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Revisiting Electoral Volatility in Post-Communist Countries: New Data, New Results and New Approaches

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This article provides a detailed set of coding rules for disaggregating electoral volatility into two components: volatility caused by new party entry and old party exit, and volatility caused by vote switching across existing parties. After providing an overview of both types of volatility in post-communist countries, the causes of volatility are analysed using a larger dataset than those used in previous studies. The results are startling: most findings based on elections in post-communist countries included in previous studies disappear. Instead, entry and exit volatility is found to be largely a function of long-term economic recovery, and it becomes clear that very little is known about what causes 'party switching' volatility. As a robustness test of this latter result, the authors demonstrate that systematic explanations for party-switching volatility in Western Europe can indeed be found.

One of the most important ways we can advance the scientific understanding of politics is to continually revisit previous research with new data. Here our goal is to better understand the phenomenon of electoral volatility in post-communist countries. Electoral volatility is a popular topic in the political science literature. Perhaps this should not be very surprising, as volatility is clearly linked to one of the most fundamental issues in political science: stability. Party systems with high levels of volatility can lead to wild swings in policy, open doors to non-traditional parties and candidates, make it harder for states to negotiate treaties and agreements with external actors, and, in some cases, even threaten the stability of democratic regimes. Although political systems with low levels of volatility can be stable and consistent, those with too little volatility may also open themselves to charges of cartelism, where a small cabal of political actors controls the political system and carefully limits access to political power. Either way, there are good reasons to be interested in determinants of electoral volatility.

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However, we suspect that there may be another factor leading to the frequent analysis of electoral volatility: it is easy to quantify, especially because there is near-uniform consensus on how to measure volatility using the well-known Pedersen Index:[1]

$$\text{Volatility} = \frac{\sum_{i=1}^{n} |p_{it} - p_{i(t+1)}|}{2} \quad (1)$$

where n is the number of parties and p_i represents the percentage of votes received by that party in time periods t and $t+1$. Scholars studying consolidated democracies[2] and consolidating democracies in Latin America,[3] Eastern Europe[4] and Africa[5] have consistently used the same concept and metric.

One of the potential pitfalls of a reified variable is that we stop questioning whether it is actually measuring what we think it is measuring, and instead just accept it as an objective fact. This concern is particularly important in the case of the Pedersen Index, because applying the measure outside the realm of stable, established democracies means that the variable is conflating two different political phenomenon that (1) are likely to have different implications for important political and economic actors, (2) ought to be measured differently from one another and (3) are likely best explained using different theoretical arguments.

The first of these phenomena is the volatility that occurs when voters switch their votes between existing parties. This type of volatility (hereafter Type B Volatility) is considered to be a healthy component of representative democracy, and essentially reallocates power between political actors that are already, by and large, a relevant part of the political process. The Pedersen Index, however, also captures a second type of volatility: volatility caused by the entry and exit of parties from the political system (hereafter Type A Volatility). Type A Volatility is much more closely associated with party system instability, and thus can pose very different challenges and problems for anyone trying to interact with political actors. Consider, for example, an investor planning to build a factory. In a country with moderate to high levels of Type B Volatility, the investor can be reasonably confident that he or she has a handle on who the relevant political actors are likely to be over the medium term. Although the current government may be voted out of office, it is usually pretty clear what type of government would replace it. Countries with moderate to high levels of Type A Volatility, however, present an altogether different picture for a foreign investor: this truly is an unstable party system. The actors in power a decade from now may be completely different from those currently in power. Even in more established democracies, higher Type A Volatility could herald the coming of important new issue areas in the political arena, such as the rise of anti-immigration or environmentalist movements.[6] Similar arguments could be made for the concerns of potential international allies or trading partners.

Distinguishing between these two different types of volatility is especially important in post-communist countries, which have seen large numbers of parties come and go in the two decades since the collapse of communism. Somewhat surprisingly, then, we are aware

[1] Pedersen 1983.
[2] Bartolini and Mair 1990; Elff 2007.
[3] Mainwaring and Scully 1995; Roberts and Wibbels 1999.
[4] Lewis 2000; Rose and Munro 2003; Tavits 2005.
[5] Ferree 2004; Kuenzi and Lambright 2005; Lindberg 2007; Mozaffar and Scarritt 2005.
[6] Kitschelt 1995; Meguid 2008.

of only three previous studies that have sought to explain volatility due to new party entry in the region.[7] Sarah Birch breaks down electoral volatility into volatility between existing parties and new parties (she calls this 'replacement volatility') in thirty-two elections through 2001 in twelve post-communist countries.[8] Allan Sikk takes a closely related approach, splitting volatility into two similar categories and then tracking its evolution in nine East European countries from 1990–2000.[9] In the most expansive study to date, Margit Tavits examines the determinants of new party entry and success across forty-four elections from fifteen post-communist countries from 1990–2004; although she does not call this electoral volatility *per se*, she is essentially measuring the same 'new party' volatility as Birch and Sikk.[10] Additionally, Mainwaring, Espana and Gervasoni include elections that took place through 2005 in eight post-communist countries as part of a larger comparative study that examines the causes of volatility across existing parties and due to new party entry (which they call 'extra-system' volatility) in fifty-eight countries.[11]

Here, we augment these earlier studies by examining all pairs of elections that took place in the first two decades of post-communist elections in countries that were ranked 'Free' or 'Partially Free' by Freedom House at the time of both elections. The result is a new dataset that codes Type A, Type B and Total Volatility for eighty-nine election pairs across twenty-one post-communist countries.[12] Using this dataset, we analyse the determinants of volatility across all eighty-nine elections, as well as across subsets of the data that correspond to just the elections included in the earlier Birch, Sikk and Tavits studies; we exclude the Mainwaring et al. study countries because they are analysed as part of a larger dataset. When we use just the elections included in these earlier studies, we are able to identify numerous statistically significant predictors of variation in electoral volatility. However, when we use the full dataset that includes all eighty-nine election pairs, we come to the startling conclusion that most of these results disappear, thus suggesting the importance of revisiting assumptions about electoral volatility in post-communist countries.[13]

We can make a number of conclusions on the basis of our new analses. First, only one variable has a systematic effect on the level of Type A (entry and exit) Volatility: current gross domestic product (GDP) as a ratio of GDP in 1989. Secondly, no variables have a statistically significant affect on Type B volatility in post-communist countries; this effect holds whether we use our full dataset or the subset of elections from the Birch, Sikk or Tavits studies. Thirdly, statistical analyses of Total Volatility (the Pedersen Index), produce results

[7] We know of none that has examined the related question of old party exit.

[8] Birch 2001; for an expanded analysis, see Birch 2003.

[9] Sikk 2005.

[10] Birch 2001; Birch 2003; Sikk 2005; Tavits 2008.

[11] Mainwaring, Espana, and Gervasoni 2009.

[12] In the course of constructing our dataset, we discovered that Freedom House, based on their own criteria of coding countries with a combined score of political and civil rights of higher than 11 as 'not free', incorrectly labeled three post-communist country-years as 'partially free' that should have been labeled as 'not free'. The results presented in this article are robust to including the three extra election pairs in the analysis.

[13] We want to be perfectly clear that this finding is not in any way intended to imply that we have concerns with the quality or accuracy of the analysis conducted in the original studies. In fact, this is why we use our own data: we are explicitly not attempting a standard replication analysis, which would involve using the data from the original studies. Instead, our focus is on what happens when the *number of elections* in the analysis increases; therefore we need one dataset and one specification for the model to allow us to isolate the effect of changing the number of elections included in the analysis.

that closely resemble the results for Type A Volatility and look little like the Type B Volatility results; again, this holds for our full dataset as well as the subset of elections from the previous studies. Taken together, these last two points lead to an unmistakable conclusion: what we know about electoral volatility in post-communist countries to date is almost entirely driven by volatility due to new party entry and old party exit; we know little about what causes swings in votes between existing political parties. Furthermore, this may not be a failure of analytical research: it may simply reflect the political reality that political systems in new democracies are still equilibrating.

We make two additional important contributions beyond our statistical analysis. First, we provide a detailed set of coding rules for *how* to code our disaggregated measures of the Pedersen Index. If readers share our belief that the Pedersen Index conflates two different phenomena, then these coding rules should be of use far beyond the context of post-communist countries – especially in new democracies and still-evolving party systems. Secondly, in addition to analysing the sources of electoral volatility in post-communist countries, we also provide a general description of patterns of volatility in post-communist countries, which, in conjunction with the release of our data, should prove to be a valuable resource for those interested in the contours of party system development in the region.

We proceed as follows. We describe our coding rules and explain our coding decisions, before presenting our general description of volatility in post-communist countries. We then present the results of our analyses of determinants of Type A, Type B and Total Volatility, varying the number of elections in each analysis to coincide with the cases in the Birch, Sikk and Tavits studies as well as our own expanded dataset. As one of our major findings is that we can find no systematic predictors of Type B volatility in any of the post-communist datasets, we then replicate our analysis using an entirely separate dataset of ninety-five elections from nineteen West European countries during the same period to demonstrate that our null results regarding Type B volatility in post-communist countries are not simply the result of how we coded Type B Volatility. We then conclude with some final observations.

MEASUREMENT STRATEGY

In this section, we present the conceptual ideas underlying our coding of Type A and Type B Volatility, as well as the specific formulae we use to code these variables; the various coding issues that arise in applying these formulae are discussed in further detail in the following section.[14]

To measure Type A and Type B Volatility, we use the Pedersen Index as a starting point and then disaggregate it into (1) a Type A Volatility measure that captures volatility from party entry and exit and (2) a Type B Volatility measure that captures volatility among stable parties that contest both elections. More technically, Type A Volatility is defined as:

$$\text{Type A Volatility} = \frac{\left|\sum_{o=1}^{n} p_{ot} + \sum_{w=1}^{n} p_{w(t+1)}\right|}{2} \tag{2}$$

[14] As mentioned previously, we hope these sections will serve as an important contribution in their own right, as we are aware of no previous effort to describe in such detail how to code volatility due to new party entry and exit. It is our intention that these rules be sufficiently clear to allow scholars to directly apply them to coding Type A and Type B Volatility in other regions of the world.

where o = old disappearing parties that contested only the election at time t and w = new parties that contested only the election at time $t + 1$. Therefore, this measure only picks up volatility that is caused by new parties entering the political system – which by definition will not have had any voters in the previous election – and old parties exiting the political system, which by definition will not have any voters in the current election. (As is the case with the Pedersen Index, we divide the measure by two to ensure that the total possible Type A Volatility score – if all votes in the current election are won by parties that did not contest the previous election – would be 100 per cent.) Defining when a party has entered or exited the political system is complicated for reasons upon which we expand in the following section. However, the basic tool we utilize to address this challenge is to employ a threshold of the vote below which a party is considered not to be 'in the political system'. Thus if a party was below this threshold in the previous election but above it in the current election, the party is considered 'new'. Similarly, if the party was above the threshold in the previous election but below it in the current election, it is considered to have left the party system. For reasons we discuss in the following section, we employ 2 per cent as our threshold in this study, but there is no reason that other researchers could not choose a different threshold.[15]

In contrast to Type A Volatility, Type B Volatility is defined as:

$$\text{Type B Volatility} = \frac{\sum_{i=1}^{n} |p_{it} - p_{i(t+1)}|}{2}, \text{ among all stable parties.} \quad (3)$$

Readers will notice that Equation 3 is essentially the same as Equation 1 (the Pedersen Index), except for the caveat that it is only calculated among 'all stable parties'. Stable parties are defined here as those above the threshold for inclusion in the political system at the time of both the current election and the previous election. Therefore if all parties in a given country (defined here as all parties that receive 2 per cent or more of the vote) stay the same across two consecutive elections, then the Pedersen Index will yield the same score as our measure of Type B Volatility. If any new parties have entered or exited the political system, then our measure of Type B Volatility will differ from the Pedersen Index.

By definition, therefore, the sum of Type A Volatility and Type B Volatility is equal to the traditional Pedersen Index (Equation 1). For the remainder of this article, we will refer to this measure as 'Total Volatility':

$$\text{Total Volatility} = \frac{\sum_{i=1}^{n} |p_{it} - p_{i(t+1)}|}{2} = \text{Type A Volatility} + \text{Type B Volatility} \quad (4)$$

CODING VOLATILITY

One of the great, and often under-discussed, challenges of any study of electoral volatility – but particularly one that includes new democracies – is coding the volatility. Unlike in consolidated two-party systems such as the United States, in which measuring the change in support for the Democrats and Republicans between two elections is a trivial matter of arithmetic, in unstable multiparty systems, such as those found in the post-communist world, scholars face a vast array of coding decisions before the arithmetic can begin.

[15] It is worth noting that even standard applications of the Pedersen Index must adopt an implicit threshold as well in deciding how many parties to include in the calculation of the index.

These challenges include dealing with the omnipresent 'other' category in reported election results, defining a new party as opposed to a successor party, identifying party name changes and handling parties that either split or merge. In an ideal world with perfect and complete election records, many of these coding challenges would be moot. For any given pair of elections we could strictly divide parties into two categories: those that continue to exist across elections (stable parties) and those that contest only one election (entering and exiting parties). Similar to consolidated two-party systems, the coding decisions would then be reduced to simple arithmetic. In the context of early elections in new democracies, however, matters are rarely that straightforward, and complete election records are elusive and inconsistent.

Our experience in collecting national election results from post-communist countries is that relying on any source that reports results for multiple elections almost always means that those results will come with an 'other' category that includes votes for small, minor parties, but very rarely names any of those parties. This lack of information greatly complicates any attempt to divide parties into those that continue to exist across a pair of elections and those that only contested one of the elections. For example, one can imagine a scenario in which Party X does not appear in the election results for the first election, but wins 20 per cent of the vote in the second election. These results could be consistent with two different states of the world. The first possibility is that Party X is truly a new party that did not contest the first election; therefore the 20 per cent of the vote received by Party X in the second election ought to be measured as Type A Volatility rather than Type B Volatility. Alternatively, Party X may have contested the first election, but received such a small percentage of the vote (for example less than 1 per cent) that for reporting practices it was grouped into the 'other' category, in which case Party X could contribute to Type B Volatility as a party that continued to exist across a pair of elections. Unfortunately, we have no way of judging which of these two states of the world is correct based on a set of election results that shows Party X winning 20 per cent of the vote in the second election and nothing in the first election, but with an 'other' category also being reported for the first election.[16]

Therefore, considering the practical limitations of the available information, the complexities introduced by unequal reporting standards, and the substantive concept of stability we are trying to capture, we chose to set a threshold for inclusion 'in the party system'. More specifically, we defined all parties that received at least 2 per cent of the vote share in either the first or second election as 'counting' as a party. All other parties were considered not to have been part of the party system, and thus were either (1) excluded from Type B calculations (for example, a party earning 0.75 per cent of the vote in the first election and 1.25 per cent of the vote in the second election) or (2) considered to represent Type A Volatility if they received less than 2 per cent of the vote in either election and more than 2 per cent of the vote in the other election. We chose

[16] While we might expect qualitative accounts of the election to be of some help in providing the history of Party X and whether or not it participated in the previous election, in most instances we are talking about parties that may have gone from 0.8 per cent of the vote in one election to 2.1 per cent of the vote in a second election. These types of parties do not tend to figure prominently in news reports of the elections, especially if they did not receive any seats in the parliament. Nor, for that matter, would most of these types of coding decisions affect the overall measure of either Type A or Type B Volatility by a significant amount, so for the most part this is more an exercise in accuracy than an issue that is likely to affect the substantive nature of one's conclusions.

a threshold of 2 per cent because it was the lowest threshold for which we could ensure equal election data reporting standards across countries. As a test of sensitivity, however, we also recalculated our measures of volatility at two higher thresholds for inclusion (5 per cent and 7 per cent), and the resulting volatility measures were highly correlated (0.89 and 0.78, respectively) with the volatility scores we calculated using the 2 per cent threshold.

Coding Type A and Type B Volatility also requires us to wrestle with the concept of party mergers and splits. As explained previously, an old disappearing party is one that contested an election at time t but did not contest the subsequent election at time $t + 1$ (or received less than 2 per cent of the vote at time $t + 1$). A new party is one that contested an election at time $t + 1$ but did not contest (or received less than 2 per cent of the vote in) the election at time t. Party mergers, however, can complicate these seemingly simple coding rules, and thus we adopted the following supplementary guidelines. A party is also coded as a new party at time $t + 1$ if it resulted from the merger of at least two parties that received at least 5 per cent of the vote in the election at time t. If only one of the two parties received at least 5 per cent of the vote in the election at time t, the party is considered to be a 'continuation under another name' of the larger of the two parties, and the volatility of that party falls into the category of Type B Volatility. For example, we can consider the merger of the Democratic Union and the Liberal Democratic Congress in Poland. The parties contested the 1993 election separately and won 10.6 per cent and 4.0 per cent of the vote, respectively. They then merged prior to the 1997 election to form the Freedom Union, which won 13.4 per cent of the vote. As only one of the parties received more than 5 per cent of the vote in the previous election, the new Freedom Union party is coded as a 'continuation under another name' of the Democratic Union. Thus the difference between the Democratic Union's vote share in 1993 and the Freedom Union's vote share in 1997 contributes to Type B Volatility, while the Liberal Democratic Congress's vote share in 1993 (4.0 per cent of the vote) contributes to Type A Volatility in 1997, as the party 'exited' the political system by not contesting the 1997 election (and receiving 0 per cent of the vote). We use the 5 per cent threshold precisely so that when a large party absorbs a smaller party, it does not enter our dataset as a genuinely new party and instead reflects – accurately, we believe – the fact that the larger party is continuing on in a slightly modified form. Our reasoning is that once both parties are above 5 per cent of the vote, the emerging party is more likely to represent something genuinely new.[17]

Finally, it is necessary to have a coding rule to address the question of party splits. If a party splits after an election at time t and one party is a clear successor (for example, has the same name, controls the party resources), then the clear successor is *not* considered a new party at time $t + 1$; thus any changes in its vote share are considered Type B Volatility. However, if splinter parties from the clear successor emerge as part of this process – which was common in the early years of the post-communist transition, particularly involving communist successor parties – then these parties are coded as new parties at time $t + 1$; any votes they receive in the next election contribute to Type A Volatility. In contrast, if a party

[17] This figure of 5 per cent is of course arbitrary, but we chose it because it is the most common threshold for attaining parliamentary representation in proportional representation (PR) systems; future analysts are of course free to choose a different threshold. In practice, though, the number of parties formed from mergers – especially after the initial years of a new democracy – is not likely to be very high, and small changes in coding rules are unlikely to make a particularly large difference in how parties are coded.

that contested an election at time t splits without a clear single successor party, then all successor parties to that party are considered new parties at time $t + 1$; thus all contribute to Type A Volatility. The fragmentation of the Civic Forum in the Czech part of Czechoslovakia, which took place prior to the 1992 parliamentary election, is a relevant example. The pro-democracy Civic Forum dominated the 1990 election, taking 53.15 per cent of the vote. The movement subsequently divided into four parties to contest the 1992 election: the Civic Democratic Party (33.9 per cent), the Civic Democratic Alliance (5.0 per cent), the Civil Movement (4.4 per cent) and the Club of Engaged Non Party Members (2.0 per cent). In this case, no party kept the original name and there was no single clear successor party.[18] So all four parties are considered new parties, and thus all contributed to Type A Volatility.

To summarize, if a party receives at least 2 per cent of the vote in both elections (held at time t and $t + 1$), then we include the change in the vote for that particular party in our calculation of Type B Volatility. If a party receives at least 2 per cent of the vote in either an election held at time t or $t + 1$ (but, crucially, *not* in both), then we include the vote for that party in the election in which it did exceed 2 per cent of the vote in our calculation of Type A Volatility. Parties that fail to receive at least 2 per cent of the vote in either of the elections are not included in the analysis.[19]

VOLATILITY IN POST-COMMUNIST COUNTRIES

Our data for this article are drawn from parliamentary elections from post-communist countries from 1989–2009.[20] Post-communist countries provide a rich opportunity to study the unaddressed issue of Type A Volatility, while simultaneously creating a bounded set of cases with shared characteristics, most importantly the communist legacy. In keeping with most other studies of electoral volatility, we limit ourselves to parliamentary elections in order to eliminate a host of potential complications from comparing parliamentary and presidential elections.[21] To meet the inclusion criteria, a country must have been a part of either the former Soviet Union, the former Yugoslavia, the former Czechoslovakia or a member of the Warsaw Pact.[22] From each of these countries, we then include all pairs of consecutive parliamentary elections that were held when the country was deemed at least Partly Free according to Freedom House at the time of both elections. Non-consecutive free elections were not eligible. Similarly, elections that were invalidated due to fraud were also excluded. This left a total of twenty-one countries and eighty-nine pairs of elections.

[18] For more detail, see Tucker 2006, Chapter 4.

[19] Election results were drawn from a wide range of both primary and secondary sources, although we relied especially heavily on the PARLINE database on national parliaments and parliamentary elections (http://www.ipu.org/parline-e/reports/2001_arc.htm; it now encompasses the election results previously found in the Chronicle of Parliamentary Elections), *Electoral Studies*' 'Notes on Recent Elections' and Wilfred Dirksen's Election World internet resource, which has now been transferred to Wikipedia (http://en.wikipedia.org/wiki/List_of_election_results).

[20] For countries employing mixed PR and single-member district (SMD) electoral systems, we use only the party list component of the election result. For countries that exclusively use SMD electoral rules, we use the parties' national vote share, which is calculated by aggregating the vote across all legislative districts.

[21] This includes, but is not limited to, the fact that not all countries hold presidential elections, the fact that presidential elections dictate a different set of elite concerns and the fact that many prominent presidential candidates have run as independents.

[22] We therefore exclude Mongolia.

TABLE 1 *Mean Volatility by Country*

Country	Type A	Type B	Total volatility
Albania	27	21	48
Armenia	50	6	56
Bosnia-Herzegovina	23	11	34
Bulgaria	22	17	39
Croatia	19	11	30
Czech Republic	15	11	27
Estonia	30	17	47
Georgia	36	10	45
Hungary	13	14	26
Latvia	34	17	50
Lithuania	56	14	69
Macedonia	46	10	57
Moldova	36	10	46
Montenegro	28	3	31
Poland	28	18	46
Romania	38	7	46
Russia	39	12	51
Serbia	32	9	41
Slovakia	50	9	59
Slovenia	35	15	49
Ukraine	23	13	36

Appendix Table A1 shows the list of included elections and countries. The table also shows which of these elections were included in the Birch, Sikk and Tavits studies, a point we put aside for the moment but that will be important in the following section of the paper. We refer to the collection of elections in our dataset for the remainder of the article as the 'Freedom House (FH) Elections'.

Across all the elections that met our criteria (that is, those displayed in Appendix Table A1), the mean level of Total Volatility is 45 per cent, Type A Volatility is just under 32 per cent and the mean level of Type B Volatility is just under 13 per cent. This finding illustrates that over 70 per cent of the Total Volatility in post-communist countries in this time period is Type A Volatility. The importance of this observation should not be understated. By contrast, in Western Europe during the same time period, almost two-thirds (60 per cent) of the Total Volatility comes from Type B Volatility. If this finding holds more broadly, and we can assume that the vast majority of electoral volatility in established democracies is of the Type B variety, this would mean that previous studies of electoral volatility in post-communist countries and established democracies were essentially analysing two different phenomena, despite the fact that they were employing the same measurement strategy (the Pedersen Index). Although for now we can only speculate about the nature of volatility across other regions of the world with newer competitive party systems, it seems quite legitimate to (at the very least) guess that there may be similar patterns at work there as well.

Table 1 (above) and Figure 1 (below) further disaggregate our data. Table 1 shows the mean volatility levels by country over time for the different types of volatility. For example in Slovakia, the mean level of Total Volatility (that is, what is calculated by the Pedersen Index) is 59 per cent. However, when broken into Type A Volatility and Type B Volatility, it becomes clear that almost all of Slovakia's volatility is due to Type A

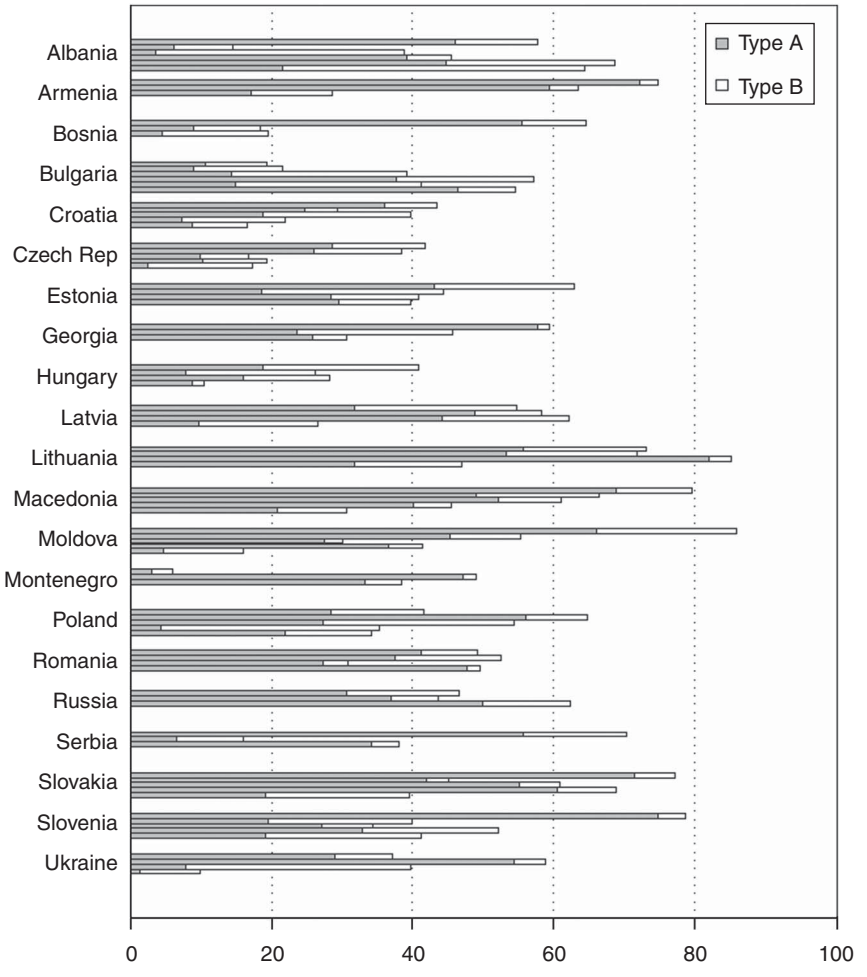

Fig. 1. Deconstructed Type A and Type B volatility

Volatility. We can also observe that the composition of Type A and Type B Volatility in Slovakia is quite different compared to that of Hungary, the only country with (barely) higher Type B Volatility than Type A Volatility.

Figure 1 illustrates the volatility scores by country for each election. (Each bar of the chart is a separate election; see Appendix Table A1 for election years). For a different way of visualizing these same data, see Appendix Figures A1, A2 and A3, which plot Type A Volatility, Type B Volatility and Total Volatility, respectively, over time.[23]

Taken together, we can make a number of interesting observations about patterns across the entire dataset, as well as within individual countries. Overall, we see that while both Type A Volatility and Total Volatility decrease over time, Type B Volatility is stable or increases slightly. These time trends suggest that these democracies may at some point start to resemble the more traditional volatility patterns of consolidated democracies as

[23] The lines in the figures in the appendix represent the bivariate regression of time and volatility.

Type A Volatility fades and only Type B Volatility remains. Indeed, this is probably what we would expect to see as unstable new party systems gradually begin to solidify.

This time trend is also confirmed by looking at mean Type A, Type B and Total Volatility by time across countries. Specifically, Table 2 below shows mean volatility by election sequence and confirms the time trend shown in the figures. As countries have more elections, the level of Type A Volatility decreases, while the level of Type B Volatility slightly increases. (Note that the increase in Type A Volatility in the seventh election is based on only two cases). This pattern is consistent with a consolidating the party system, though the remaining levels of Type A Volatility suggest that there is still considerable progress yet to be made.

TABLE 2 *Mean Volatility by Election Number*

Election Number	Type A Volatility	Type B Volatility	Total Volatility	*N*
2	46	12	57	19
3	33	12	45	21
4	28	14	42	20
5	27	10	38	18
6	17	17	34	9
7	34	26	60	2

We can also use these data to examine volatility patterns within individual countries. For example, we can note that despite the overall trend, Type A Volatility is not declining in all countries. The clearest outlier to this general pattern is Lithuania, where the level of Type A Volatility increases quite substantially from 1996 to 2000, and even more so in 2004.[24] We can also pick up patterns of countries in which Type A Volatility is itself volatile, such as Albania, which has very high levels of Type A Volatility in 1992 and 2005, but one of the lowest levels of Type A Volatility in 1996. Similar patterns can be found with Type B Volatility. Slovenia, for example, has high levels of Type B Volatility in 1996 and 2004, but a relatively low level in 2000. Alternatively, we can use the data to pick out elections that have particularly high levels of both Type A and Type B Volatility, such as Poland's transformational 2001 parliamentary elections.[25] While a detailed explication of the reasons underlying changes in either Type A or Type B Volatility in any particular country is beyond the scope of this article, we hope these examples illustrate the kind of research questions that can be raised once we have quantitative measures of Type A and Type B Volatility by country and election year in hand.

Of course, we also now have the ability to examine whether traditional models of electoral volatility can explain variation in Type A and Type B volatility in post-communist countries, and it is to precisely this question that we turn in the following section.

MULTIVARIATE ANALYSES OF VOLATILITY

In this section, we use a standard volatility model to examine the effect of deconstructing Total Volatility into its Type A and Type B components in a multivariate framework.

[24] For more on the 2004 Lithuanian election, see Jurkynas 2005, who describes it as an 'earthquake' election (p 770).

[25] Markowski and Tucker 2010; Millard 2003.

Our goal here is twofold. First, we want to see if we can recover a set of statistically significant predictors of electoral volatility when we rely only on the cases included in the Birch, Sikk and Tavits studies. Secondly, we want to examine whether these findings persist when we expand the size of the dataset, both by bringing it up to date and by fixing a firm rule for which countries to include in the analysis.[26]

As the Birch, Sikk and Tavits studies rely on different independent variables, we needed to arrive at a uniform set of regressors for our own analysis that contains variables that we would suspect could affect either Type A Volatility, Type B Volatility or both. As our primary goal in this article is not the development of new theoretical arguments, we do so by drawing on the framework presented in Mainwaring, Espana and Gervasoni, which essentially consists of three parts.[27] The authors argue that volatility, and especially what they call 'extra-system volatility', ought to be more likely to emerge when (1) current government performance is poor, (2) the party system is more fragmented and (3) in the presence of formal institutional rules that make party entry easier. In addition, they suspect that extra-system volatility will decline over time.[28]

Our rationale behind including variables to tap into these three factors is as follows. First, poor government performance is expected to create an opportunity for new parties to capture the votes of former government supporters who may now be looking for a new champion. Poor government performance may also lead to more voters flowing away from the incumbent to established incumbent parties, and thus seems a good candidate for explaining both Type A and Type B volatility. Party system fragmentation – that is, the presence of more parties in the party system – ought to affect Type B volatility almost mechanically: the more parties there are, the more opportunities there are for party switching. Moreover, recent theoretical work has suggested that party systems with a higher number of political parties may make it easier for new party leaders to decide to introduce a new political party into the system without fear that there will be an adverse effect on policy outputs.[29] Finally, if the decision underlying new party entry is guided by the non-policy costs of entry and conditioned on the likelihood of successfully winning votes in an election

[26] We omit one election from our analysis that was included in the Tavits, Sikk and Birch analyses – the 1990 Romanian parliamentary elections – since Romania was rated 'Not Free' by Freedom House at that time. We cannot imagine a scenario whereby we would have arrived at different conclusions regarding the robustness of the findings from the earlier analyses, but even if this were the case – that adding one additional observation radically changed the results of our analysis – it would suggest that the original findings were incredibly sensitive to specification.

[27] Mainwaring, Espana, and Gervasoni 2009. They also have a fourth component, the 'historical moment', but given that all of our cases are from what is largely the same historical moment – the post-communist period following the collapse of Soviet communism in formerly communist countries – we leave this out of our analysis. It would certainly be worth reconsidering in a larger comparative analysis like the one conducted by Mainwaring, Espana, and Gervasoni 2009.

[28] This framework is quite similar to Tavits' (2008) model of strategic party entry (which in turn draws on Cox 1997) that argues we should see more new parties entering the party system when formal barriers to entry are lower, when the benefits of office are higher and when the probability of electoral success is higher. This latter category encompasses what Mainwaring, Espana, and Gervasoni 2009 call current government performance, but also includes variables such as a rise in turnout and the presence of ethnic parties.

[29] The basic intuition here is that if a new left-of-centre party enters a two-party system, it may split the vote on the left and end up allowing the right to govern (or allowing the right to have a correspondingly larger effect on government policy in a coalition), thus moving policy output to the right and away from the preferred policy of the new party leader. The more parties there are in the party system, the less likely this is to occur. Therefore, party entry becomes easier for potential new party leaders who are concerned

or seats in a parliament, then formal institutional barriers that either impose added costs on potential new parties or make success potentially less likely should have the effect of deterring potential new party entry, and thus should result in less Type A Volatility. These types of institutional barriers would not be expected, however, to affect Type B volatility.

Our statistical models therefore contain the following variables. To evaluate the question of government performance, we follow earlier studies in using macroeconomic conditions.[30] Interestingly, most previous studies have only included short-term measures of macroeconomic performance, that is, changes in economic conditions since the previous election. However, in the post-communist context there is an obvious additional longer-term reference point against which people might compare the performance of the current government, which is how much better or worse the economy is performing now compared to under communism.[31] For this reason, our model includes change in GDP since the previous election as a measure of short-term economic performance, but also change in GDP since 1989, when communism collapsed in most of East-Central Europe, as a measure of government performance relative to the previous communist era.[32] Both measures are expected to tap into overall voter satisfaction with the performance of the current government.

To measure party system fractionalization, we take the standard tack of using the effective number of parties from the previous election.[33] For formal institutions that have an effect on making entry easier or harder, we follow the standard pattern in the literature by including a measure of average district magnitude, which we log to account for the nature of countries with single national districts.[34] The rational for doing so is explained in great detail in Cox,

(F'note continued)
about policy outcomes the more parties there are in the system. See Kselman and Tucker 2011 for more details.

[30] Mainwaring, Espana, and Gervasoni 2009; Roberts and Wibbels 1999; Tavits 2005; Tavits 2008.

[31] Owen and Tucker 2010.

[32] Pacek, Pop-Eleches, and Tucker 2009.

[33] We measure the effective number of political parties as is standard in the literature: $1/\sum_{i=1}^{n} p_i^2$, where p_i is the vote share of party i. Golosov 2010; Laakso and Taagepera 1979. For elections in which we have incomplete information, namely those in which the election authorities reported the vote share of a number of small parties as a combined 'other parties' category, we follow the averaging of extremes method advocated by Taagepera 1997. This approach is a three-step method: (1) the effective number of parties is initially calculated treating 'others' as zero (the highest possible estimate), (2) the effective number of parties is calculated substituting the lower of either the $Others^2$ or $Others \times SmallestParty$ into the effective number of parties formula (the lowest possible estimate) and (3) the average is then taken of steps 1 and 2.

[34] Cox 1997; Mainwaring, Espana, and Gervasoni 2009. Our actual measure of district magnitude (see Appendix Table A1) is weighted in multitier systems to account for the fact that different electoral 'tiers' often have different district magnitudes. To give the single most complicated example, in Hungary out of its 386 total legislators, 176 come from single-member districts; another 146 are elected in a second tier that contains twenty proportional electoral districts of varying sizes; and sixty-four come from a third national-level electoral tier. As such, 46 per cent (176/386) are elected in a tier with a magnitude of 1, another 38 per cent (146/386) come from a second tier with an average magnitude of 7.3 (146/20) and another 17 per cent (64/386) come from a third tier with magnitude of 64. Putting this all together, Hungary's weighted magnitude score is coded as follows: [0.46*1] + [0.38*7.3] + [0.17*64] = 14.1. We are missing four observations of district magnitude. Rather than risk introducing bias through the use of listwise deletion (King et al. 2001), we instead mean-replace these missing values and add a dummy variable to the analysis identifying these mean-replaced cases. With this set-up, the coefficient on district magnitude should be interpreted as the effect of district magnitude on new party entry for the cases for which we have observations of district magnitude; we thank Larry Bartels for suggesting this approach. The coefficient on the dummy variable identifying the missing case

but the basic idea is that strategic voting leads to only $M+1$ candidate being viable in any given district, where M is the size of the district magnitude or the number of representatives per district. While there is no formal rule that prevents different parties from emerging to contest different districts, in most cases the same parties will do so in practice.[35] Thus the larger the district magnitude, the more room there is in general for new party entry, and therefore the more 'permissive' the electoral system. According to Cox, whether a country also has an important elected president plays a role in determining whether the $M + 1$ rule results in the *same* $M + 1$ parties dominating throughout the country, so we also control for whether a country has a presidential, mixed or parliamentary system of government.[36] Finally, it is widely agreed that proportional electoral rules make it easier for parties to achieve representation in parliament (Duverger's rule), so we also include whether or not a country employs proportional voting rules in its national legislative elections as a dummy variable in the model.[37]

(F'note continued)
– which is essentially meaningless because it is simply a function of whatever value we use to replace the missing observations – is not included in the tables.

[35] Cox 1997.

[36] Cox 1997. Following the lead of Pacek, Pop-Eleches, and Tucker 2009, we classified our cases into three types of government (presidential, mixed or parliamentary) using the Frye, Hellman, and Tucker 2012 and the Armingeon and Careja 2007 datasets. The presidential cases are: Georgia (1995, 1999), Russia and Ukraine (1998, 2002). The parliamentary cases are: Albania, Bulgaria, Croatia (2003, 2007), Czech Republic, Estonia, Hungary, Latvia, Macedonia, Slovakia and Slovenia. Neither dataset has any observations for Montenegro or Serbia, so on the basis that both countries have a popularly elected president with non-trivial powers, we classified both countries as mixed systems. Due to its unique rotating presidency, Bosnia is properly classified as 'other', and for the purposes of these analyses has been grouped with the 'mixed' category.

[37] Seawright 2006, and Klasnja, Deegan-Krause, and Tucker 2011 have found that corruption can motivate voters to turn away from incumbent parties, and could therefore create a market for new parties. As there is no standard comparative set of corruption measures dating back to the early 1990s in East-Central Europe (Pacek, Pop-Eleches, and Tucker 2009), we created our own measures based on election reports from the 'Notes on Recent Elections' articles in the journal *Electoral Studies*. We coded the approximately 65 per cent of elections for which the journal had produced reports according to four criteria: a 0–3 subjective ranking, a slightly more nuanced 0–4 subjective ranking, a count of the number of times the word 'corruption' appeared in the article (normalized by the length of the article) and a count of the number of times the word 'scandal' appeared in the article (also normalized by the length of the article). We then entered each of these different variables in turn into our standard models for Type A, Type B and Total Volatility. The results of these analyses can be found in Appendix Tables A4, A5 and A6, but the bottom line is that there is no systematic effect for corruption in either direction. Across the twelve different models that we ran, one variable appeared statistically significant: the count of the number of mentions of the word 'corruption' on Type B Volatility. However, as we would almost expect one variable to appear statistically significant by chance alone in twelve different models, we do not think this result conveys all that much useful information. At the same time, given that we needed to drop approximately one-third of our cases in order to conduct this analysis, we also do not want to make too much of our negative findings, which is why we have relegated this discussion to a footnote and kept the corruption variables out of the primary results presented in the text of the article. It may be the case that in the future a more fine-grained measure could produce consistent evidence of a relationship between corruption and volatility – and if so, our best guess from what we have seen so far is that this would probably affect Type B volatility – but for now we cannot provide conclusive evidence in that regard. It may also turn out to be the case that a good corruption measure could have an effect on the prevalence of volatility in a comparative study that included volatility from a region where corruption was generally less of a problem (for example, Western Europe) and a region where corruption was generally more of a problem (for example, Eastern Europe). We thank an anonymous reviewer for suggesting this line of inquiry.

In addition to the general categories suggested by the Mainwaring, Espana and Gervasoni framework,[38] we also add two additional variables that have been shown to effect electoral volatility in previous studies of volatility in an effort to make sure that our models do not suffer from omitted variable bias. First, both Tavits and Sikk find an effect for time since democratization.[39] In our models, we include both years since democratization and years since democratization squared (to allow time to have a non-linear effect on volatility). Secondly, ethnic fractionalization has been suggested to influence electoral volatility in studies outside of the post-communist region, although interestingly in some cases by dampening volatility[40] and in others by increasing volatility.[41]

To test these hypotheses systematically on our different measures of volatility, we use a standard ordinary least square (OLS) regression model, but to take into account the fact that there may be unobserved heterogeneity in the standard errors within countries, we cluster our standard errors by country.[42] An alternative approach would have been to use a fixed-effects model rather than an OLS model. While this approach would have had the advantage of better addressing the panel nature of the data, it would have suffered from two additional problems. First, estimating additional parameters for the fixed-effects model would have further reduced our degrees of freedom and taxed our small number of cases substantially. Secondly, many of the most interesting theoretical explanations for variation in electoral volatility centre on variables that do not vary much within countries; a fixed-effects approach prevents us from studying them, or perhaps even worse, might identify effects based on a handful of cases that switch within a country.[43] For a detailed description of these variables see Appendix Tables A2 and A3.

[38] Mainwaring, Espana, and Gervasoni 2009.
[39] Sikk 2005; Tavits 2005.
[40] Birnir 2006.
[41] Madrid 2005.
[42] None of the substantive results to follow change at all if we do not cluster the standard errors by country; results are available from the authors upon request. In Appendix Tables A7–A9, we also present the results of additional checks on the robustness of a number of our modelling decisions. More specifically, we examine how our results change across our full sample of cases (the 'Freedom House elections') when we include a lagged dependent variable (Column 2 of each table, although note that this involves dropping the first pair of elections in each country sequence, so it also results in a smaller dataset), when we include the number of years since the previous election as a control variable (Column 3), when we include country fixed effects (Column 4) and when we omit the variables related to the electoral and governing systems, which tend not to vary much across elections (Column 4). While there are of course some changes to the size of coefficients and standard errors, the bottom line is that the overall results remain fairly stable. For the Type A and Total Volatility models, the only statistically significant variable (GDP Change since 1989) retains its direction in all models, keeps relatively similar-sized coefficients and retains relatively similar levels of statistical significance. One new variable, Presidential System, achieves statistical significance in the Fixed-Effects Model and receives a startlingly large coefficient. We believe, however, that caution should be used in interpreting this result, as it is identified out of the handful of countries that changed electoral systems during this period. For the Type B Volatility model, there were no statistically significant effects in our original model, and no new variables stand out as being important except the Effective Number of Parties, which achieves statistical significance in the lagged model. One interesting finding from these results, however, is that the number of years since the previous election has a positive, statistically significant effect on Type A and Total Volatility. This may suggest that a certain amount of time needs to pass between elections before new party entry can be viable. This strikes us as an interesting topic for future research, and we revisit this point in the final section of the article. Interested readers are invited to see Appendix Tables A7–A9 for more detail.
[43] As noted in the previous footnote, we did, however, run a country-level fixed-effects model as a robustness test. In comparison to our full Type A model, the major differences are that GDP change since 1989 fails to achieve statistical significance at the 0.05 level (although it is in the same direction and

TABLE 3 *Determinants of Type A Volatility by Case Selection*

Variable	(1) Tavits elections	(2) Birch elections	(3) Sikk elections	(4) FH elections
GDP Change Between Elections	25.044**	11.426	17.911	9.019
	(9.091)	(27.119)	(22.739)	(10.128)
GDP Change from 1989	8.014	−39.439	9.793	−4.623***
	(22.508)	(56.519)	(27.010)	(1.326)
Effective Number of Parties	−0.446	−0.115	−1.614	−0.346
	(0.548)	(0.862)	(3.011)	(0.533)
Log Weighted District Magnitude	12.857***	3.698	10.296**	0.638
	(2.539)	(2.877)	(3.605)	(2.931)
Presidential System	−9.389	−3.479		6.784
	(8.800)	(19.770)		(9.435)
Mixed System	14.923**	16.511*	21.564**	4.255
	(5.737)	(7.935)	(7.976)	(5.897)
Proportional Representation	−4.735	14.838	4.321	0.077
	(9.162)	(12.004)	(14.509)	(6.004)
Years Since Collapse of Communism	−8.656*	−4.894	−9.477	−2.633
	(4.314)	(7.394)	(11.752)	(2.153)
Year Since Collapse Squared	0.494*	0.421	0.597	0.070
	(0.267)	(0.649)	(0.960)	(0.101)
Ethnic Fractionalization	34.469	−37.169	15.843	−2.677
	(42.983)	(74.392)	(51.781)	(18.978)
Constant	−15.858	56.397	5.680	41.941***
	(38.295)	(67.355)	(53.051)	(13.329)
Observations	42	27	24	89
R^2	0.478	0.482	0.401	0.139

Note: standard errors clustered by country. Robust standard errors in brackets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

We begin with Type A (that is, party entry and exit) Volatility. Table 3 reports the results of our regression analysis of the covariates of Type A Volatility using the elections contained in the Tavits, Birch and Sikk studies, as well as the expanded dataset (FH elections) we have prepared. To reiterate, we are using the same data in all of the analyses; we vary only the elections included in each analysis to match the elections included in the earlier studies.

When we restrict our analysis to the elections included in the Tavits study, we find a large number of statistically significant predictors of Type A Volatility, including GDP change between elections, the log weighted district magnitude, the governing system and (to a lesser extent) years since the collapse of communism. For the most part, the Birch and Sikk elections also reflect these findings, with (in most cases) coefficients of similar magnitude in similar directions, although we have a good deal less statistical confidence in these results (which is probably not surprising, given the smaller sample sizes); at the very least, though, they do not appear to be inconsistent with the Tavits findings.

(F'note continued)
actually has a substantially larger coefficient) and the estimated coefficient on presidential system is in the same direction, statistically significant and considerably larger. See the previous footnote for a more detailed discussion.

TABLE 4 *Time or Countries? Type A Volatility*

Variable	(1) Tavits elections	(2) Tavits countries	(3) Other countries	(4) FH elections
GDP Change Between Elections	25.044**	21.052*	−17.187	9.019
	(9.091)	(11.355)	(32.273)	(10.128)
GDP Change from 1989	8.014	−13.870	−2.113	−4.623***
	(22.508)	(19.358)	(5.000)	(1.326)
Effective Number of Parties	−0.446	−0.474	−1.847	−0.346
	(0.548)	(0.752)	(1.930)	(0.533)
Log Weighted District Magnitude	12.857***	0.026	−0.463	0.638
	(2.539)	(3.685)	(4.519)	(2.931)
Presidential System	−9.389	5.765	−0.928	6.784
	(8.800)	(14.871)	(16.261)	(9.435)
Mixed System	14.923**	7.219	−15.232	4.255
	(5.737)	(8.510)	(12.037)	(5.897)
Proportional Representation	−4.735	−2.743	2.974	0.077
	(9.162)	(9.712)	(18.395)	(6.004)
Years Since Collapse of Communism	−8.656*	−3.967**	−0.382	−2.633
	(4.314)	(1.389)	(5.953)	(2.153)
Year Since Collapse Squared	0.494*	0.126	−0.003	0.070
	(0.267)	(0.088)	(0.254)	(0.101)
Ethnic Fractionalization	34.469	−17.611	64.407	−2.677
	(42.983)	(46.297)	(50.451)	(18.978)
Constant	−15.858	52.255*	43.137**	41.941***
	(38.295)	(27.327)	(17.327)	(13.329)
Observations	42	60	29	89
R^2	0.478	0.240	0.271	0.139

Note: standard errors clustered by country. Robust standard errors in brackets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

In contrast, the FH Elections produce very different results. Of all the statistically significant variables in the Tavits analysis, not a single one survives when we increase our sample size to eighty-nine elections. Furthermore, a new variable emerges with strong explanatory power: GDP change since the collapse of communism. Thus we end up with a different explanation for Type A Volatility in post-communist countries. Far from being a response to barriers to entry, or short-term economic changes, variation in Type A Volatility in the first two decades of post-communist elections appears to be largely a function of the transition itself: Type A Volatility declines as the economy improves relative to where it was at the beginning of the transition. Thus something different is clearly going on in the expanded collection of elections as compared to the elections included in the Tavits study. A natural next question to ask, therefore, is whether this is a function of including more countries in the study, expanding the time frame of the study, or both.

Table 4 demonstrates that the culprit appears to be expanding the scope of countries included in the study as opposed to the time frame of the analysis, although both are clearly having effects. The first and last columns of Table 4 are the same as in Table 3. The second column, however, replicates the analysis using all of the countries included in the Tavits analysis, but for all of the years in the FH Elections dataset, which increases the number of

elections by roughly 50 per cent. The third column, in contrast, includes all of the elections from countries *not* included in the Tavits study. When we simply expand the time frame of the study in the original Tavits counties, we do find some similarities in the results (that is, between columns 1 and 2): GDP change between elections has roughly the same effect, and Type A Volatility still declines over time. In contrast, the size of the effect for both district size (*Log Weighted District Magnitude*) and having a mixed presidential/parliamentary system drops dramatically, and neither of these variables retains statistical significance at conventional levels. Turning to the twenty-nine elections from countries not included in the Tavits study, we find remarkably different patterns: none of the variables is statistically significant, and GDP change, district size and mixed governing systems all have coefficients in the opposite (albeit statistically insignificant) direction. So there is evidence that both expanding the time frame and expanding the number of countries in the analysis contribute to the new results, but the bottom line remains the same: determinants of Type A Volatility based on the analysis of elections included in the earlier studies are simply not robust to expanding the size of the dataset to those elections included in the FH Elections dataset.[44]

Turning to Type B Volatility, there is one overwhelming conclusion to be drawn from the results presented in Table 5: standard models of electoral volatility tell us little about what causes variation in electoral volatility between existing parties in post-communist countries. There is but a single statistically significant coefficient in the entire table, which with a significance level of 0.10 can of course be explained by chance alone. While it is possible that these findings are in some way a result of the particular choice of variables we used in our models, we have run many other specifications of these models and come to exactly the same conclusions.[45] Moreover, in Table 3, we use the exact same variables – common in other analyses of electoral volatility – and find numerous statistically significant relationships, which suggests there is no underlying problem with the manner in which we code our independent variables.

The one potential culprit we have not yet explored, however, is our coding of Type B Volatility. Although it seems unlikely, it remains possible that there is something about the way we coded this variable that is driving our null findings. Thus as a robustness test, we collected a parallel dataset in Western Europe from the same time period.

Table 6 presents the results of regressing Type B Volatility on a common set of variables in both Western Europe and the post-communist countries; note that we drop *Time Since Communism* from the analysis because this makes no sense in the West European context (which is why the results in Column 1 of Table 6 are not exactly the same as the results in Column 4 of Table 5). Here we do find two statistically significant predictors of Type B Volatility in Western Europe, suggesting that there is nothing inherent in the way we coded Type B volatility that precludes finding positive results. Interestingly, both of the variables that predict variation in Type B volatility in Western Europe – the effective number of parties and ethnic fractionalization – produce similar coefficients in the post-communist countries analysis, just of reduced size and with larger relative standard errors. This may suggest that

[44] To reiterate, this finding cannot be due to the fact that we use a different collection of independent variables from the previous studies or employ a different set of coding rules for our Type A Volatility measure, precisely because we find so many statistically significant findings using our data in analyses of the reduced sample sizes from the earlier studies, as illustrated in Columns 1–3 of Table 3.

[45] Tests included rerunning the analysis without clustering the standard errors by country, decomposing each of the models by including only a limited number of variables in each analysis and splitting the data by decade. See also Appendix Table A9, in which we also add a lagged dependent variable, control for the number of years between elections and include country fixed effects, all of which replicate the null results in Table 5.

TABLE 5 *Determinants of Type B Volatility by Case Selection*

Variables	(1) Tavits elections	(2) Birch elections	(3) Sikk elections	(4) FH elections
GDP Change Between Elections	−9.410*	2.409	3.279	−2.059
	(5.065)	(8.368)	(7.115)	(5.219)
GDP Change from 1989	3.590	−11.358	−10.733	0.639
	(9.409)	(23.531)	(8.266)	(0.693)
Effective Number of Parties	−0.274	−0.151	0.874	0.446
	(0.233)	(0.235)	(0.762)	(0.313)
Log Weighted District Magnitude	−2.545	−2.351	−2.275	−0.784
	(1.540)	(2.877)	(2.786)	(0.887)
Presidential System	3.610	−0.777		−4.631
	(6.504)	(9.652)		(4.126)
Mixed System	0.626	0.306	−2.983	−2.788
	(3.757)	(4.604)	(5.161)	(2.211)
Proportional Representation	1.277	−1.144	−3.999	0.827
	(3.156)	(6.716)	(3.953)	(2.228)
Years Since Collapse of Communism	2.234	−0.345	2.575	0.848
	(1.694)	(2.981)	(3.873)	(0.807)
Year Since Collapse Squared	−0.144	0.055	−0.198	−0.031
	(0.105)	(0.213)	(0.345)	(0.042)
Ethnic Fractionalization	9.191	2.483	5.932	−6.163
	(17.182)	(35.332)	(18.559)	(6.397)
Constant	18.441	28.454	14.810	13.059**
	(13.635)	(26.529)	(17.154)	(5.318)
Observations	42	27	24	89
R^2	0.206	0.279	0.351	0.116

Note: standard errors clustered by country. Robust standard errors in brackets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

there are common determinants of Type B volatility across old and new democracies, and that eventually once the amount of Type A Volatility begins to decline in the post-communist countries, we will be able to find similar explanations for overall levels of volatility across both regions.

Taken together, it seems prudent to draw the following conclusions. To date, analyses of volatility in post-communist countries are essentially analyses of Type A Volatility; when we rerun our analyses in Tables 3 and 5 using Total Volatility (see Appendix Table A4), the results for Total Volatility closely resemble the results for Type A Volatility and look nothing like the results for Type B Volatility. Therefore any study that attempts to compare Total Volatility (that is, the Pedersen Index) in post-communist countries with Total Volatility in established democracies is essentially comparing two different political phenomenon; the former is dominated by variation in Type A Volatility and the latter is likely dominated by Type B Volatility. Thus unless one disaggregates electoral volatility into its Type A and Type B components, as we have done here, comparing Total Volatility in post-communist countries to Total Volatility in established democracies is essentially comparing apples to oranges.

Perhaps even more importantly, we suspect this is likely to be the case in new democracies the world over. At the very least, it ought to be incumbent upon scholars

TABLE 6 *Determinants of Type B Volatility in Post-Communist Countries and Western Europe*

Variables	(1) Post-Communist	(2) Western Europe	(3) All
GDP Change Between Elections	1.643	−2.287	0.451
	(4.229)	(4.089)	(3.141)
GDP Change from 1989	0.328	−0.699	−0.364
	(0.589)	(1.250)	(0.752)
Effective Number of Parties	0.446	0.972**	0.604**
	(0.315)	(0.404)	(0.295)
Log Weighted District Magnitude	−0.685	0.754	0.285
	(0.852)	(0.503)	(0.555)
Presidential System	−5.049		−5.853
	(4.213)		(3.603)
Mixed System	−3.035	0.758	−1.096
	(2.144)	(1.106)	(1.379)
Proportional Representation	0.935	1.079	−1.341
	(2.374)	(1.133)	(1.587)
Ethnic Fractionalization	−6.333	−12.078***	−1.013
	(6.644)	(3.787)	(3.533)
Constant	13.373**	6.515	8.079**
	(5.202)	(4.451)	(3.547)
Observations	89	95	184
R^2	0.097	0.281	0.061

Note: standard errors clustered by country. Robust standard errors in brackets.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

studying volatility in new democracies to identify what proportion of Total Volatility in those countries is due to Type A Volatility, and what proportion is due to Type B Volatility. This will at least allow us to understand how to interpret findings regarding Total Volatility (for example, in post-communist countries, Total Volatility is essentially Type A Volatility). A more noble longer-term goal would be to bring new theoretical insight to the topic by generating separate hypotheses for the analysis of Type A and Type B Volatility, a topic we return to in the following section.

CONCLUDING THOUGHTS: TOWARDS A NEW RESEARCH AGENDA ON ELECTORAL VOLATILITY

In this article, we have revisited the topic of electoral volatility in post-communist countries with a new and expanded dataset that includes all pairs of elections in post-communist countries from 1989–2009 that took place in countries rated at least 'partially free' by Freedom House. Building on observations from previous work, we develop an explicit framework for disaggregating the now well-known Pedersen Index into two separate components: volatility due to new party entry and exit (Type A Volatility) and volatility due to shifts in votes between existing parties (Type B Volatility). We also provide a set of detailed coding rules for measuring these two phenomena, as well as a broad overview of the prevalence of these two types of volatility during the first two decades of post-communist elections.

This exercise has allowed us to make four important conclusions concerning electoral volatility in post-communist countries. First, the story of electoral volatility in post-communist

countries to date is largely one of Type A Volatility. This is the case whether we simply look at the amount of volatility caused by party entry/exit and compare it to volatility due to switching among existing parties, or if we conduct sophisticated multivariate analyses of determinants of volatility and observe similarities in the results across analyses of Type A and Total Volatility. Put simply, a study of Total Volatility in post-communist countries – at least to date – is primarily a study of Type A Volatility.

Second, while – in line with the findings of previous studies – we can indeed find statistically significant results when regressing Type A Volatility on a standard set of explanatory variables using a smaller number of elections included in earlier studies, these results almost entirely disappear in our expanded dataset. Patterns that were previously present seem no longer to be so.

With this general point in mind, our third conclusion is that, unlike previous studies of electoral volatility in post-communist countries, we find almost no support for the claim that structural factors such as district magnitude, electoral rules or ethnic heterogeneity affect levels of electoral volatility across elections, and only marginal evidence in support of the governing system. Nor does party system fractionalization seem to matter. Instead, we find just one statistically significant predictor of Type A Volatility over the first two decades of post-communist elections: the worse the economy is performing relative to where it was at the start of the transition, the more likely Type A volatility is to be high. Such a finding fits in very well with big-picture theoretical ideas about the extended role of the transition in structuring post-communist political behaviour:[46] a country's long-term economic performance seems to create space for the creation of new political parties and incentives for failed ones to be abandoned.

It is, however, worth noting that in one of our robustness tests (Model 3 of Appendix Table A8), we found a strong positive effect for the number of years between elections on Type A volatility. Although not included in our original list of explanatory variables, there is a compelling logic at work here. The business of new party entry is time consuming, and in retrospect it does not necessarily seem surprising that the less time available to create a new party, the fewer successful new parties will emerge. It is a little more difficult to make a similar argument about party death, but if we think of loss of support as a somewhat linear cumulative process (as opposed, perhaps, to more of a tipping point model), then again we might suspect that in time, more dying parties might actually die. Either way, this strikes us as an interesting new theoretical direction for the study of Type A electoral volatility, and especially for new party entry.

Finally, we find that none of the extant theoretical explanations of electoral volatility give us any leverage into understanding variation in Type B electoral volatility in post-communist countries. We cannot really describe this as 'contradicting' previous studies, since, as noted above, previous studies that employed total volatility were really analysing Type A volatility. However it is very interesting to note that with a dataset that incorporates eighty-nine different pairs of elections from the collapse of communism to the present day, we really have no idea what explains the discrepancy in Type B volatility across different elections. Not only are none of these coefficients statistically significant, most are not even larger than their standard errors and many are in the wrong direction relative to expectations. Moreover, a wide range of tests of different specifications failed to budge us from this conclusion. To further test the credibility of these 'negative'

[46] Kitschelt et al. 1999; Tucker 2006.

findings, we collected a second dataset containing all elections in Western Europe during the same time period. Here we were able to find statistically significant results, thus decreasing our concern that there might be something inherently problematic with our measurement strategy.

One feature of our analysis is that we applied the same model to analyse Type A and Type B Volatility. We have good reasons for doing so in the context of this article – we were explicitly comparing results from similar models using different numbers of elections – but one exciting prospect for further study of electoral volatility, especially outside the confines of established democracies, would be to begin to think theoretically about the factors that ought to effect Type A Volatility but not Type B Volatility, those that ought to effect Type B Volatility but not Type A Volatility, and those that might effect both.

Consider as one example the state of the economy, which has often been present on the right-hand side of analyses of electoral volatility. Theories of economic voting suggest that we might see an excessive movement of voters away from the incumbent party if the economy performs particularly poorly, but also that we might see large numbers of voters switching their vote to the incumbent party if the economy performs particularly well. In both cases, therefore, we might expect higher Type B Volatility than if the economy performs about average. So a theoretically appropriate economic variable for explaining Type B Volatility might be 'deviation in economic experience', or some sort of measure of how the economy is performing this year relative to its average performance, be it exceptionally good or bad. In contrast, however, we would hardly expect elites to expend effort forming a new party if they believe the incumbent party will cruise to victory because of an exceptionally strong economy. We might, however, expect elites to form new parties if the economy was performing particularly poorly, with the expectation that dissatisfied supporters of that party could be looking for a new home in the upcoming election. Thus a theoretically appropriate economic variable to study Type A Volatility might be one that captures only the worst-performing economies.

We can also apply similar thinking to institutional variables. For example, a higher minimum necessary vote threshold for receiving seats in proportional representation voting systems ought to have a strong effect on dissuading new party entry, but ought not to make much of a difference in how much voters are likely to shift between three dominant parties in a three-party system. Thus it might be theoretically appropriate to include a measure of the electoral threshold in a study of Type A Volatility, but we might not have any reason to want to include a similar variable in a study of Type B Volatility.

We might also be able to think creatively about the way that past experiences could affect the different types of electoral volatility. For example, elites might be more likely to think a new party would enjoy electoral success the less attached they thought voters were to the parties they had voted for in the previous election. Thus an election which featured high Type B Volatility might have the effect of convincing elites that voter loyalties to their current parties are weak, and therefore that the ensuing election might be a good time to start a new party. With this in mind, we might want to include lagged Type B Volatility in a model predicting Type A Volatility.[47]

Once we have these theoretically appropriate models for Type A and Type B Volatility in hand, we can also begin to think about interesting cross-regional applications. Simple descriptive statistics would certainly be an interesting place to start. Based on our own

[47] See Appendix Table A9.

preliminary research we know that there are much, much higher levels of Type A Volatility in Eastern Europe than in Western Europe over the same time period, but how might Africa and Latin America compare? Indeed, it may turn out that Type A Volatility is more important than Type B Volatility for determining party system stability in most parts of the world, although this could also end up having a threshold effect: perhaps once Type A Volatility falls below a certain level, Type B Volatility becomes more important. It would also be interesting to learn whether the same factors that explain Type B Volatility in established democracies also do so in newer democracies. Perhaps we'll even end up needing models tailored to different factors in new democracies (based on low information about parties) vs. established democracies (based on high information about parties) for Type B Volatility, but not for Type A Volatility (since in both cases little will be known about these new parties). From an empirical standpoint, it would be interesting to know whether different factors affect Type A Volatility in different political contexts. Perhaps the factors that guide successful new party entry and exit will turn out to be different in post-communist societies with strong communist successor parties than in African countries where there are strong ties between ethnic groups and political parties.

All of these questions – and many others not considered here – strike us as both empirically interesting and fertile ground for theory building. What they have in common, though, is that they all build on the fact that the current measure of electoral volatility in the discipline, the Pedersen Index, conflates two essentially different forms of volatility. By highlighting a simple new conceptual tool – the idea of Type A and Type B electoral volatility – we hope to suggest a solution to this problem and an important step forward in research on electoral volatility.

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