social scientists need ways to systematically capture and account for these differences.

With this paper, we hope to make three contributions. First, as already noted, we introduce the concept of extra-system volatility and the vote share of new parties. We argue they are useful complements to the conventional focus on total volatility. Second, we present information on volatility, extra-system volatility, the vote share of young parties, and within-system volatility in 58 countries for a long period of time, beginning 1945 or the inauguration of a country's most recent competitive regime, whichever came later. To the best of our knowledge, this is the most comprehensive dataset of electoral volatility that has been compiled. The historic and geographic scope of the dataset is

[1] This is not to say that extra-system volatility is driven exclusively by voters' preferences. Elite decisions to form new parties are an essential part of extra-system volatility. Ultimately, however, voters make the decision to cast the ballot for a new entrant to the system or for a previously existing party.

[2] These means are based on individual observations (electoral periods). N=271 for new parties and 258 for young parties for competitive regimes established by 1945.

useful for an empirical mapping, and also for analyzing the causes of volatility. Third, we attempt to explain cross-national and over-time differences in extra system volatility and the vote share of young parties.

The Supply of and Demand for New Parties

Competitive political regimes have electoral markets. In almost all competitive regimes, almost all politicians band together to form parties. Parties provide information shortcuts to voters; they form a brand name (Downs 1957; Hinich and Munger 1994). Parties also offer politicians organizational resources and organizational capacity within legislatures (Aldrich 1995). However, politicians do not always believe that it is to their advantage to remain in an existing party. Under some circumstances, it is more attractive to run as independents or to join a new party.

In principle, either ideological/programmatic or pragmatic electoral considerations can motivate politicians to move outside the existing parties. If a politician is highly committed to some programmatic or ideological principles, she might seek election outside the existing parties even if this move adversely affects her electoral prospects. We assume, however, that when most politicians decide to form a new party or run as independents, it is because they believe that there is an electoral advantage to doing so. That is, we assume that electoral viability is an important concern to politicians when they decide to exit their existing parties and create a new one. This assumption allows for the possibility that the politicians are also motivated by programmatic issues when they leave their existing party and join or form a new one.

We theorize that three factors influence politicians' willingness to undertake the effort to form a new party. First, situations in which there is widespread disgruntlement with existing parties should be favorable to encouraging politicians to abandon their parties and create (or join) a new party. In these situations, existing party labels can become more of a liability than an asset. Poor governmental performance tends to discredit the parties that have governed, with a potential for spillover to other parties as well. Similarly, notorious corruption among public officials is likely to generate disgruntlement with the existing parties.

Second, following Gunther (2005) and Mainwaring and Zoco (2007), we hypothesize that the historical time period during which competitive political regimes emerged influences the degree to which parties are central actors in organizing political campaigns, and therefore influences the value of existing party labels to politicians. Parties in post-1978 democracies are less dominant in structuring democratic politics than parties in the emerging democracies of the late 19th and early 20th centuries (Pizzorno 1981; Schmitter 2001). Democracies that were created by the early 20th century had strong party organizations, and most voters had strong attachments to parties. These strong attachments helped forge stable patterns of party competition. Even as democracy has changed over generations, large numbers of voters remain relatively loyal to parties, creating considerable stability at the aggregate level. In later emerging competitive regimes, candidates for executive positions appeal for votes through television and have less need to build parties. Under these circumstances, voters are less likely to develop lasting loyalties to parties, and the party system is likely to be more open to new contenders.

If this argument is correct, then the time when a competitive political regime was inaugurated should have an effect on extrasystem volatility and on the vote share of

young parties. Most long-established competitive regimes should have low extra-system volatility from the outset. Most newer competitive regimes should continue to have high extra-system volatility even over time. This is a congenital theory of the stabilization of interparty competition and of the electoral space for new parties: when parties were born is decisive for stabilizing interparty competition and for limiting possibilities for new contenders.

Third, some institutional rules make it easier for political entrepreneurs to create electorally viable new parties. Permissive electoral rules such as high district magnitudes should make it easier for new parties to emerge and fare well. Because presidential systems personalize the vote for the head of government, they might make it easier for new parties to win electoral inroads. Public financing of parties might level the playing field and give new contenders greater opportunities.

Because we are interested in the electoral success of new parties and not merely in their emergence, our analysis focuses on the demand (voter) side as well as the supply side (i.e., politicians' decision to form a new party) of the electoral market. That is, we need to consider both politicians' willingness to form new parties and voters' willingness to support them. We hypothesize that the same factors that influence politicians' decisions to form a new party will also be fundamental in voters' electoral choices.

First, voters should be more likely to abandon existing parties when governing performance is poor. Second, the historical moment when political regimes form should affect voters as well as politicians. Before television was an important means for transmitting campaign information, politicians needed to develop personal or organizational ties to voters. Because of the material and symbolic resources that parties offered, voters became tightly connected to parties. In later emerging competitive regimes, politicians can use television as a way of partially replacing party organizations to reach mass audiences. Because party identities are weaker, voters are less likely to remain loyal to their party (Gunther 2005).

Third, just as formal institutional rules should affect politicians' willingness to take on the costs of organizing a new party, so should they affect voters' strategic electoral choices. Voters should be more likely to support a new party that is electorally viable than a pure "spoiler." Because electoral viability depends somewhat on the institutional rules of the game, these rules should affect voters' electoral choices.

Measuring Extra-System Volatility and the Vote Share of Young Parties

We have two primary dependent variables: 1) extra-system volatility, or the share of the lower chamber vote won by *new* parties; 2) the share of the lower chamber vote won by *young* parties, which we operationalize as those that have competed for ten years or less. We also have two secondary dependent variables: 3) total volatility; and 4) within-system volatility, which is the share of the vote transferred from one previously existing party to another.

The biggest difference between our object of study and most of the sizable literature on the emergence of new parties (e.g., Hug 2001, Tavits 2008b) is that, from our perspective, the emergence of new parties becomes interesting only if these parties win a meaningful share of the vote. It is not party emergence per se, but rather the electoral fate of these parties, that is important for the dynamics of party competition.

In addition, this literature generally posits that politicians create a new party for programmatic reasons—the existing parties do not pay enough attention to some issues—

and that voters chose a new party for programmatic reasons. The assumption that programmatic considerations drive party entry might be correct in the context of the advanced industrial democracies, but we are leery of extending it to all countries with reasonably free and fair elections. In some contexts, politicians create a new party primarily as a vehicle to power. If Hugo Chávez had primarily been motivated to compete for the Venezuelan presidency for ideological reasons, i.e., because he was to the left of the two parties that dominated electoral competition between 1968 and 1988, he could have joined one of the two existing leftist organizations, Causa Radical or MAS. If Venezuelan voters had been seeking a party option to the left of the two previously dominant parties, they could have supported these two leftist parties. A diffuse but powerful popular sentiment that the entire system had failed and the reality that Chávez represented something dramatically different, not only programmatically but equally important in terms of his populist style and fiery rhetoric, are keys to understanding his eruption on the scene in the 1998 elections. More broadly, understanding the vote share of new and young parties exclusively in programmatic terms is misleading for many post-1978 competitive regimes.

Case Selection and Variance in the Dependent Variables

We include all countries with at least 1,000,000 inhabitants that as of 2006 had experienced at least four consecutive lower chamber elections when the country's Polity score was 2 or higher.[3] A Polity score of 2 or higher usually ensures that elections are reasonably free and fair. Authoritarian regimes' control of elections favors the governing party and tends to limit electoral volatility, so it is usually misleading to compare electoral volatility between democratic and authoritarian regimes. We limit the analysis to countries with at least 1,000,000 inhabitants because work on electoral volatility requires proper coding of party mergers, schisms, changes of name, and coalitions. It is more difficult to find this information for very small countries, and it is harder to find experts who can help with judgments about these issues. Some minimum number of elections and years is needed to compare the congenital and age theories (discussed below) of party system stabilization and of openness to new contenders. This is why we limited the case selection to countries that had experienced at least four consecutive reasonably free and fair elections.

These criteria generated a set of 58 countries with 585 electoral periods. Table 1 reports total volatility, extra-system volatility, within-system volatility, and the vote share for young parties for the lower chamber for these 58 countries. The table is organized from lowest to highest extra-system volatility. The data are based on valid votes, leaving aside null and blank votes. Table 1 includes all post-1945 elections since the inauguration of the most recent competitive regime.[4] The beginning year of our analysis is 1945 because of the difficulty of finding the data for some independent variables for

[3] See Gurr et al. 1990 and Jaggers and Gurr 1995 on the Polity scores. They coded scales of institutionalized democracy and institutionalized autocracy. Both scales range from 0 to 10. We subtracted the autocracy score from the democracy score, thus creating a scale from –10 (highly authoritarian) to 10 (very democratic). Polity codes Iceland's competitive regimes as beginning in 1918, but we used 1944, the year of independence.

[4] We were not able to find complete electoral data for Benin and Mauritius, so we include partial results for those two countries.

earlier years. The authors can provide details about coding rules for party mergers, schisms, coalitions, and mixed electoral systems.

Table 1

Table 1 also shows the year of inauguration of the current competitive regime. To operationalize the inauguration of a competitive regime, we again used a Polity score of 2 or higher on a continuous basis. This threshold does not indicate the existence of full democracy, but it requires a competitive political regime.

The mean electoral volatility for the 585 electoral periods is 16.6%, and for the 58 countries the mean is 22.7% (using the country, not the electoral period, as the unit of analysis). The substantial difference between the mean for the 585 observations and the mean for the 58 country averages reflects the fact that the competitive regimes that have had more elections also have had lower volatility Mean extra-system volatility is 5.8 for each electoral period and 9.5% at the country level. For the average country, 42% of total electoral volatility represents transfers to new parties and 58% is within-system volatility. The percentage of total volatility transferred to new parties varies considerably, from 3% in the US to 81% in Taiwan. The mean vote share won by young parties was 18.4% for the 58 countries and 12.6% for the 539 observations.[5] In many countries, the mean share of the vote won by young parties exceeded mean total volatility.

The cross-national differences in the country means for the dependent variables are huge. Mean extra system volatility ranges from 0.1% (the US) to 41.8% (Benin), and the mean share of the vote won by young parties ranges from 0.7% (the US) to 65.7% (Poland). Mean extra system volatility is therefore 400 times greater in Benin than in the US. Party systems such as the US's pose huge barriers to the success of new entrants, while new competitors have a much easier time achieving success in many other systems.

Correlations among total volatility, extra-system volatility, and the vote share of new parties are high, but well below 1.00. The bivariate correlation between total volatility and extra-system volatility for the 585 electoral periods is .74 (two-tailed). The bivariate correlation between total volatility and the share of votes won by young parties for 540 electoral periods is .65. Finally, the correlation between extra-system volatility and the share of the vote won by young parties is also .65, again based on 540 electoral periods. All three correlations are significant at $p < .001$.

Notwithstanding these high correlations, examining extra-system volatility and the vote share of young parties often suggests a very different picture than total volatility. Jamaica has approximately average (for our dataset) total volatility (14.7%) but scores exceedingly low for extra-system volatility (1.0%) and the vote share of young parties (1.2%). The same two parties have dominated Jamaican elections every election since independence in 1962 except in 1983, when the People's National Party did not run. El Salvador is also a case of average total volatility (17.8%) but with a much higher vote share of young parties (34.1%), reflecting the entrance of a major new competitor, the leftist FMLN (Frente Farabundo Martí para la Liberación Nacional), into the party

[5] The number of observations for the share of the vote won by young parties is 540 because we record a score for this variable only in the second electoral period after the inauguration of a new competitive regime. In the first electoral period, all young parties are new parties.

system in 1994, and the parallel withering of the former governing party, the Christian Democrats (PDC) after 1989. The entrance of the FMLN and the near exit of the PDC profoundly changed party competition. Although the two countries are very close in total volatility, El Salvador's vote share of young parties is thirty times greater than Jamaica's. Jamaica's party system has been closed to anything but miniscule new entrants; El Salvador's has had a highly successful new entrant whose emergence radically altered party competition. The similarities in total volatility conceal these important differences.

Hypotheses and Measurement of Independent Variables

We theorized that party systems' openness to electorally successful new and young parties depends on 1) governmental performance; 2) the timing of the foundation of the competitive regime; and 3) the institutional rules of the game. We also add some control variables. To simplify the prose, we present the hypotheses in terms of extra-system volatility, but the same logic applies to the vote share of young parties.

Government Performance

Poor economic performance can adversely affect the electoral fortunes of governing parties (Remmer 1991; Roberts and Wibbels 1999) and hence boost electoral volatility. It could also produce dissatisfaction with all existing parties and therefore boost extra-system volatility and the vote share of young parties.

H1: Low economic growth fosters high extra-system volatility. We measured economic growth with change in per capita GDP from the year of the first election in the electoral period to the year before the second election. The coefficient should be negative; higher growth should produce lower volatility. GDP per capita growth is based on the World Bank's *World Development Indicators* for 1961-2006 and on Penn World Tables for 1951-60.

H2: High inflation fosters high extra-system volatility. High inflation, especially at the magnitude many Latin American countries experienced in the 1980s and early 1990s, can produce dissatisfaction with all existing parties and facilitate the rise of new parties. We measured mean annual inflation for the electoral period from the year of the first election in the electoral period to the year before the second election. We used the natural log of inflation because we expect a nonlinear effect.[6] The hypothesized coefficient for inflation is positive. For most countries, data for inflation come from Mitchell 1998 for 1945-60; Bruno and Easterly for 1960-94; and IMF (2008) for 1995-2006.

H3: Increasing inflation fosters high extra-system volatility. Voters might take into consideration not only the level of inflation but also the change. If government policies result in escalating inflation, voters might punish the governing party and be willing to support new contenders.

This variable measures the difference between the natural log of inflation in the first and penultimate years of the electoral period. For example, for the 1992-1996 electoral period in Taiwan, we took the log of inflation in 1995 minus the log of inflation

[6] It is not possible to calculate a log from a negative value. To minimize the number of missing cases, we assume that inflation below 1% per year including deflation has an impact on electoral volatility that is indistinguishable from that of an inflation rate of 1%. We recorded all such cases as having a logged inflation of 0.

in 1992. Because the first and penultimate years of an electoral period are the same when elections take place in consecutive years, we lost 30 observations. When two elections were held the same year, for both elections we used the difference between the log of inflation in the year before these two elections and the log of inflation in the year of the immediately previous election.

H4: A perception of widespread corruption fosters high extra-system volatility. Existing literature indicates that corruption has corrosive effects on the legitimacy of parties and even democracy (Seligson 2002). Therefore, we hypothesize that a perception of widespread corruption opens the door for new parties.

The World Bank Governance Indicator (Kaufmann et al. 2008) for control of corruption effectively captures perceptions of corruption. We average the World Bank Governance Indicators from the first year of the electoral period to the penultimate year. The first data point is 1996, and the most recent is 2007. The country coverage includes all 58 countries in our dataset.

The Congenital Theory of Party System Stabilization

H5: Extra-system is lower in democracies that were inaugurated earlier.

We presented the logic behind this hypothesis above. We measured H5 with the natural log of the number of years from the birth of democracy until 2006 because we expect a diminishing effect over time.

Institutional Hypotheses

Formal institutional rules should affect both politicians' willingness to create a new party and voters' willingness to support it.

H6: Extra-system volatility increases as party system fragmentation increases. A fragmented party system indicates a permeable electoral market in which many contenders can win a meaningful share of voters. Conversely, low fragmentation is an expression of a closed electoral market. We hypothesize that it will be easier for new parties to make inroads in a more permeable electoral market.

We measured party system fragmentation with the effective number of parties (ENP) (Laakso and Taagepera 1979), measured in votes. The ENP in the first of the two elections that constitute an electoral period is the value for that observation. If H6 is correct, the coefficient for ENP should be positive.

H7: A higher district magnitude fosters higher extra-system volatility. A high district magnitude (the number of seats per district) should make it easier for new competitors to win seats (Cox 1997: 203-221; Taagepera and Shugart 1989: 112-125). Conversely, single member districts and other systems with low magnitudes set a high barrier for new entrants. The effects of district magnitude operate partly through their impact on the effective number of parties (H3), but district magnitude might have an independent effect on our dependent variables.

Our measurement is based on the mean effective magnitude (Taagepera and Shugart 1989: 126-141). For mixed systems (Bolivia, Hungry, Japan, Mexico, Romania, Russia, and Venezuela 1993-98), we took a weighted mean based on the percentage of seats allocated in the two systems and the average magnitude of seats allocated via proportional representation.

The effects of increases in district magnitude on the electoral market are typically high at low values and diminish as magnitude increases. Therefore, we use the natural log form.

H8: A presidential or semi-presidential system makes it easier for new parties to win votes. In presidential and semi-presidential systems, individuals can more easily become head of government without having the backing of a major party. This institutional arrangement might make it easier for an individual to create a new party en route to winning executive power. Parties might dominate the route to executive power less than they do in parliamentary systems, making it easier for a new party to succeed.

In presidential or semi-presidential systems (coded as 1), the head of government has a limited term in office and is elected through direct popular vote or through an electoral college that does not have the powers to overlook electoral results. Parliamentary systems and hybrid systems in which there are both a president and a prime minister are coded 0 if the presidents' powers are considered ceremonial or limited in scope.

H9: Public financing of parties should make it easier for new parties to win votes. Public financing could level the playing field, reducing the advantages of established parties. We coded 0 in cases of no public funding of political parties or if public funding was available in one election of the electoral period and 1 if public funding was available for parties for *both* elections of the electoral period.

Control Variables

H10: Extra-system volatility diminishes over time. In a classic article, Converse (1969) argued that as individuals aged, their partisan attachments became stronger. He argued that the length of support for a party and of exposure to elections explained deepening attachment over time to parties. By implication, newly established party systems would become more stable over time as voters had more time to identify with parties. Some authors have argued that post-communist regimes are similarly encouraging the growth of partisanship (see Brader and Tucker 2003; cf. Kitschelt et al. 1999: 96). In addition, one might expect that with the passage of time parties would win over some relatively stable clientele groups, routinize their electoral appeals, and build a more stable base. If this hypothesis is correct, then new and young parties should find it harder to win electoral support as a competitive regime becomes older. Other research, however, has cast doubts that party systems become more stable over time (Bielasiak 2002; Mainwaring and Torcal 2006; Mainwaring and Zoco 2007; Rose and Munro 2003; Shamir 1984: 49; Sikk 2005).

We measure time with the number of years from the inauguration of a competitive regime until a given election in that country. For example, if democracy was inaugurated in 1983, in 1991, the number of years since the inauguration of democracy is 8. We expect the effect of time on the stabilization of electoral competition to diminish after about thirty years so we imposed an upper limit of 30 on this variable. Whereas the independent variable for H10 (Age of democracy) changes from one electoral period to the next, the independent variable for H5 (Birth Year of Democracy) is constant for all electoral periods for a given country. If H10 is correct, the coefficient for Age of Democracy should be negative; as the number of years since the inauguration of democracy increases, volatility should decrease.

H11: Extra-system volatility is lower in competitive regimes with a higher percentage of the labor force employed in manufacturing, mining, construction, and transportation. This is a structural theory about the stabilization of interparty

competition. Most individuals in traditional blue-collar activities work have a common work space and experience with other employees. This work place experience might foster stronger allegiances to political parties that represent workers. In turn, strong allegiances to parties are conducive to greater stability in the party system and make it more difficult for new parties to succeed electorally. Conversely, individuals in the informal sector might be less likely to establish a partisan linkage because of the absence of organizational influences in the work place. Because large informal sectors are associated with a low share of the labor force in manufacturing, mining, construction, and transportation, this is a second structural reason for H11.

To fill in some gaps in our series, we used linear interpolation, which added 310 missing observations.

H12: Extra-system volatility is lower in competitive regimes that have higher union density (the number of unionized workers divided by the total number of paid employees). According to Bartolini and Mair (1990: 231-238), strong "organizational encapsulation" (i.e., strong linkages between voters and parties via organizational attachments) favors party system stability. Organizational encapsulation creates bonds between citizens and parties, hence promotes stability in interparty competition and should lower extra-system volatility. They include union density as one of their measures of organizational encapsulation.

Table 2 shows the descriptive statistics for the dependent and independent variables. Electoral periods (the period from one election to the next) are the unit of observation; each electoral period in a country is one observation. A complete list of sources for all data is available from the authors.

Table 2

Methods, Results, and Interpretation

We estimate our models through Generalized Estimating Equations (GEE), an estimator that is appropriate for panel data when the goal is to obtain population-averaged estimates, as opposed to a situation in which the goal is to obtain cluster-specific –that is, country-specific– results (a goal best achieved by conditional models such as random effects and fixed effects) (Zorn 2001). GEE models are appropriate for data sets with temporally correlated errors and with a larger number of units than time periods (ours contains 58 countries and a mean of 10.1 electoral periods per country) (Beck 2001, 273-4). Theoretical considerations led us to choose an autoregressive correlation structure (AR[1]): we expect each of our dependent variables to be positively correlated over time, and we also expect this correlation to be larger for consecutive elections than for those that are farther apart in time. The AR(1) specification has the additional advantage of not demanding too much from a relatively small data set (only one ρ parameter has to be estimated). Because there is always some uncertainty about whether the most appropriate correlation structure was chosen, we ran the models with semi-robust standard errors, which are valid even if the assumed structure is incorrect, and with the Stata option "force", which includes in the calculation observations that are not equally spaced in time. There is clearly sufficient within-country variance in our dependent variables to treat each electoral period as a legitimate observation.

Table 3 shows the results with the seven independent variables for which we have almost complete data. The data for change in inflation (H3), the percentage of the economically active population (EAP) in manufacturing, mining, transportation, and

construction (H11), and union density (H12) are missing for a relatively small number of electoral periods. Accordingly, in Table 4 we add these three variables. Later we add the independent variables for public financing of parties (H9), which has 390 observations, and control of corruption (H4), which has only 140 observations.

Tables 3 and 4

The results for the first seven independent variables are quite consistent across Tables 3 and 4.

H1: As hypothesized, poor economic growth boosts total volatility, extra-system volatility, and the vote share of young parties. Thus, poor economic performance reduces the stability of aggregate electoral results and increases the ability of new parties to make electoral inroads.

The effects of poor growth are sizable but not huge in most models. In Table 3, each increase of 1% in per capita GDP growth generates a predicted decrease of 0.6% in extra-system volatility, 0.5% in the vote share of young parties, and 0.8% in total volatility. The effects are greater in Table 4. With these more fully specified models, poor economic performance thus contributes to high volatility generally (Madrid 2005; Remmer 1991; Roberts and Wibbels 1999; Tavits 2005) and to opening space for new and young parties.

Poor growth performance has a larger effect on extra-system volatility than on within-system volatility, indicating that it opens the doors to new competitors. In fact, in both Tables 3 and 4, the effect of growth on within-system volatility is insignificant. When growth stalls, voters do not confine their disgruntlement to the governing party; they are more likely to turn to new and young parties.

H2 and H3: Against expectations, neither inflation nor the change in inflation was statistically significant in any of the models in Tables 3 and 4. The negative finding for inflation is consistent with Madrid (2005) and Roberts and Wibbels (1999) for Latin America, and with Mainwaring and Zoco (2007), but contrary to the findings of Tavits (2005) for post-Communist Europe.

H5: In these models, Birth year of democracy has a consistently powerful impact on extra-system volatility the vote share of young parties, and total volatility, thus supporting the arguments of Gunther (2005) and Mainwaring and Zoco (2007) about the critical importance of when parties were formed. To show the substantive effects of Birthyear of democracy, Table 5 simulates increases in the number of years from the inauguration of the competitive regime until 2006 from 10 to 11 years, 20 to 21, 50 to 51, 100 to 101 and 200 to 201. We start at 10 and finish at 200 to remain within the limits of our real data, in which Birthyear of democracy ranges from 12 to 206. We simulate extra-system and total volatility and the vote share of young parties using the coefficients from Tables 3 and 4. Extra-system volatility decreases by a quarter of a percentage point (-.30) when years since the birth of democracy goes from 10 to 11, by half of that (.15) when we go from 20 to 21 years, and so forth. Total volatility is more responsive than extra system volatility to Birthyear of democracy. But both are substantial, as just one additional year of experience with democracy reduces volatility by non-trivial amounts.

Table 5

H6: A higher ENP facilitates greater extra-system volatility and a higher vote share of young parties in both Tables 3 and 4. The substantive effect is powerful, especially with the vote share of young parties. In Table 3, an increase of 1 in the

effective number of parties produces an increase of 1.8% in a country's predicted extra-system volatility and of 3.1% in the share of vote of young parties.[7]

ENP is not significant for within-system volatility in Table 3 or 4. The greater impact of the effective number of parties on extra-system volatility and the vote share of new parties suggests that a fragmented party system is particularly important in facilitating the success of new and young parties. With a more restricted offer of party options, at the aggregate level, voters are more likely to turn to an established contender when they defect from their previous electoral choice.

H7: Surprisingly, district magnitude does not have an impact on any of the four dependent variables in either Table 3 or Table 4. The correlation between district magnitude logged and ENP is modest at .33 (the correlation is even weaker, at .13, with the unlogged version of district magnitude), so the null effect is not overwhelmingly a product of multicollinearity.

H8: Presidentialism had no statistically significant impact on any of the four dependent variables in Tables 3 or 4.

H10: Years of democracy fails to achieve significance for all four dependent variables in Tables 3 and 4. The likelihood of electoral success of new contenders is not affected by how long the regime has been in existence. As competitive regimes age, the vote share of new and young parties remains constant on average, contrary to what one might expect based on Converse's (1969) theory about the stabilization of partisan identities over time.

In combination with the findings for H5, this result means that competitive regimes that were established early in the world history of democracy had high barriers to new entrants at least by 1945. The joint findings of H5 and H10 also indicate that on average, party systems in later emerging competitive regimes were open to new competitors from the outset, and that this openness does not on average diminish over time.

It seems counterintuitive that as a competitive regime ages, and as citizens have more time to develop partisan linkages, electoral competition does not become more stable and thereby make it more difficult for new parties to succeed electorally. Our interpretation of this finding is that in later democratizing countries, the positives and negatives of more extended party competition on the development of stable partisan loyalties offset one another. Converse's argument that time would allow for the development of partisan identities makes intuitive sense. In practice, in many post-1978 competitive regimes, citizens became more and more disaffected with parties because of government failures (Mainwaring 2006). Parties and politicians in these low quality competitive regimes engage in predation and patrimonial practices. Citizens feel defrauded by politicians and parties, and they are more likely to turn to new options. Sensing the palpable citizen discontent, politicians are more willing to take the plunge and form (or join) a new party.

Political scientists long expected that the competitive electoral market would work in some basic sense: representatives would deliver some acceptable combination of public goods, constituency service for the local community, and private benefits.

[7] Bartolini and Mair (1990: 131-145), Pedersen (1983), Roberts and Wibbels (1999), and Tavits (2005) also found an impact of ENP on total volatility.

Otherwise, they would get voted out of office. This combination of goods would stabilize the electoral market; citizens would develop allegiance to the parties that offered them the most attractive combination of benefits. In many post-1978 competitive regimes, however, there is a market failure. Large numbers of voters are disenchanted and disaffected with all existing parties. Rather than developing partisan allegiance over time, they continue to be floating voters if they vote at all. In these contexts, accountability mechanisms systematically fail to generate the supply of public policies and constituency service that makes voters loyal to parties. Citizens get disgruntled with the existing parties and look for new vehicles of representation.

H11: The share of the labor force in manufacturing, mining, transportation, and construction has no impact on extra-system volatility or the vote share of new parties (Table 4). However, a higher share of the labor force in these activities is associated with lower total volatility and within system volatility.

H12: Union density has a significant impact on total volatility, extra-system volatility, and the vote share of young parties (more unionization is associated with less volatility and a lower vote share for new and young parties). The substantive effect is considerable for the vote share of young parties. An increase of 6.5% in union density produces a predicted decrease of 1% in the vote share of young parties. Union density has no impact on within-system volatility. High union density therefore reduces the propensity of voters to switch electoral allegiance to parties outside the established market.

One plausible causal mechanism for the significance of this variable is that countries with strong labor movements tended to have great union density and stronger working class parties. Strong working class parties were historically associated with the more stable party systems of the advanced industrial democracies (Gunther 2005). Workers remained fiercely loyal to parties already within the system.

Many countries with low union density also have high shares of the labor market in the informal sector. These individuals are probably particularly disposed to vote for political outsiders and for new parties—at least that is the popular stereotype, and there is some evidence to back it up. This might help explain why low union density is associated with a high vote share for young parties and with high extra-system volatility.

Control of Corruption and Public Funding

Table 6 shows results adding control of corruption to the seven independent variables used in Table 3. The models are based on only 136 observations because of the lack of observations for the World Bank Governance Indicators before 1996. Given the greatly reduced number of observations, we must be cautious about interpreting the results.

In this small sample, control of corruption is a very powerful predictor. It has the expected negative coefficient (the more control of corruption the lower the vote share of new and young parties). A one standard deviation increase in a country's score for control of corruption produces a very large expected decrease of 9.1% in the vote share of young parties. Control of corruption has only a weekly significant effect on within-system volatility, which indicates that a perception of pervasive corruption pushes people away from the whole system, not just the incumbent party. Most of the other coefficients become insignificant, in part because explanatory power now goes to the new variable and in part because of the smaller N. ENP is the only other variable that achieves conventional levels of significance.

This restricted sample suggests that the vote share of new and young parties is to a large extent explained by state performance factors. Because of the severe reduction in the number of observations, we do not dismiss some earlier positive findings—in particular, the findings that the birth year of democracy and economic performance affect the electoral prospects of new and young parties.

Table 6

Because scores for control of corruption are exceptionally stable over time,[8] we also ran some models with the number of observations increased by 62 (to 198) by extrapolating backwards the scores to 1991. The results were very similar.

H9: We also ran models with the seven independent variables in Table 3 and added public funding. The number of observations declines to 379 for volatility, extra-system volatility, and within-system volatility, and to 356 for the vote share of young parties. The variable had nowhere close to a statistically significant result in any model. To save space, we do not present the results.

The Collinearity between Birth Year of Democracy and Age of Democracy

Although they are designed to test different theories about the openness of the electoral market to new contenders, Birthyear of democracy and Age of democracy are conceptually and empirically related. Their strong association (r=0.95 in the raw form of the variables) hints at this problem. The two variables used in the models, Birthyear of democracy (logged) and Age of democracy truncated at 30 years, have a weaker but still considerable correlation (r=0.70).

Having these two variables in the same model implies some collinearity. Given that Birthyear of democracy has more and more consistent explanatory power than Age of Democracy (a finding similar to Mainwaring and Zoco 2007), we dropped the latter and reran the models. The remaining estimates are more efficient both because of one less parameter to estimate and because of the reduction in multicollinearity. When we ran the models from Table 3 without Age of democracy (results not shown), the standard errors associated with Birthyear of democracy become noticeably smaller in all four models (and the p-values are smaller in three of them, the exception being Vote share of young parties). The value of the coefficient for Birthyear of democracy is somewhat larger in absolute magnitude for Extra-system volatility and somewhat smaller for Share of young parties and Within system volatility. The coefficients for the other independent variables change only very marginally. The results therefore reinforce previous findings.

Robustness Check

Are these findings robust to alternative TSCS estimators? Given the sensitivity of time-series cross-section analysis to different specifications (Wilson and Butler 2007), it is useful to check.

In Table 7, we rerun the model with extra-system volatility as the dependent variable and all seven independent variables with nearly complete information using five different estimators and comparing the results to the GEE estimates. The alternatives used are Beck and Katz's (1995, 1996) panel-corrected standard errors with an

[8] For the 57 countries in our dataset that have a score for corruption in 1996, the 1996 score correlates at .97 with the 2002 score ($p<.001$). Therefore, interpolating back to 1991 seems very safe.

Autoregressive 1 (AR1) process (PCSE_AR1) and with a lagged dependent variable (PCSE+LDV), the random effects estimator (RE), the fixed effects (FE) estimator, and fixed effects with a lagged dependent variable (FE+LDV) (a model advocated by Wilson and Butler 2007 in some situations). Most of the results are robust.

Table 7

H1: GDP growth was significant in all models (marginally so with panel corrected standard errors with a lagged dependent variable, PCSE-LDV). The coefficients are stable across all of the models except for PCSE-LDV.

H2: Inflation does not have an impact in any model.

H5: Time invariant variables cannot be estimated in fixed effects models, so the Birthyear of democracy variable is dropped from both fixed effects models. The finding for this variable is highly robust. In the other three models, Birth year of democracy is again negative and significant, meaning that democracies inaugurated earlier have lower extra-system volatility. The coefficients are very consistent from one model to the next.

H6: In all of the models except panel corrected standard errors with a lagged dependent variable, a higher effective number of parties produced an increase in estimated extra-system volatility.

H7: District magnitude did not have an effect on extra-system volatility in any model.

H10: Age of democracy is (weakly) significant and negative in the fixed-effects model, as it was in the GEE model. Otherwise, it has no impact.

H11: The share of the labor force in manufacturing, mining, transportation, and construction has no impact in five of the six models. The exception is the fixed effects model with a lagged dependent variable.

H12: Union density has an impact at $p<.10$ in four of the six models. The two fixed effects models are the exceptions. In the other four models, the coefficients are very stable.

Conclusion

Although the extensive work on electoral volatility has made important contributions in understanding party system dynamics, it is useful to distinguish between within-system and extra-system volatility. Two countries with similar levels of total volatility can have very different levels of extra-system volatility, signaling divergences in voters' willingness to flee from existing parties and presumable divergent levels of dissatisfaction with the existing parties. Whereas within-system volatility might signal merely a temporary shift from one established party to another, extra-system volatility indicates that voters have turned away from all the established parties. The very membership of the party system changes when new parties come along and capture a meaningful share of the vote.

The distinction between established and new parties and the parallel distinction between within- and extra-system volatility is a useful first step, but these dichotomies are too blunt for some purposes. A party does not transition from new to established the day after its first election. Accordingly, we created an intermediate category, young parties, defined as those that have competed at least once but not more than ten years. The ten-year cut point is of course arbitrary, but somehow capturing the intermediate category is useful.

Both extra-system volatility and the vote share of young parties are useful supplemental ways to measure party system institutionalization. If twenty percent of the electorate transfers their vote from one long-established party to another in a given election, this act does not unambiguously reflect markedly lower institutionalization than complete stability (i.e., 0 volatility) in aggregate voting patterns. If, however, twenty percent of the electorate shifts from an established party to a new one, institutionalization is clearly weaker.

Systems with high extra-system volatility are at the opposite end of the spectrum from "frozen" systems. With high extra-system volatility, voters cast their ballots for a party that did not previously exist. Extra-system volatility thus registers more than a shift from one party to another; it registers a shift away from *all* the existing parties.

Poor government performance as measured by rates of economic growth and by the perception of pervasive corruption opens the doors to new party competitors. In our main explanatory models that include most observations in the dataset, sluggish economic growth has a consistent impact on total volatility, extra-system volatility, and the vote share of young parties in our main explanatory models. With poor economic growth, voters get disgruntled, leading to high extra-system volatility. Poor growth not only produces retrospective voting against the incumbents, but also opens opportunities for entirely new contenders.

Based on a much smaller number of observations, the perception of pervasive corruption also has strong delegitimizing effects on the whole party system. High perceived corruption makes it easier for new parties to win votes.

The analysis based on the full set of observations supports the argument that when democracy was created has a strong influence on the electoral fortunes of new and young parties. In earlier competitive regimes, parties forged strong and enduring linkages to most voters. In the early 20th century, they served as agents of political mobilization, successfully pushed for the incorporation of new citizens into politics, and even offered health and recreational benefits. Voters developed political identities closely connected to their parties. Voter attachments to parties have weakened slightly in recent decades in many of the advanced industrial democracies (Dalton and Waldon 2007), but parties remain crucial organizations in structuring the vote in these countries (see Bartels 2000 on the US).

In many later emerging competitive regimes, political elites have less incentive to invest in party building. Especially for executive posts, politicians can win election by campaigning through the mass media and by employing modern campaign consultants. Strong party organizations are typically less crucial to electoral success. Many politicians have won the presidency running on new (or nearly new) party labels. Presidents Alberto Fujimori of Peru (1990-2000), Fernando Collor de Mello (1990-92) of Brazil, Vladimir Putin of Russia (1999-2008), Hugo Chávez of Venezuela (1999-present), Alejandro Toledo of Peru (2001-06), Alvaro Uribe of Colombia (2003-present) and Rafael Correa of Ecuador (2007-present), are examples. These individuals eschewed building a powerful party organization even after their election. In contrast, in the early decades of our dataset and the first 45 years of the 20th century, there are very few examples of successful presidential candidates who ran on new party labels, except in cases where a major expansion of the electorate enabled new parties to be successful. Presidents who ran on new party labels proceeded to invest in party building.

The fact that well-structured organizations are less essential to electoral victory makes it is easier and more attractive to start a new party. Once a new party is started, it is easier for it to win electoral support. In most later competitive regimes, parties have played a less central role in citizens' lives. Citizens are more willing to shift their vote from one election to the next.

While the Birth year of democracies has a strong impact on our four dependent variables, the age of democracies has little impact (see also Tavits 2008b: 131; Mainwaring and Zoco 2007). Converse (1969) argued that citizens would gradually come to identify more with parties, but in many post-1978 competitive regimes they have instead become increasingly disgruntled with parties. The gradual development of stable linkages between voters and parties depends on conditions that do not exist in most of these regimes.

The effective number of parties also affects all total volatility, extra-system volatility, and the vote share of young parties. A high effective number of parties signals an open electoral market, typically with low entry barriers. In these contexts, it is easier for political elites to split off and risk forming new parties, and easier for voters to believe that their vote will be meaningful if they risk switching to a new party.

Finally, union membership helps stabilize voters' linkages to parties and reduces the likelihood that voters will switch to a choice outside the system.

In sum, competitive regimes born later, high levels of perceived corruption, more fragmented party systems, competitive regimes with worse growth performance, and less unionized labor forces are favorable to the electoral success of new contenders. Older competitive regimes and those with fewer parties, competitive regimes with better performance in stimulating economic growth and in preventing corruption, and more unionized labor forces create daunting barriers to the success of new parties.

Table 1: Mean Total Volatility, Mean Extra System Volatility, Mean Within-System Volatility, and Mean Share of Vote Won by Young Parties, 58 Countries

	Elections Included for Volatility	Year Democracy Was Inaugurated	Mean Volatility	Mean Within-System Volatility	Mean Extra System Volatility	Mean of Vot Young Parties
United States	1946-2004	1800	3.4	3.3	0.1	0.6
Germany	1949-2005	1949	8.0	7.8	0.2	1.9
Honduras	1981-2005	1981	6.8	6.4	0.4	2.5
Sweden	1948-2002	1911	7.9	7.2	0.7	1.8
Jamaica	1959-2002	1959	14.7	13.7	1.0	1.1
Finland	1945-2003	1917	8.0	6.9	1.1	7.4
Norway	1945-2005	1945	11.3	10.1	1.2	2.5
Austria	1945-2002	1945	6.6	5.3	1.3	3.5
United Kingdom	1945-2005	1837	7.6	6.2	1.4	3.6
Ireland	1948-2002	1921	9.5	8.1	1.4	4.5
Australia	1946-2004	1901	6.9	5.3	1.6	4.6
Denmark	1945-2005	1945	11.0	9.1	1.9	8.7
Canada	1945-2006	1867	11.6	9.6	2.0	6.2
Greece	1974-2004	1974	10.8	8.7	2.1	4.2
Netherlands	1946-2003	1946	12.5	10.1	2.4	6.2
Switzerland	1947-2003	1848	7.4	4.8	2.6	7.5
Brazil	1986-2006	1985	19.6	16.8	2.8	10.9
Chile	1989-2005	1990	13.9	11.0	2.9	4.9
Uruguay	1984-2004	1985	15.6	12.6	3.0	4.0
Portugal	1975-2005	1975	16.1	13.0	3.1	5.4
Mauritius	1976-1995	1968	19.3	16.1	3.2	4.2
France	1946-2002	1946	18.1	14.9	3.2	7.9
Belgium	1946-2003	1944	11.7	8.2	3.5	14.2
New Zealand	1946-2005	1857	11.1	7.5	3.6	8.8
Dominican Rep.	1978-2006	1978	33.2	29.5	3.7	12.7
Hungary	1990-2002	1990	30.2	26.0	4.2	8.3
Botswana	1979-2004	1966	11.8	7.4	4.4	10.4
Spain	1977-2004	1976	17.6	13.0	4.6	9.6
Sri Lanka	1952-2004	1948	16.7	11.7	5.0	6.8
Japan	1952-2005	1952	14.1	8.6	5.5	15.2
Malaysia	1974-2004	1971	13.3	6.8	6.5	14.1
Italy	1948-2001	1945	15.4	8.7	6.7	20.6
Argentina	1983-2003	1983	22.5	15.1	7.4	14.7
Mexico	1994-2006	1994	20.6	13.0	7.6	21.4
Israel	1949-2003	1948	20.1	12.5	7.6	17.4
Colombia	1958-2006	1957	15.9	7.9	8.0	12.7
Mongolia	1990-2004	1990	32.2	24.0	8.2	11.7
El Salvador	1985-2006	1982	17.8	8.3	9.5	30.9
Costa Rica	1946-2006	1853	29.9	18.7	11.2	25.4

Papua New Guinea	1977-1997	1975	27.8	16.3	11.5	21.0
India	1951-2004	1950	26.7	13.1	13.6	29.5
Macedonia	1990-2006	1991	38.3	24.0	14.3	21.8
Venezuela	1958-2005	1958	32.9	18.1	14.8	36.6
Poland	1991-2005	1989	45.5	30.0	15.5	36.5
Ecuador	1979-2002	1979	31.9	15.6	16.3	37.3
Taiwan	1992-2001	1992	20.3	3.8	16.5	23.2
Czech Republic	1990-2002	1990	28.5	11.6	16.9	26.5
Philippines	1987-1998	1987	44.8	27.1	17.7	59.9
Trinidad & Tobago	1966-2002	1962	27.3	8.6	18.7	45.8
Turkey	1983-2002	1983	32.7	12.0	20.7	53.8
Bolivia	1989-2005	1982	39.5	18.5	21.0	55.0
Romania	1990-2004	1990	46.5	23.8	22.7	51.2
Bulgaria	1990-2005	1990	39.3	15.5	23.8	34.4
Estonia	1992-2003	1991	44.7	20.9	23.8	46.4
Russia	1993-2003	1992	44.8	20.3	24.5	31.1
Latvia	1993-2002	1991	52.0	26.8	25.2	44.3
South Korea	1988-2004	1988	36.6	9.9	26.7	32.5
Benin	1991-1999	1991	68.3	26.5	41.8	36.1

Table 2: Descriptive Statistics

Variable	No. of observations	Mean	Std. deviation	Minimum Value	Maximum value
Total volatility	585	16.6	14.2	0.4	77.6
Extra-system volatility	585	5.8	10.4	0.0	70.4
Within-system volatility	585	10.7	9.6	0.0	68.4
Vote share young parties	539	12.6	16.4	0.0	86.1
Birthyear of democracy	585	73.3	51.9	12	206
Age of democracy (truncated)	585	22.2	9.7	1	30
ENP	585	4.0	1.8	1.2	15.5
District magnitude	579	16.6	40.3	1	299
GDP growth	582	2.2	2.6	-11.2	11.3
Inflation	581	22.8	128.6	-8.2	2593.1
Presidential system	585	0.37	0.48	0	1
Change in inflation	540			-8149	2152
Labor force	526	35.1	8.9	7.3	63.6
Union density	480	36.8	19.6	2.6	100.0
Public funding of parties	390	0.67	0.47	0	1
Control of corruption	140	0.67	1.14	-1.06	2.40

Table 3 GEE(AR[1]) Models for Total Volatility, Extra-system Volatility, Vote Share of Young Parties, and Within-system Volatility. (coefficients and p-values)

	Volatility	New Party	Young Party	Within-system Volatility
Birth Democracy (ln)	-8.84***	-3.04**	-7.84**	-5.27***
	(0.000)	(0.014)	(0.007)	(0.000)
Age Democracy (Truncated 30yrs)	0.00	-0.07	0.17	0.06
	(0.978)	(0.216)	(0.134)	(0.414)
GDP Growth	-0.81***	-0.65**	-0.48*	-0.18
	(0.000)	(0.005)	(0.052)	(0.228)
Inflation (ln)	-0.13	0.37	0.38	-0.30
	(0.754)	(0.390)	(0.494)	(0.368)
Effective Number of Parties	1.30**	1.79***	3.09***	-0.28
	(0.006)	(0.000)	(0.000)	(0.408)
District Magnitude (ln)	-0.31	-0.38	-0.46	-0.09
	(0.700)	(0.520)	(0.680)	(0.818)
Presidentialism	3.49	1.04	3.58	2.25
	(0.180)	(0.527)	(0.351)	(0.130)
constant	48.87***	13.62**	29.11**	32.16***
	(0.000)	(0.026)	(0.029)	(0.000)
N	572	572	530	572

Table 4. GEE(AR[1]) models for Total Volatility, Extra-system Volatility, Vote Share of Young parties and Within-system Volatility with EAP, Union density, and change in inflation, union density, (coefficients and p-values)

	Volatility	New Party	Young Party	Within-system Volatility
Birth Democracy (ln)	-6.40***	-2.47**	-6.97**	-3.95**
	(0.000)	(0.018)	(0.010)	(0.003)
Age Democracy	-0.09	-0.07	0.01	-0.02
	(0.440)	(0.227)	(0.951)	(0.861)
GDP Growth	-0.91**	-0.67**	-1.06**	-0.25
	(0.002)	(0.018)	(0.001)	(0.150)
Infation (ln)	0.30	0.74	0.88	-0.37
	(0.618)	(0.200)	(0.233)	(0.372)
Inflation Difference (ln)	0.07	0.39	0.23	-0.35
	(0.857)	(0.174)	(0.498)	(0.269)
Effective Number of Parties	1.11**	0.83	3.31***	0.28
	(0.028)	(0.087)	(0.000)	(0.235)
District Magnitude (ln)	0.22	0.31	-0.68	-0.20
	(0.799)	(0.677)	(0.614)	(0.536)
Presidentialism	0.11	-0.87	-0.37	0.99
	(0.948)	(0.580)	(0.908)	(0.468)
Economically Active Population	-0.25**	-0.10	-0.09	-0.15**
	(0.001)	(0.132)	(0.487)	(0.020)
Union Membership	-0.07**	-0.07**	-0.15**	0.00
	(0.040)	(0.029)	(0.032)	(0.845)
Constant	51.60***	20.03**	38.93**	31.76***
	(0.000)	(0.008)	(0.005)	(0.000)
N	410	410	388	410

Note: (p-values in parentheses) *p<0.05; ** p<0.01; *** p<0.001

Table 5. Simulated Effects of Birthyear of Regime on Extra-system Volatility and Total Volatility

	Model	Coefficient of logged Birthyear	Effect of a 1-year increase in age of democracy at an age of…				
			10 years	20 years	50 years	100 years	200 years
Extra system volatility	Table 3	-3.15	-.30	-.15	-.06	-.03	-.02
	Table 4	-2.76	-.26	-.13	-.05	-.03	-.01
Share of young parties	Table 3	-8.33	-.79	-.41	-.16	-.08	-.04
	Table 4	-7.07	-.67	-.34	-.14	-.07	-.04
Total volatility	Table 3	-9.32	-.89	-.45	-.18	-.09	-.05
	Table 4	-6.68	-.64	-.33	-.13	-.07	-.03

Table 6. GEE(AR[1]) models for Total Volatility, Extra-system Volatility, Vote Share of Young parties and Within-system Volatility with Control of Corruption

	Volatility	New Party	Young Party	Within-system Volatility
Birth Democracy (ln)	-0.47	1.72	2.57	0.23
	(0.87)	(0.36)	(0.60)	(0.91)
Age Democracy (Truncated 30yrs)	-0.31	-0.19	-0.10	-0.28
	(0.26)	(0.23)	(0.78)	(0.15)
GDP Growth	-0.65	-0.33	-1.02	0.01
	(0.18)	(0.46)	(0.19)	(0.98)
Inflation (ln)	0.90	1.29	0.16	-0.70
	(0.33)	(0.17)	(0.92)	(0.94)
Effective Number of Parties	1.62	2.21**	2.04	-0.55
	(0.08)	(0.009)	(0.06)	(0.27)
District Magnitude (ln)	0.97	0.12	-0.09	0.97
	(0.26)	(0.82)	(0.93)	(0.21)
Presidentialism	-1.89	-2.35	-4.59	-0.45
	(0.54)	(0.32)	(0.25)	(0.82)
Corruption	-5.05**	-3.37*	-9.06**	02.38
	(.007)	(.01)	(.002)	(.08)
constant	48.87***	13.62**	29.11**	32.16***
	(0.000)	(0.026)	(0.029)	(0.000)
N	572	572	530	572

Note: (p-values in parentheses) *p<0.05; ** p<0.01; *** p<0.001

Table 7 Robustness Check
Dependent variable = extra-system volatility
(Coefficients and p values)

Variable	gee	pcse_ar1	pcse_ldv	re	fe	fe_ldv
ln_birth_d~o	-2.75548	-3.103	-2.52779	-3.11927	0	0
	.008112	.013803	.005448	.055796	.	.
age_demo__30	-.08168	-.076328	.066361	-.085933	-.094915	-.043583
	.095043	.425049	.408865	.15436	.124464	.514082
gdp_growth1	-.689092	-.630869	-.423204	-.547902	-.54105	-.663997
	.006523	.010764	.093274	.000963	.002017	.000255
ln_infl1	.503413	.231985	.325218	.228774	.473044	.537123
	.317958	.657571	.531361	.596503	.317832	.246482
enp	.880818	.906459	.502357	1.5513	1.87372	2.43208
	.064826	.005724	.174628	3.2e-06	2.0e-06	4.3e-09
ln_dm	.103223	.183089	.197815	.37148	.611199	.866841
	.88856	.689412	.553196	.524929	.443222	.26714
eap	-.085015	-.079926	-.015951	.023339	.057691	.120824
	.175241	.330854	.795961	.696718	.381799	.061553
um	-.063778	-.070783	-.067845	-.064678	-.055649	-.033974
	.053031	.019444	.006412	.059973	.170059	.391259
L.new_p			.216942			-.15483
			.106834			.00138
_cons	20.7388	22.3379	13.5396	16.3923	-.941608	-7.23201
	.002159	.000209	.002208	.014667	.82177	.086132
N	437	442	419	442	442	419
r2		.207671	.208395		.092137	.133437

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