

New Approaches to Electoral Volatility: Evidence from Postcommunist Countries¹

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Abstract

The development of a stable party system is considered an essential element of a consolidated democracy. Party system stability has been most frequently measured in terms of electoral volatility, which attempts to capture the stability of the electorate's preferences across elections. The traditional measure of party stability, Pedersen's Index of Volatility, however, includes both volatility among stable parties and volatility created by party entry and exit without distinguishing between the two. To address these concerns, we separate these different components of volatility into their constituent parts, creating a Type A Volatility measure that captures volatility from party entry and exit and a Type B Volatility measure that captures volatility among stable parties and address the numerous issues that arise in coding these variables. We then apply these measures to 80 pairs of elections from 21 post-communist elections and demonstrate that much of what has previously been labeled electoral volatility in post-communist countries turns out to be Type A Volatility. We also demonstrate that traditional multivariate models of electoral volatility generate very different results if we employ Type A or Type B Volatility as the dependent variable. We conclude the paper with a discussion of future directions for new theoretical and empirical research on electoral volatility that builds on the concepts of Type A and Type B Volatility.

Key Words: Electoral Volatility, Voting, Elections, Pedersen's Index, post-communist countries, political behavior

1 Introduction

Electoral volatility is a popular topic in the political science literature. Perhaps this should not be very surprising. Volatility is clearly linked to a concept we think is important - party system stability - and, crucially for political scientists, there is near uniform consensus on how to measure volatility using the now well known Pedersen Index (Pedersen 1983):

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

where n is 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 (Bartolini and Mair 1990, Elff 2007) and consolidating democracies in Latin America (Mainwaring and Scully 1995, Roberts and Wibbels 1999), Eastern Europe (Rose and Munro 2003, Cotta 1996, Lewis 2000, Tavits 2005), and Africa (Kuenzi and Lambright 2005, Lindberg 2007, Mozaffar 2005, and Ferree 2004) have consistently turned to 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 is particularly striking in the case of the Pedersen index, where the spread of the measure outside of the realm of stable, established democracies means that the variable is actually conflating two different political phenomenon that (1) are likely to mean different things to important political and economic actors, (2) ought to be measured

differently from one another, and (3) are likely best explained by different theoretical arguments.¹

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 re-allocates 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).² Type A Volatility is much more closely associated with party system instability, and can pose very different challenges and problems for anyone trying to interact with political actors than Type A Volatility. Consider, for example, an investor planning to build a factory in a country. In a country with moderate to high levels of Type B Volatility, the investor can be reasonably confident that she has a handle on who the relevant political actors are likely to be over the medium range future. Yes, the current government may be voted out of office, but 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 10 years from now may be completely different actors from those in power

¹Moreover, there are even circumstances where these problems arise in established democracies, although the concern is certainly more likely to be consistently present new democracies.

²As a mnemonic, Type A Volatility refers to volatility caused by “**A** new party” and Type B Volatility refers to volatility “**B**etween existing parties”. We are open to better suggestions for names for the two types of volatility, but the best alternatives we could come up with were “Inter-System Volatility” and “Intra-System Volatility”, which seemed to both be a mouthful and fairly easily confused.

now. 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. Similar arguments could be made for the concerns of potential international allies or trading partners.

From a social scientific perspective, it quickly becomes apparent that there are likely to be different theoretical explanations for Type A and Type B Volatility. Type B Volatility is essentially a story about why voters vote the way they do. Fortunately, there is a large literature in political science devoted to exactly the question of how people vote, and we can draw upon this literature to create appropriate theoretical explanations for Type B Volatility. Type A Volatility, however, is more a function of the actions of elites: high Type A Volatility springs from elite decisions regarding party entry and exit. While the distinction is not perfect - obviously, elites are motivated by beliefs about what voters will do - it highlights the fact that we ought to be using different hypotheses to explain Type A and Type B Volatility. Of course, testing such hypotheses requires appropriate, separate measures of Type A and Type B Volatility.

The purpose of this paper is to take up this task. Accordingly, in Section 2 we lay out in greater detail the criteria for distinguishing Type A Volatility from Type B Volatility, and provide formulae for coding both of these measures. In Section 3, we address a myriad of practical issues that one encounters when actually trying to code Type A and Type B Volatility in the context of newly emerging party systems; for illustrative purposes we refer to our experiences in coding both types of volatility in 80 elections across 21 post-communist countries. We situate the study in the post-

communist context precisely because it is a region where countries have experienced high levels of both Type A and Type B Volatility, and thus the potential dangers of conflating the two are more readily apparent.³ In Section 4, we present the actual levels of Type A and Type B Volatility from these 80 post-communist elections, revealing a telling pattern: Total Volatility, as measured by the Pedersen Index, is actually much more a function of Type A Volatility than Type B Volatility. While not exactly surprising in the context of newly emerging competitive party systems, this remains an important observation for the literature on electoral volatility, and one which we do not believe anyone has ever demonstrated quantitatively before. In Section 5, we examine the differences in using Type A, Type B, and Total Volatility (e.g. the Pedersen Index) as our dependent variable in a fairly standard model of electoral volatility.⁴ Similar to our findings from the previous section, we demonstrate that in the post-communist context, an analysis of Total Volatility is essentially analyzing Type A Volatility with extra noise; analyzing Type B Volatility produces a very different set of findings. In the final section, we build on these findings to suggest how a research agenda utilizing Type A and Type B Volatility ought to move forward in the future.

³While stable party systems in consolidated democracies do occasionally experience party entry and exit, it is our suspicion that in most cases in established democracies Type B Volatility will look quite similar to the Total Volatility measured by the Pedersen index (although there may be individual elections that provide exceptions). In new democracies, however, it is likely that both Type A and Type B Volatility will be significant; indeed, as we will show, in postcommunist countries Type A Volatility is on average quite a bit larger than Type B Volatility and much more closely correlated with "Total Volatility", or the standard measure produced by the Pedersen index.

⁴The model is fairly standard in so far as it uses a set of typical independent variables that are common in volatility studies. We do, however, improve the statistical model from previous work by employing a multi-level modeling approach that takes account of the fact that some of these independent variables vary by election while others vary by country.

2 Measurement Strategy

In this section, we briefly 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 great detail in Section 3.

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

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

where o = old disappearing parties that contested only the election at time t and w = new parties that contest only the election at time $t + 1$. Therefore, this measure only picks up volatility that is caused by new parties entering the political system – who by definition will not have had any voters in the previous election – and old parties exiting the political system, who 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 were won by parties that did not contest the previous election – would be 100%). How exactly one defines when a party has entered or exited the

political system is a complicated question for reasons that we expand upon 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 not in the current election, it is considered to have left the party system. For reasons we discuss in the following section, we employ 2% as our threshold in this particular paper – and robustness tests reveal that none of our results change in any qualitatively important manner if we rerun our analysis using alternative threshold levels as high as 7% – but there is no reason that other researchers could not choose a different threshold.⁵

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 here are defined as parties above the threshold for inclusion in the political system at the time of both the current election and the previous election. So to put this another way, if all of the parties in a given country (defined here as, for example, all of the parties receiving 2% or more of the vote) stay the

⁵It is worthwhile to note 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.

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 either entered the political system or old parties have exited it, 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 paper, will refer to this measure as "Total Volatility". To summarize:

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

3 Coding Volatility

One of the great, and often under-discussed, challenges of any study of electoral volatility – but particularly one including new democracies – is that of actually coding the volatility. Unlike in consolidated two party systems such as the United States, where measuring the change in support for the Democrats and Republicans across two elections is a trivial matter of arithmetic, in unstable multi-party systems scholars face a vast array of coding decisions before the arithmetic can begin. 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: parties that continue to exist across elections (stable parties), and parties that contest only one election (new parties and parties that cease to exist). Similar to consolidated two party systems, the coding decisions would then have been 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 election results for multiple election results almost always means that those election results will come with an “other” category that includes the 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 could imagine a scenario in which Party X does not appear in the election results for the first election, but wins 20% of the vote in the second election. Such a set of election results could be consistent with two states of the world. In the first state of the world, Party X is truly a new party that did not contest the first election, in which case the 20% of the vote received by Party X in the second election ought to be measured as Type A Volatility and not Type B Volatility. Alternatively, it may be the case that Party X contested the first election, but received such a small percentage of the vote (say less than one percent) 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 was actually at play from a set of election results showing Party X winning 20% of the vote in the second election and includes an “other category” in the first election.⁶

Therefore, considering the practical limitations of available information, 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% of the vote share in either the first or second election to “count” as a party. All other parties were considered not to have been part of the party system, and thus were either excluded from Type B calculations (e.g., a party earning 0.75% of the vote in the first election and 0.25% of the vote in the second election was not included in our calculations), or else entered the calculations for Type A Volatility if it received less than 2% of the vote in either election and more than 2% of the vote in the other election. We chose a threshold of 2% specifically 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%, and 7%), and the resulting volatility measures were highly correlated (0.89, and 0.78, respectively) with the volatility scores we cal-

⁶While 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 if Party X truly did receive 20% of the vote in the current election, in most instances we are talking about parties that may have gone from 0.8% of the vote in one election to 2.1% of the vote in a second election, so these types of parties do not tend to figure prominently in news reports of the elections, especially if the party in question received few or no 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 that much, so for the most part this is this more of an exercise in accuracy than an issue which is likely to affect the substantive nature of one’s conclusions.

culated using the 2% threshold. Moreover, using these alternative volatility scores in the multivariate analyses found later in this paper did not alter the substantive interpretation of our findings in any noticeable way.

Coding Type A and Type B Volatility also requires us to wrestle with the concept of party mergers and splits. As laid out previously, Old Disappearing parties are defined as parties that contested an election at time t but did not contest the subsequent election at time $t + 1$ (or received less than 2% of the vote at time $t + 1$). New Parties are parties that contested an election at time $t + 1$ but did not contest (or received less than 2% 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% of the vote in the election at time t . If instead only one of the two parties received at least 5% of the vote in the election at time t , then the party is considered to be a “continuation under another name” of the larger of the two parties, and volatility regarding that party falls into the category of Type B Volatility. To take an 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% and 4.0% respectively, and then merged to form the Freedom Union prior to the 1997 election which won 13.4% of the vote. If we apply our party merger rules from above, as only one of the parties received more than 5% in the prior election, the new Freedom Union party is coded as a continuation under a different 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%) contributes to Type A Volatility, as the party no longer existed and thus did not contest the 1997 election.

Finally, it also 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 (e.g., has the same name, controls the party resources), then the clear successor is *not* considered a New Party at time $t + 1$, and thus any changes in its vote share are included in Type B Volatility. However, if there are splinter parties from the clear successor that emerge as part of this process - something common in the early years of the post-communist transition, particularly in terms of communist successor parties - then these parties are coded as new parties at time $t + 1$ and thus any votes they receive in the next election will contribute to Type A Volatility. In contrast, if a party that contested an election at time t splits without a clear single successor party, then all of the successor parties to that party are considered to be New Parties at time $t + 1$, and thus all contribute to Type A Volatility. To take an example, we can consider the fragmentation of the Civic Forum in the Czech part of Czechoslovakia, which took place prior to the 1992 parliamentary election. In 1990, the pro-democracy Civic Forum dominated the election taking 53.15% of the vote. The movement subsequently divided into four parties to contest the 1992 election: the Civic Democratic Party (33.9%), the Civic Democratic Alliance (5.0%), the Civil Movement (4.4%) and the Club of Engaged Non Party Members (2.0%). In this case, no party kept the original name and there was no single clear successor

party.⁷ 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% of the vote in both an election 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% 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% of the vote in our calculation of Type A Volatility. Parties that fail to receive at least 2% of the vote in either of the elections are not included in the analysis.⁸

4 Volatility in Postcommunist Countries

Our data for this paper was drawn from parliamentary elections from postcommunist countries from 1989 to 2007.⁹ Postcommunist 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

⁷For more detail, see Tucker 2006, chapter 4.

⁸Elections 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 (http://www.ipu.org/parline-e/reports/2001_arc.htm, now encompassing the results previously found in the Chronicle of Parliamentary Elections), Electoral Studies election reports, and Wilfred Dirksen's Election World internet resource, which has now been transferred to Wikipedia (http://en.wikipedia.org/wiki/List_of_election_results). A data set including measures of Type A and Type B Volatility from all of the elections analyzed in this paper is available from the authors upon request; we are currently at work on expanding the data set to include other regions of the world.

⁹For countries employing mixed PR and SMD electoral systems, we (to the best of our knowledge) use only the party list component of the election result.

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.¹⁰ 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.¹¹ 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, those elections that were invalidated due to fraud were also excluded. This left a total of 21 countries and 80 pairs of elections. Table 1 (below) shows the list of included elections and countries.

INSERT TABLE 1 AND TABLE 2 ABOUT HERE

From the list of eligible elections, we applied our coding criteria from the previous two sections and calculated both Type A and Type B Volatility. Across all countries and elections the mean level of Type A Volatility was just under 30% (See Table 2), while the mean level of Type B Volatility was just over 13%. This finding suggests that more than two-thirds of the total volatility measured by previous studies of electoral volatility in post-communist countries is in fact Type A Volatility. The importance of this observation should not be understated. If we assume that the vast majority of electoral volatility in established democracies is of the Type B variety,

¹⁰This 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.

¹¹We therefore exclude Mongolia.

then this means that up until this point in time studies of electoral volatility in post-communist countries and studies of electoral volatility in established democracies were essentially analyzing two different phenomena, despite the fact that they were employing the same measurement strategy (e.g., the Pedersen Index). To make this point even more starkly, Type A Volatility across all 81 of our elections has a $+0.91$ correlation with Total Volatility (the traditional Pedersen index); in contrast, Type B Volatility only has a $+0.05$ correlation with Total Volatility. 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.

INSERT TABLE 3 ABOUT HERE

Table 3 (above) and Figure 1 (below) further disaggregate our data. Table 3 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 (e.g, what is calculated by the Pedersen Index) is 56%. 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 Volatility. We can also observe that the composition of Type A and Type B Volatility in Slovakia is quite different compared to that of Ukraine, which is one of the few countries with higher Type B Volatility than Type A Volatility.

INSERT FIGURE 1 ABOUT HERE

In Figure 1, we can observe the actual volatility scores by country for each election. (Each bar of the chart is a separate election; the actual years for each election can be backed out of the figure by consulting Table 1, but we left them out of Figure 1 in order to keep it from getting too cluttered). Figures 2, 3, and 4 (below) display these same data in a slightly different format, by plotting Type A Volatility, Type B Volatility and Total Volatility over time. The lines in these figures represent the bivariate regression of time and volatility.

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 are decreasing over time, Type B Volatility is stable or increasing slightly. These time trends suggest that these democracies may at some point start to resemble the more traditional volatility patterns of consolidated democracies as Type A Volatility fades and only Type B Volatility remains. Indeed, this is probably exactly what we would expect to see as unstable new party systems gradually begin to solidify.

INSERT FIGURES 2, 3, AND 3 ABOUT HERE

This time trend is also confirmed by looking at mean Type A, Type B and Total Volatility by time across countries. Specifically, Table 4 below shows mean volatility by election number 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. This pattern is consistent with movement toward consolidation of democracy, though the remaining levels of Type A Volatility suggest

that there is still considerable progress yet to be made.¹²

INSERT TABLE 4 ABOUT HERE

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 2004.¹³ We can also pick up patterns of countries where 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 which have particularly high levels of both Type A and Type B Volatility, such as Poland's transformational 2001 parliamentary elections (Millard 2003). 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 paper, we do hope these few examples illustrate the kind of research questions that can be raised once we have actual quantitative measures of Type A and Type B Volatility by country and election year in hand.

¹²Also interesting to note is the fact that levels of Type A Volatility seems to have *stopped* declining in the last wave of elections. While this is of course based on a limited number of observations, it will be interesting to observe if there is perhaps some sort of plateau where Type A Volatility in new democracies stabilizes. If so, it will be very interesting to compare this level of Type A Volatility to the level of Type A Volatility common in established democracies.

¹³For more on the 2004 Lithuanian election, see Jurkynas (2005), who describes it as an "earthquake" election (p.770).

A legitimate next question to ask is what effect using these different measures of volatility is likely to have on the conclusions we make following the types of multivariate analyses that are common in studies of electoral volatility, both in terms of how they compare to one another and in terms of how they compare to the standard measure of Total Volatility (e.g., the Pedersen Index). It is to precisely this question that we turn in the following section.

5 Type A, Type B, and Total Volatility in Multivariate Regression

In this section, we build a “standard” volatility model to examine the effect of deconstructing Total Volatility into its Type A and Type B components in a multivariate framework. Our goal is simple: to examine the extent to which our conclusions about what “causes” volatility in post-communist countries vary based on whether we use Total Volatility, Type A Volatility, or Type B Volatility as the dependent variable in our analysis. To be clear, at this point we are not attempting to generate models that are theoretically appropriate for either Type A or Type B Volatility (a topic we consider in the following section), but rather just attempting to demonstrate how serious the choice of the appropriate measure for electoral volatility can be for the conclusions we draw from statistical analyses.

Previous studies of electoral volatility in consolidated and consolidating democracies have suggested numerous theories to explain the sources of electoral volatil-

ity. Broadly speaking, these theories can be grouped into four categories: economic voting, institutional characteristics, cleavages, and changes in the size of the electorate.

The idea that economy influences election results is widespread in the political science literature.¹⁴ Although there is variance in the extent to which voters hold governments accountable for economic performance (see Powell and Whitten 1993; Anderson 2007), it has been fairly clearly demonstrated that economic evaluations strongly affect voting decisions. In the established party systems of the United States and Western Europe, this research has primarily focused on the extent to which incumbent governments are held responsible for economic performance (although see Bellucci 1984). In postcommunist countries, research on economic voting has also demonstrated an economic effect on the vote for particular types of parties, such as reformists or postcommunist parties (Fidrmuc 2000a,b; Jackson et al. 2003, 2005; Tucker 2006). Regardless of the exact nature of the effect, the existence of economic voting has been cited to suggest that electoral volatility ought to be increased by fluctuations in economic conditions. And indeed, in a variety of contexts, scholars have consistently found that changes in the economy are associated with higher levels of electoral volatility (Roberts and Wibbels 1999, Tavits 2005).

In addition to the role of economic voting, Roberts and Wibbels (1999) and Tavits (2005) suggest that institutional characteristics can also play a role in exacerbating or limiting electoral volatility. Characteristics such as the effective number of parties, party age, party polarization have all been found to play a role in the stability of

¹⁴For reviews, see Lewis-Beck and Stegmaier 2000 and Anderson 2007.

party systems.

Whether directly or indirectly - by influencing institutional characteristics - societal cleavages have also been hypothesized to play a role in party system stability. Roberts and Wibbels (1999) suggest that strong class cleavages provide a stabilizing force on the party system. Ferree (2004) and Tavits (2005) have all suggested that ethnic cleavages influence the stability of the party system. Similarly, Birnir (2006) suggests that linguistic cleavages serve as a driving force in stabilizing the electorate.

Lastly, changes in the size of the electorate have been suggested to influence electoral volatility. If, for example, there is a newly franchised population, or a dramatic change in turnout, these new voters may have different preferences, which could dramatically change a country's aggregate election results. Bartolini and Mair (1990) and Madrid (2005) have found that changes in the size of the electorate increase electoral volatility.

All of these works, however, consider electoral volatility *in toto*, without considering Type A and Type B Volatility separately. To test these hypotheses systematically on these different measures of volatility we fit the following model on each type of volatility (Type A, Type B, and Total Volatility):

Model 1: Standard Volatility Model

$$y \sim N(\alpha_{j[i]} + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i}, \sigma_y^2), \text{ for } i=1, \dots, n$$
$$\alpha_j \sim N(\gamma_0 + \gamma_1 u_{j1} + \gamma_2 u_{j2}, \sigma_\alpha^2), \text{ for } j=1, \dots, J$$

Where X_1 =Time, X_2 =Rule Change, X_3 =Economy Bottom 20%, X_4 = Effective Number of Parties, U_1 =Ethnic Fractionalization, U_2 =Democratic Experience, α_j = the country level indicator, i =indexes elections, and j =indexes countries.

For a detailed description of these variables see Appendix Table A1.

To take account for the fact that some of our data vary at the country level and other at the election level, we use a Bayesian multi-level model with country indicators, country (group-level) predictors, election level predictors, and non-informative prior distributions on our parameters. The country-level predictors help us to estimate the country intercepts, without overwhelming the information from the individual countries.¹⁵ Summary statistics for all of the independent variables in these analyses can be found in Appendix Table A1.

Table 5 below shows the results of our analyses, and intriguingly reveals vary different patterns in Type A and Type B Volatility.¹⁶ For three of the election level variables (time, change in turnout, and having an economy in the bottom 20% of our sample) and two of the country level variables (democratic experience and ethnic fractionalization) the coefficients for Type A and Type B Volatility actually have

¹⁵See Gelman and Hill (2007) and Shor et al (2007) for a detailed discussion. We used R and WinBUGS to fit these models.

¹⁶For each model estimation, five chains of 100,000 iterations were run, the first 50,000 of which were discarded, after which every 250th draw was saved for posterior inference.

opposite signs, suggesting that factors that increase Type A Volatility might decrease Type B Volatility and vice versa. While not all these coefficients achieve statistical significance, these divergent patterns suggest fundamentally different mechanisms are at work here. Thus in addition to the different temporal patterns we observe for Type A and Type B Volatility, we also get very different explanations for these patterns, strongly suggesting that further research into these two phenomena is needed.

INSERT TABLE 5 ABOUT HERE

6 Concluding Thoughts: Towards a New Research Agenda on Electoral Volatility

The purpose of this paper has been to introduce the concepts of Type A and Type B Volatility, explain in great detail how and why these measures ought to be coded, and to make a preliminary case for the importance of thinking about electoral volatility in this manner by providing some initial description and analysis of Type A and Type B Volatility in post-communist countries. As such, providing a comprehensive new theory of Type A or Type B Volatility and/or a set of exhaustive empirical tests of the determinants of Type A and Type B Volatility in post-communist countries is beyond the scope of this paper. That being said, our goal for the final section of this paper is to provide some first steps in thinking about the nature of such a future endeavor.

Crucially, we will need to move beyond a “standard” model of electoral volatility, and 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. One of way doing this that we hinted at earlier in the paper would be to think of Type A Volatility as a function of elite level decision making about whether or not to start a new party, and Type B Volatility as a mass level story of why voters might change their vote from one election to another election. The goal, therefore, would be to move beyond analyses like those found in the previous section in Table 5, where the same basic model is applied to both Type A and Type B Volatility, and instead come up with separate, theoretically appropriate models for both Type A and Type B Volatility.

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 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 electoral 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 expect 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 for a study of Type A Volatility might be one that captures only the worst performing economies.

We can apply similar thinking to institutional variables as well. For example, a higher minimum necessary vote threshold for receiving seats in a 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 that 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 try 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.

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. Surely we should find more Type A Volatility in Eastern Europe than in Western Europe, but how might Africa and Latin America compare as well? Indeed, it may turn out that Type A Volatility is more important for determining party system stability in most parts of the world than Type B Volatility, although this could also end up having some sort of threshold effect: perhaps once Type A Volatility falls below a certain level, Type B Volatility becomes more important. But it would also be interesting to see if the same factors explain Type B Volatility in established democracies as they do in newer democracies. Perhaps we'll even end up needing models tailored to different factors in new democracies (based on low information about parties) and 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). And from an empirical standpoint, it would be very interesting to know if different factors affect Type A Volatility in different political contexts. Perhaps the factors guiding 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 question – 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 introducing a simple new conceptual tool – the idea of Type A and Type B electoral volatility – we hope to provide a solution to this problem and an important step forward in research on the topic of electoral volatility.

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Table 1: Included Elections

Country	1st Year	2nd Year	Country	1st Year	2nd Year
Albania	1991	1992	Hungary	1998	2002
Albania	1992	1996	Hungary	2002	2006
Albania	1996	1997	Latvia	1993	1995
Albania	1997	2001	Latvia	1995	1998
Albania	2001	2005	Latvia	1998	2002
Armenia	1995	1999	Latvia	2002	2006
Armenia	1999	2003	Lithuania	1992	1996
Armenia	2003	2007	Lithuania	1996	2000
Bosnia-Herzegovina	1998	2000	Lithuania	2000	2004
Bosnia-Herzegovina	2000	2002	Macedonia	1990	1994
Bosnia-Herzegovina	2002	2006	Macedonia	1994	1998
Bulgaria	1990	1991	Macedonia	1998	2002
Bulgaria	1991	1994	Macedonia	2002	2006
Bulgaria	1994	1997	Moldova	1994	1998
Bulgaria	1997	2001	Moldova	1998	2001
Bulgaria	2001	2005	Moldova	2001	2005
Croatia	1990	1992	Montenegro	1990	1992
Croatia	1992	1995	Montenegro	2001	2002
Croatia	1995	2000	Montenegro	2002	2006
Croatia	2000	2003	Poland	1991	1993
Croatia	2003	2007	Poland	1993	1997
Czech Republic	1990	1992	Poland	1997	2001
Czech Republic	1992	1996	Poland	2001	2005
Czech Republic	1996	1998	Poland	2005	2007
Czech Republic	1998	2002	Romania	1992	1996
Czech Republic	2002	2006	Romania	1996	2000
Estonia	1992	1995	Romania	2000	2004
Estonia	1995	1999	Russia	1993	1995
Estonia	1999	2003	Russia	1995	1999
Estonia	2003	2007	Russia	1999	2003
Georgia	1992	1995	Serbia	1990	1992
Georgia	1995	1999	Serbia	2000	2003
Hungary	1990	1994	Serbia	2003	2007
Hungary	1994	1998	Slovakia	1990	1992

Continued on Next Page...

Table 1 – Continued

Country	1st Year	2nd Year	Country	1st Year	2nd Year
Slovakia	1992	1994	Slovenia	1996	2000
Slovakia	1994	1998	Slovenia	2000	2004
Slovakia	1998	2002	Ukraine	1994	1998
Slovakia	2002	2006	Ukraine	1998	2002
Slovenia	1990	1992	Ukraine	2002	2006
Slovenia	1992	1996	Ukraine	2006	2007

Table 2: Volatility Descriptives

Variables	Mean	Standard Deviation	N
Type A Volatility	29	20	80
Type B Volatility	13	8	80
Total Volatility	42	18	80

Table 3: Mean Volatility by Country Over Time

Country	Type A Volatility	Type B Volatility	Total Volatility
Albania	28	17	45
Armenia	50	6	56
Bosnia-Herzegovina	23	11	34
Bulgaria	21	16	37
Croatia	19	11	30
Czech Republic	19	10	29
Estonia	25	17	42
Georgia	41	12	53
Hungary	9	16	25
Latvia	28	16	44
Lithuania	57	15	72
Macedonia	53	11	63
Moldova	46	11	57
Montenegro	25	4	28
Poland	22	19	42
Romania	35	9	44
Russia	26	16	42
Serbia	32	12	43
Slovakia	42	9	51
Slovenia	17	18	35
Ukraine	15	16	31

Table 4: Mean Volatility by Election Number

Election Number	Type A Volatility	Type B Volatility	Total Volatility
2	39	12	51
3	28	13	42
4	26	14	40
5	21	13	33
6	22	16	38

Table 5: Standard Volatility Models

	Type A Volatility	Type B Volatility	Total Volatility
Country Level			
Intercept	19.443 (11.288)	9.321 (4.529)	27.993 (10.345)
Ethnic Fractionalization	34.567 (30.918)	-1.054 (10.800)	34.568 (28.484)
Democratic Experience	-5.897 (6.688)	0.399 (2.426)	-5.539 (6.117)
Election Level			
Time	-0.806 (0.496)	0.202 (0.221)	-0.590 (0.457)
Change in Turnout	-0.140 (0.383)	0.110 (0.153)	0.021 (0.343)
Economy Bottom 20%	1.575 (6.142)	-4.428 (2.59)	-2.470 (5.943)
Effective Number of Parties	1.832 (1.086)	0.390 (0.481)	2.174 (0.964)
Variance Components			
σ_a	10.499 (3.826)	2.279 (1.448)	8.660 (3.837)
σ_y	17.287 (1.706)	7.946 (0.724)	16.224 (1.561)
Summary Statistics			
Mean Deviance	681.027	556.887	671.298
Effective # of Parameters	18.088	12.470	17.153
DIC	699.115	569.358	688.450
Number of Observations	80	80	80
Number of Groups	21	21	21

Bayesian multi-level model with country level indicators and country level predictors estimated in R and WinBUGS. The table shows posterior mean coefficients with posterior standard deviations in parenthesis. To save space country intercepts have been omitted from the table, but are available upon request.

Figure 1

Deconstructed Type A and Type B Volatility

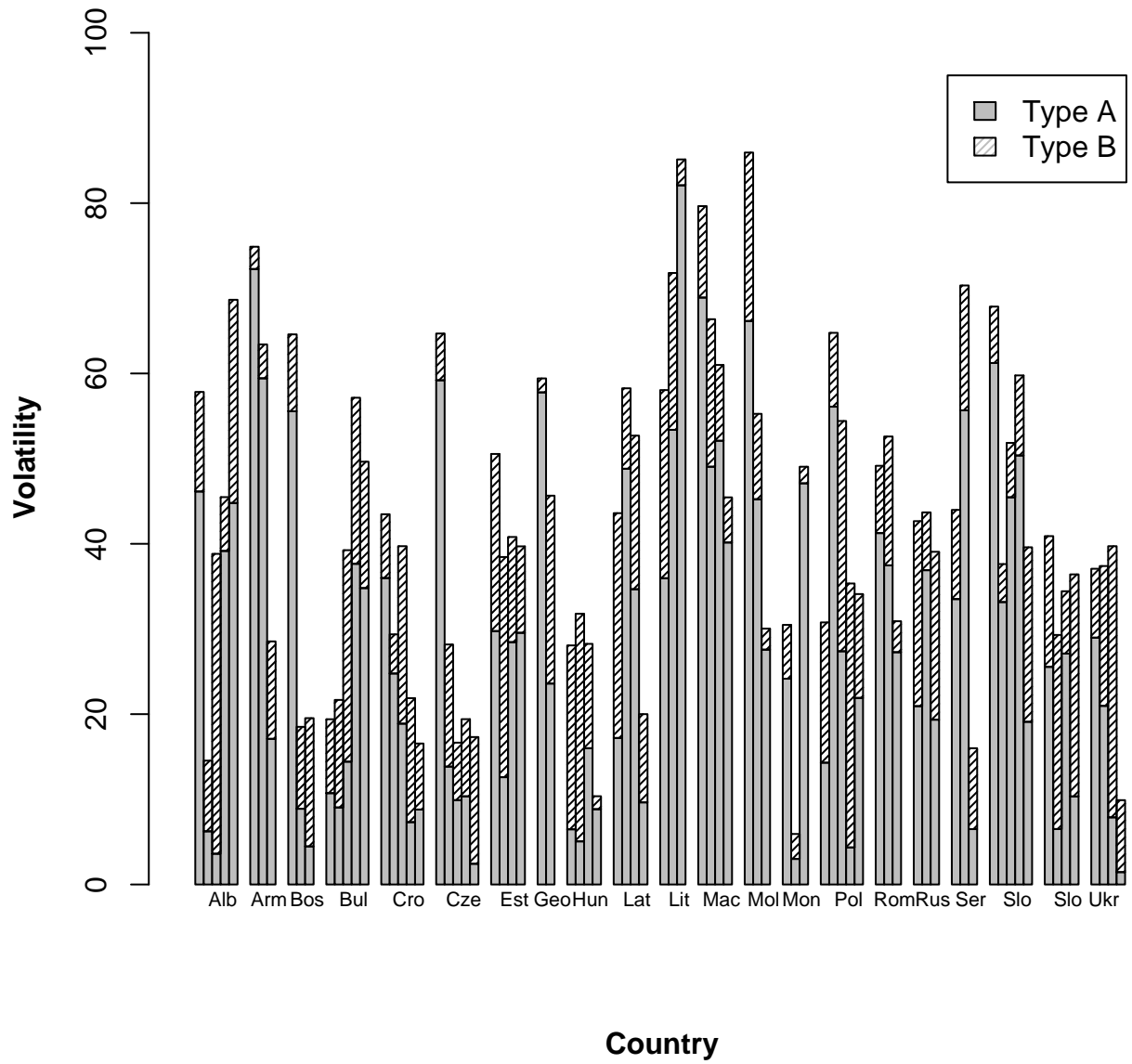


Figure 2: Total Volatility Over Time

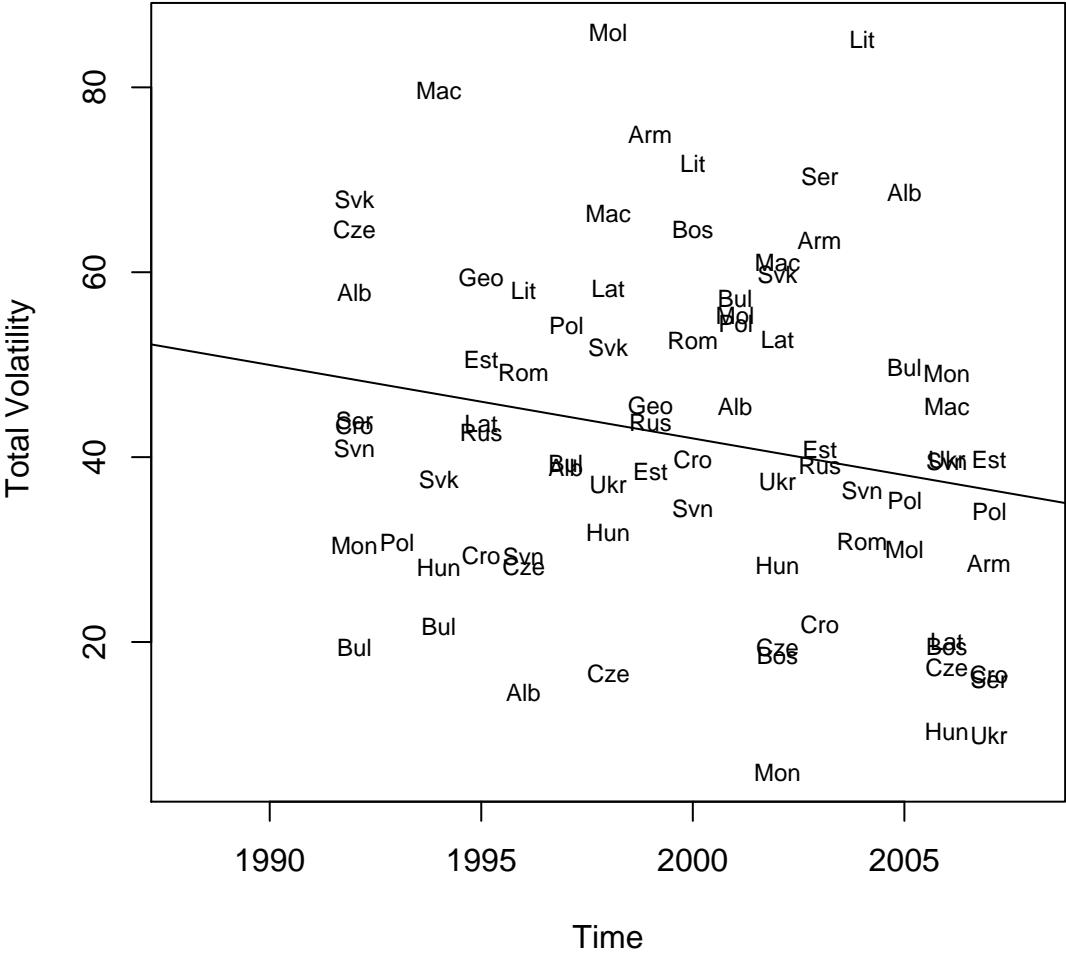


Figure 3: Type A Volatility Over Time

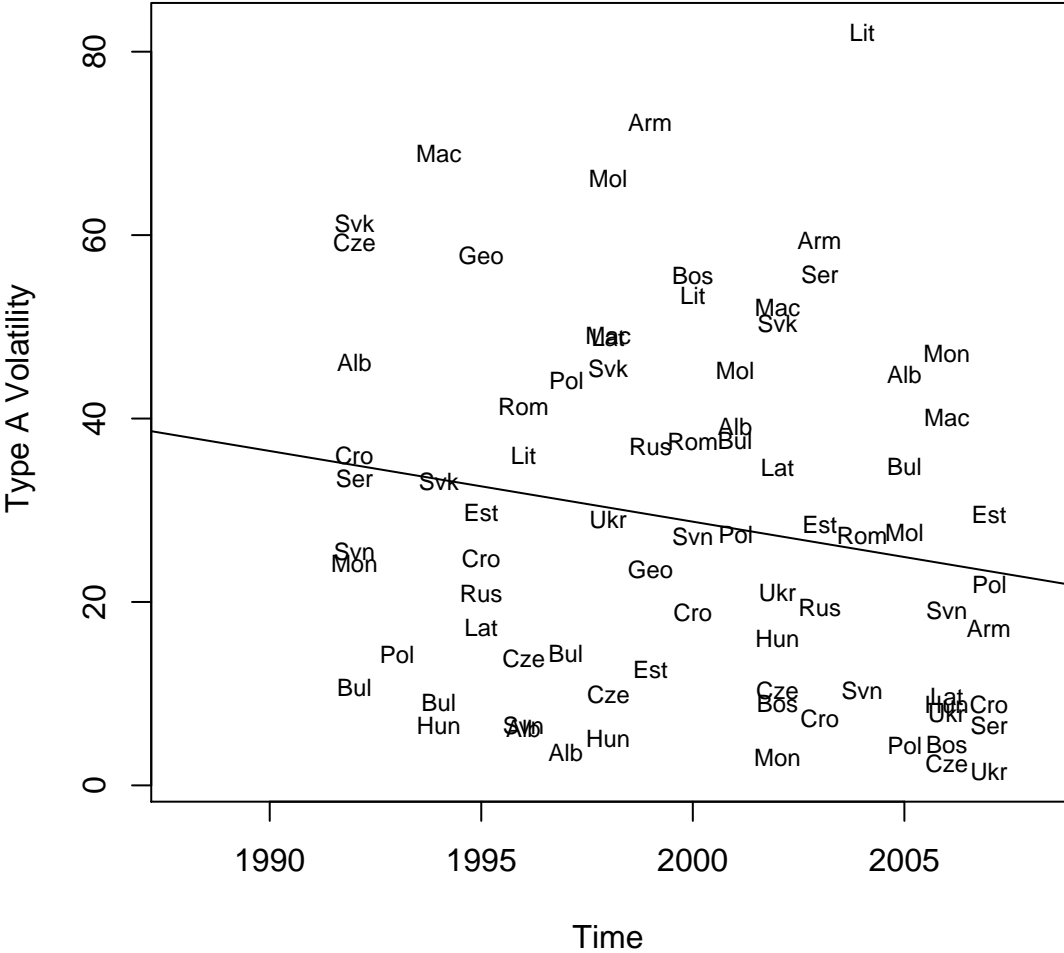
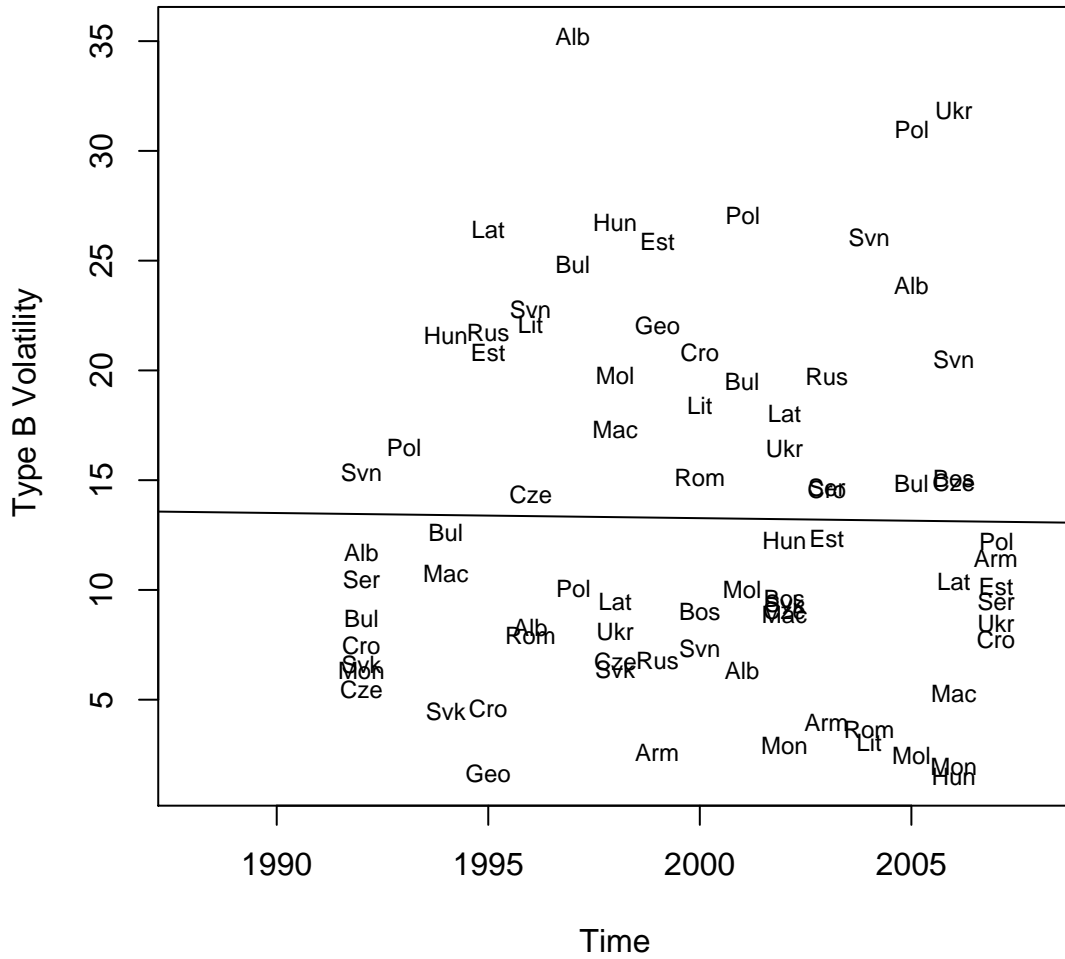


Figure 4: Type B Volatility Over Time



APPENDIX

Table A1: Summary of Variables

Variables	Coding/measurement	Source(s)	Mean	Standard Deviation
Type A Volatility	$\frac{ \sum_{o=1}^n p_{ot} + \sum_{w=1}^n p_{w(t+1)} }{2}$	<i>Authors: See note 8 for details</i>	28.85	19.63
Type B Volatility	$\frac{\sum_{i=1}^n p_{it} - p_{i(t+1)} }{2}$, among all stable parties.	<i>Authors: See note 8 for details</i>	13.27	7.96
Total Volatility	Type A Vol + Type B Vol	<i>Authors: See note 8 for details</i>	42.12	18.34
Time	Years since 1st Free & Fair Post-communist election	<i>Freedom House (2009)</i>	8.32	4.70
Democratic Experience	Average Polity democracy score during the inter-war period	<i>Polity IV</i>	2.47	2.50
Effective Number of Parties	$\frac{1}{\sum p_i^2}$, where p_i is vote share of party i	<i>Authors: See note 8 for details</i>	5.69	2.17
Change in Turnout	$ t_2 - t_1 $, where t is the voter turnout	<i>Authors: See note 8 for details</i>	8.20	6.50
Ethnic Fractionalization	Probability that two individuals will be from different groups. $1 - \sum p_i^2$, where p_i is the population share of the ethnic groups.	<i>Alesina et al. (2003)</i>	0.36	0.16
Bottom 20% Economy	Dummy for bottom 20% across whole sample of: GDP Growth, GDP% relative to 1989, Change in GDP since previous election	<i>WDI (2009) and EBRD Transition Reports (various years)</i>	0.20	0.40