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**European Parliament Electoral Turnout
in Post-Communist Europe**

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European Parliament Electoral Turnout in Post-Communist Europe¹

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Abstract: The relatively low voter turnout rates in the June 2004 European Parliamentary elections in many of the post-communist states surprised observers. While the average turnout rate for these new-EU member states barely surpassed 30%, turnout exhibited much variance at the national and sub-national levels. In this article, we study the determinants of European Parliamentary election voter turnout rates in the post-communist countries at the regional level. Our central hypothesis is that regional turnout rates may be related to regional economic conditions and that in areas experiencing economic hardship, turnout will be lower. We also assess the extent that EU attitudes matter for turnout. A unique data set, compiled at the NUTS-3 statistical region level, is employed to test these hypotheses.

Résumé: Le niveau de participation relativement faible lors des élections parlementaires européennes de juin 2004 dans les pays d'Europe de l'est a surpris de nombreux observateurs. Le taux de participation moyen dans ces nouveaux Etats membres dépassait à peine 30% et affichait de plus une forte variance aussi bien au niveau national que régional. Cet article analyse les déterminants du taux de participation lors des élections parlementaires européennes dans les régions des anciens pays communistes. Notre hypothèse centrale est que le taux de participation régional est fonction des conditions économiques régionales et que, dans les zones connaissant des difficultés économiques, le taux de participation sera plus bas. Nous évaluons aussi dans quelle mesure l'opinion à l'égard de l'Union Européenne influence la participation électorale. Ces hypothèses sont testées sur une base de données au niveau statistique régional NUTS 3.

JEL Classification : D72

Keywords : Economics of voting, participation, European Parliamentary election, post-communist countries / *Mots-clés :* économie du vote, participation économique, économies post-communistes, élections parlementaires européennes

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INTRODUCTION

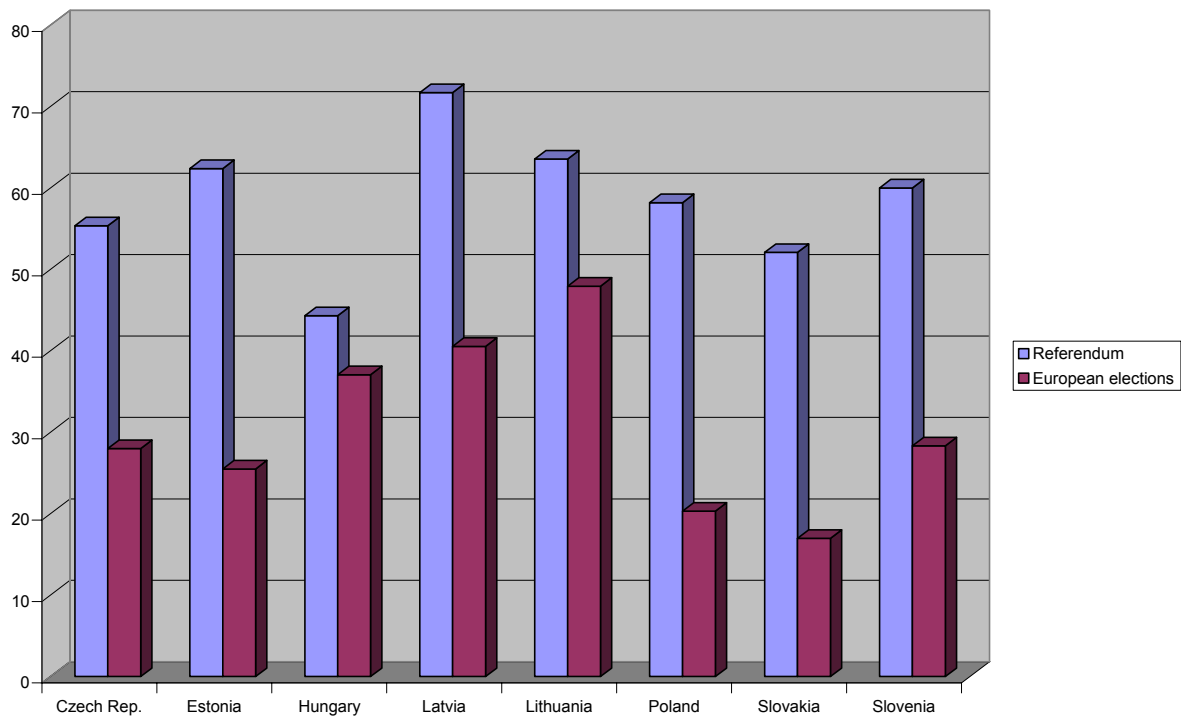
In May 2004, with much fanfare, the European Union extended membership to the first group of post-communist countries: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. After the fairly high voter turnout in the referenda, the sizeable “yes” vote in these polls, and much political hype about these countries’ “return to Europe,” many observers were surprised by the paltry voter turnout in many of these countries during the June 2004 European Parliamentary election. While turnout rates varied across these countries, the overall average barely surpassed the 30% mark.

Figure 1 illustrates the turnout rates in the European Parliamentary (EP) election and as a reference point, the European Union (EU) referendum in these eight countries. In each case, turnout in the EP election was markedly lower than in the referendum, with average turnout as a percent of registered voters at 30.58% and 58.46% respectively. The range in EP turnout rates is quite remarkable. Lithuania led in voter turnout with 47.97%, while in Slovakia only 16.97% of registered voters cast a ballot. At the regional level, the Elcki region of Poland had the lowest turnout, 14.5%, and the Kaunas region of Lithuania exhibited the highest turnout, 49.56%. Furthermore, the average turnout rate in these countries was also lower than the average for the 15 established member states, where analysts have been monitoring the steady decline of turnout rates over the past decades (Adshead and Hill 2005; Delwit 2002; van der Eijk and Oppenhuis 1990).²

The post-communist new member states offer a unique laboratory to test explanations of voter turnout. These countries have had common experiences with communism and the struggle to transform their economies to comply with the EU standards. They all voted on EU accession during 2003 and all joined the EU in May 2004. Additionally, many of the structural features for EP elections that have explained variance in national turnout rates in West European EP elections, do not vary across the post-socialist countries. Lastly, these countries all post per capita GDP’s below the average of the established member states, and at least during the initial years of EU membership, all are net-beneficiaries (Nugent 2004; McCormick 2005).

² The average turnout rate for the 15 countries was 47.79 % of registered voters.

Figure 1: Turnout rates in the 2003 EU Referenda and 2004 EP Election



Given the extent of shared commonalities, what factors explain this high variance in turnout rates among these post-communist new-EU member states? We examine this question at the aggregate-level using a unique set of district/region-level data gathered from the eight countries for the June 2004 EP elections. Our central argument, consistent with Pacek's (1994) finding in Central Europe, is that economic conditions play an important role in determining turnout rates. The magnitude of economic change in these countries has created economic winners and losers. In the aggregate, it has had diverse impacts on different regions of the countries depending on their primary industries. The economic uncertainty and unemployment that some people and regions have experienced, we argue, will lead to lower turnout rates. These citizens are also less likely to be supportive of the EU, particularly if they blame the free market and increased economic competition for their economic plight (Tucker et al. 2002; Tverdova and Anderson 2004).

In addition to reviewing the general literature on voter turnout, we develop this economic argument more fully in the following section. Then, we move on to discuss the collection and measurement of the data and our statistical methodology. Next, we present and discuss the results and finally, we conclude.

LITERATURE AND HYPOTHESES

Institutional factors

The vast literature on voter turnout in advanced industrial democracies has provided the foundation for constructing models of EP election turnout (for recent and thorough treatments of this literature, see Aarts and Wessels 2005; Blais 2000; Franklin 2002, 2004; Geys 2006). While the nature of the EP elections differs from national-level elections, the primary factors affecting turnout rates are quite similar. At the aggregate-level, scholars have followed the lead of Glass et al. (1984), Jackman (1987), and Jackman and Miller (1995) and have tested the impact of various electoral structures and rules across countries. In studies of EP turnout prior to the 2004 EU expansion, the variance in national-level turnout rates could be explained well by factors such as weekend voting, compulsory voting, concomitant elections, and the type of electoral system employed for the election (Franklin et al. 1996; Mattila 2003).

In his aggregate national-level study of turnout in all EU member states in the 2004 election, Rose (2004) tests for a host of institutional, attitudinal, and EU related factors. While he does not test a multivariate model, but rather looks just at each individual factor's correlation with turnout, the results are suggestive. Like Mattila (2003), he finds the expected correlation between turnout and the structural factors of compulsory voting and concurrent national elections. In 2004, however, all countries used a form of PR, so the electoral system did not affect turnout rates. He also finds that higher levels of trust in domestic political parties and in the national government were correlated with higher levels of turnout. The length of EU membership was also related to turnout, with the established EU countries showing higher turnout than newer member states.

While these findings greatly contribute to our understanding of how electoral practices affect political behavior, with the exception of concurrent national elections, they do not contribute to explaining turnout variance in this study. In all of the post-communist countries the PR electoral system is used for EP elections, all held their election on, or at least partially on, a Saturday or Sunday, and as a counter-reaction to their communist pasts, none has mandatory voting. However, there is one case of a concomitant national election, and that also happens to be the post-communist country with the highest turnout in the EP election: Lithuania. In April 2004, the Lithuanian president, Rolandas Paksas, was impeached on charges of corruption, prompting an early presidential election that coincided with the EP election (Jurkynas 2005). The events leading up to the presidential election captured the attention of Lithuanian voters, and, in turn, likely elevated

turnout higher than it otherwise would have been. This leads to our first hypothesis and the only structural factor for which we account in our models of turnout:

H1: In countries where national elections are concurrent with the EP election, turnout will be higher than in countries that do not have concomitant elections.

Socio-demographic factors

Studies of electoral participation at the individual level have long recognized the importance of socioeconomic and demographic characteristics – particularly education level and age. Education level is one of the most influential factors in explaining whether or not an individual will vote. Wolfinger and Rosenstone (1980, pg. 120) explained this relationship by stating “the personal qualities that raise the probability of voting are the skills that make learning about politics easier and more gratifying and reduce the difficulties of voting. Education increases one’s capacity for understanding complex and intangible subjects such as politics, as well as encouraging the ethic of civic responsibility.” While Wolfinger and Rosenstone’s seminal work focused exclusively on the U.S., the preeminence of education in explaining who votes has been confirmed in cross-national, individual-level analysis (Blais 2000) and in aggregated district-level analysis (Fauvelle-Aymar and François 2005).

Age typically is the other key determinate of individual-level turnout. The primary relationship found between age and turnout is curvilinear, that is, one that increases as people age, but then reverses among the most elderly groups (Blais et al. 2004). The young are the least likely to vote, largely because they have not yet developed the habit of voting, they tend to be more mobile, and are less likely to recognize the interests they have at stake in the political system. Then, as people age and mature, they become more likely to turn out to vote. Citizens begin to realize the impact that various policies have on themselves and the communities in which they live. As people grow elderly, they are more afflicted with health ailments that hinder their ability to get to the polls. Thus, we expect to see their political participation wane (Wolfinger and Rosenstone 1980).

The importance of both education level and age in explaining electoral participation has been confirmed in studies of Central European national elections particularly at the individual-level (Stegmaier 2004; Tworzecki 2003). However, at the cross-national aggregate level, these socio-demographic effects typically pale in comparison to institutional features.

Prior work on aggregate-level turnout in industrial democracies has suggested that most of the variance in country turnout rates is due to differences in the electoral rules, while only a small

fraction can be explained by differences in individual-level characteristics such as age and education level (Franklin 2002). Research on EP election turnout suggests the same pattern. Franklin et al. (1996) found that at the aggregate level, with a sample of 14 countries, compulsory voting, Sunday voting, proportionality, and time to the next election explain 92% of the variance in turnout rates. When they added social context variables, such as aggregate education, age, class, and religion, to the base model, none “adds even one-tenth of one percent to this total of variance explained” (Franklin et al. 1996, pgs. 318-9). However, for our purposes, it is important to note that the Franklin et al. result is driven by the national-level aggregation of the data, where the variance among the countries for the average value of these variables is very low. But at the district level, the variance is much greater and therefore, one can expect that these variables will have a substantial influence (Fauvelles-Aymar and François 2005). Thus, we test the following hypotheses:

H2: Regions with a greater percentage of citizens with high levels of education will have higher turnout rates than regions with smaller portions of the population with high levels of education.

H3: Regions with a higher percentage of middle-aged citizens will have higher levels of turnout than regions with a smaller percentage of middle-aged people.

Another demographic characteristic that is necessary to include in analyses of turnout is either an urban/rural measure at the individual level or a population density measure at the aggregate level. Two competing theoretical arguments for the importance of population concentration exist in the literature. One side argues that turnout should be higher in more rural settings since there is greater social pressure to perform one’s civic duty and a sense of community, while the other argues that voters in urban or more densely populated areas are more likely to be attuned to politics and more active in various types of political activity.

In thinking about turnout for the European Parliamentary elections, the dynamics may be a bit different, particularly because the EP is a more remote institution than local or national government. Voters in rural areas may feel that the decisions made in Brussels are not relevant to their daily lives, while those in urban areas, where a broader range of economic opportunities exist, may view the EU policies as more significant to their future wellbeing. This leads us to expect the following hypothesized relationship:

H4: Regions with higher population density will have higher EP turnout than regions with lower population density.

EU support

In addition to institutional and socio-demographic characteristics, scholars have posited that attitudes concerning the EU are important for participation and abstention. Citizens, who are knowledgeable about the EU and have favorable opinions of it, should be more likely to participate in electing representatives to its governing body. While this expected relationship intuitively makes a lot of sense, research on voter turnout in the older EU member countries has provided spotty evidence that EU attitudes matter for EP turnout. Matilla's (2003) analysis of EP turnout finds that turnout is higher in countries where support for the EU is greater. However, a number of other aggregate analyses fail to find evidence that EU perceptions matter for turnout (Franklin et al. 1996; Rose 2004; Schmitt and Mannheimer 1991). For example, in his study of turnout in all member states for the 2004 election, Rose (2004) finds no statistically significant relationship in bivariate correlations between the percent in the country who believe that their country will benefit from EU membership and turnout.

Blondel et al. (1997) have openly questioned these findings by asking: "Can it really be that attitudes to Europe- what people know and think and feel... about the European Union and its institutions – play no role in determining whether or not they vote in a European Parliament election?" (pg 246). Their individual-level study of the 1994 EP election focuses on reasons for why abstainers abstained from voting. Some abstained for circumstantial reasons, but more interesting for our purposes are the reasons offered by the voluntary abstainers. The most prominent reason given by the non-voters was lack of interest in the election. Other explanations included distrust of politics, lack of knowledge, and the belief that ones vote has no consequence. Opposition to the EU was a reason cited by 8% of non-voters in the EU countries with non-compulsory voting; however, of importance for the study of post-communist turnout in EP elections, Blondel et al. provide the distributions for East and West Germany separately. In East Germany, opposition to the EU is cited by 22% of non-voters as the reason for not voting - the highest percentage of the 10 countries listed (pg 255). This could be because of the EU's "newness" to the former East German citizens, or it may have to do with the communist legacy. Regardless, the finding suggests that support or opposition to the EU may have a more substantial impact on turnout in the new member post-communist countries than in the established member states.

Furthermore, there are additional reasons to believe that support will matter for turnout. Politicians and the media paid close attention to the pros and cons of EU membership during the

run-up to the 2003 referenda in these countries, enabling citizens to form opinions concerning membership. It is unlikely that many voters changed their minds about membership in the short time span between the referendum and the first EP election. While the referenda passed in all these countries, the results of the votes were far from unanimous.³ Of the citizens who opposed their country joining the EU, many likely viewed the EP election as irrelevant and thus abstained from voting.

H5: Higher levels of EU support should lead to higher turnout rates, while lower levels of EU support should lead to lower turnout rates.

Economic Conditions

Economic factors are not so commonly included in studies of voter turnout and electoral participation, though the theoretical argument and evidence that economics matters, has long existed. Rosenstone (1982), in his seminal work on economic adversity and voter turnout, reasoned that economic duress would cause voters to withdraw from political participation. Instead of following an election, they would need to devote their time and energy to meeting their basic needs. These citizens would be searching for work, or working extra jobs, in order to feed and house themselves and their families. Rosenstone tested this argument using both individual-level and aggregate-level data from the U.S., and found support for his hypothesis that economic hardship would lead voters to withdraw (the withdrawal hypothesis). While he considered the counterargument that adversity would drive voters to the polls to punish the incumbent (the mobilization hypothesis), he found no evidence that this occurs in the US.

Scholars have tested this economic adversity argument in other political contexts (Lewis-Beck and Lockerbie 1989, Radcliff 1992). Radcliff (1992) extended this argument to take into account the extent of the country's welfare system. On the one hand, he found that in countries with weaker welfare state protections, bad economic times result in withdrawal from politics. On the other hand, in countries where the state steps in to assist citizens in need and offers a longer-term security blanket, citizens are still able to participate in politics.

Pacek (1994) tested this argument in Central Europe using district level data and found support for Rosenstone's withdrawal hypothesis. Pacek tested the effect of unemployment on turnout at the district level in three post-communist countries in four national elections held from

³ For EU referendum results, see the respective country national election committee websites. A convenient listing with links to these sites can be found at <http://electionresources.org/eastern.europe.html>

1990 to 1992. After controlling for turnout in prior elections and education levels, the results revealed the expected negative relationship between the unemployment and turnout. Tworzecki (2003, pgs. 168-69) also finds some confirmation of this in his very thorough multivariate analysis of turnout. In his analysis, individuals in Poland and the Czech Republic, who were unemployed, were less likely to turn out than those who were working.

Should we expect to see the withdrawal hypothesis hold in the post-communist EP elections? Many scholars have documented the economic and social upheaval that ensued after the implementation of free-market reforms in the Central and East European countries during the 1990s (Blazyca 2003; Cox 2003; Lavigne 1999; Roland 2000; Večerník and Matějů 1999). The EU accession negotiations prompted further economic reforms so the countries would be in compliance with EU standards (Landesmann and Rosati 2004; Nugent 2004). These economic transformation processes created previously unknown economic uncertainties and conditions, which resulted for some in economic success and for others in unemployment and declining standards of living. Furthermore, the changes in production, due to increased international competition, had disproportionate impacts on certain regions of the countries. High unemployment and decreased regional GDP are typical in regions that relied heavily on heavy manufacturing, antiquated factories, or industries that could no longer compete. Applying the logic of the withdrawal hypothesis, we anticipate that in regions experiencing more severe economic conditions, turnout rates will be lower.

H6: A strong economy should lead to high turnout rates and a weak economy should produce lower turnout rates.

DATA AND METHODOLOGY

To study the determinants of voter turnout in the EP elections, we have compiled a dataset at a sub-national level from the Eurostat REGIO database and country statistical offices. These data are disaggregated by region within each country at different levels referred to as “NUTS,” Nomenclature of Territorial Units for Statistics. The NUTS territorial units were established to provide standard regional statistics for the EU and are used for policymaking and analysis. The NUTS nomenclature is a three-level hierarchical categorization that divides each of the 25 EU member states into a whole number of NUTS-1 regions. Each of these NUTS-1 regions is then

divided into a whole number of NUTS-2 regions, and so forth.⁴ Despite the goal of creating comparably sized regions at the same NUTS level, each level still contains regions that differ in area and population. The NUTS-1 level in some cases, such as the Czech Republic, is the entire country. But in other countries with large populations, such as Poland, the NUTS-1 level encompasses multiple regions. In some countries, such as Estonia, Latvia, Lithuania, and Slovenia, because of their small populations, the NUTS-1 and NUTS-2 levels remain the entire country. However, at the NUTS-3 level, these particular countries are divided into multiple areas.

We use the demographic and economic data at the NUTS-3 level, which loosely corresponds to the district-level. For our eight countries, this produces a sample size of 119. While other scholars have employed regional or district data to study voting behavior in national elections in post-communist Europe (Pacek 1994; Roper 2003), we are unaware of other researchers using the NUTS-3 territorial level to study voter turnout.

There are some key advantages to using NUTS-3 level data rather than national-level data. First, the larger sample size affords us greater confidence in our statistical results. Second, as noted above, we have much greater variance in many of our independent variables than we would at the national level – particularly with the education and age measures. This may result in different overall findings than we would achieve with national-level data. And third, striking disparities of income and opportunity exist within these countries that would be masked in a more aggregated analysis. These regional economic differences will likely lead to differences in political behavior and views of how the EU will benefit or harm their local community interests.

All variables, except the country dummy variables, are measured at the NUTS-3 level. The electoral data have been collected from the National Electoral Institutes of each country. The economic and socio-demographic data came from the Eurostat REGIO database and when data were missing, we compiled them from the National Statistical Institutes of each country.⁵

The dependent variable in our models is the EP turnout rate in each NUTS-3 area. Turnout is calculated as the number of ballots cast divided by the number of registered voters. The economic measures used to test the impact of economic conditions on turnout are: the rate of unemployment

⁴ More precisely, the NUTS nomenclature subdivides the territory of the European Union (25 countries) into 89 regions at NUTS 1 level, 254 regions at NUTS 2 level and 1214 regions at NUTS 3 level. More information on the NUTS nomenclature may be found on the Europa web site: http://europa.eu.int/comm/eurostat/ramon/nuts/home_regions_en.html.

⁵ Additionally, for some Polish and Latvian measures, NUTS-3 level data were unavailable. With the assistance of Eurostat, we were able to aggregate the data from smaller territorial units for these countries into the NUTS-3 units.

in 2004, the level of GDP per capita in euros in 2002, and the average growth rate of the GDP between 2001 and 2002.⁶ These measures are all calculated at the NUTS-3 level.

The socio-demographic variables used in the model are education, age and population density and are measured at the NUTS-3 level. Education is the percentage of the population over 15 years old whose education level is above the secondary level. Population density is the number of thousand habitants by square kilometer in the district. Age is measured as three separate variables. First is the percentage of the population over 20 that fall between 20 and 29 years old. Second is the percentage of the population over 20 who are between 30 and 59 years old. And finally, we measure the percentage of the population over 20 who are over 60 years old.⁷ This categorization allows us to isolate the young and older people, whom we expect to turn out at lower rates than citizens who fall into our broad middle-aged category.

Support for the European Union is measured as the percent of voters who cast a “yes” vote in the district during the European Union referendum in 2003. While many scholars who have incorporated a measure of EU support in their turnout models have used aggregated survey measures of support, the referendum results have some unique advantages in these new member states. First, we have an accurate measure of support for the EU. By using the poll result, we avoid the problems of survey respondents offering “socially acceptable responses” rather than their true preferences. Second, this measure of support is derived from a tally of people who have the potential to be politically active, since they turned out in the referendum. Third, while the referenda were not held in all eight countries on the same day, they were all held fairly close to one another (between March 2003 and September 2003) and not too long before the June 2004 EP election. And fourth, this measure of support is available at the district level, whereas the survey results are only available at the national level. This offers us the opportunity to take into account the variance of EU support within the different countries, and that has not been done by previous studies using survey data. The average percent of voters that cast a “yes” vote is 80.73 % for our countries, but varies between a minimum of 48.43 % in one Latvian district and a maximum of 96.10% in one Slovak district.

Since our sample consists of many observations (the 119 territorial units) in different countries (8 countries), the standard OLS estimation may not be the appropriate methods to

⁶ While the unemployment measures are now available for 2004, national account data take longer to be published and thus the 2002 GDP data are the most recent data available.

⁷ The sum of these three population variables is equal to one.

estimate our data. Rather, the fixed effects (FE) model enables us to account for country specific factors, by introducing a set of dummy variables in the regression, one for each country less one to avoid the dummy trap (the FE is also called the least squares dummy variable approach). An F test is used to test the efficiency of the FE model over the OLS model.⁸

What country-level factors might be captured in this type of regression model? Previously we discussed the need to account for Lithuania holding its presidential election simultaneously with the EP election. This impact will be captured in the Lithuania dummy variable. Another example, suggested by Auers (2005) is that turnout in Slovakia might have been quite low due to voter fatigue, since the country had multiple elections earlier in the year. Further differences that might work to elevate or lower turnout across an entire country may include party system differences, differences in money spent on the campaigns, and other national attributes that may influence electoral behaviour.

RESULTS

In table 1, we present the regression analyses of four slightly different models – each uses a different combination of independent variables. The regressions are all very significant, since, according to the R² value, we explain more than 95 percent of the variance in turnout. Since a pooled cross-sectional model may violate the homoskedasticity assumptions of the OLS model, the estimated test of statistical significance for individual coefficients (the Student t) are based on White's (1980) heteroskedastic robust standard errors.⁹

Our expectation regarding the impact of the economy on voter turnout was that turnout would be lower in regions with worse economic conditions. Indeed, we see evidence of “political withdrawal” due to economic conditions in each of these models. Each of the four models incorporates the unemployment rate and in each model the unemployment regression coefficient is negative, as expected, and attains the highest level of statistical significance. This confirms that the level of participation is lower in regions experiencing economic hardship. When we include other economic measures with unemployment, the effect of unemployment remains strong. In model 2, the coefficient associated to the rate of economic growth variable (GDP growth) is not significant at all. We tried other measures of economic growth (such as the rate of growth of the GDP per capita) and growth over a longer period (such as the rate of growth over the period 1999-2002), but none of

⁸ That is to test the hypothesis that there is no difference across countries.

⁹ When the White's method is not used, the value of the estimated standard errors for the individual coefficients does not vary much, which suggests that heteroskedasticity is not really an issue in our data.

these proved to be significant. In the third model, we see that GDP per capita, also does not reach statistical significance.

However, closer examination of GDP per capita in model 3 reveals a problem of multicollinearity. In models 1 and 2, as expected, turnout is higher in the regions where the population is more educated. The coefficient associated with the education variable is positive and highly significant. The education variable in model 3 is smaller than in the previous two models. Because regions with a more highly educated population are also those with greater income, the simultaneous introduction of these two variables in the regression induces a problem of multicollinearity. To correct for this, and to assess the true impact of GDP per capita, we suppress education by excluding it from model 4 and we see that GDP per capita, does have a statistically significant positive effect, which suggests that the more prosperous regions have higher turnout rates.

In summing up the effect of economic conditions on turnout, it is fair to say that unemployment matters and it matters in a way that reduces turnout. Further, once education is removed from the model, higher levels of GDP per capita lead to higher turnout. The inclusion of this measure rather than education produces a slightly better model fit, suggesting that the economy does indeed make an important contribution to understanding turnout. The standardized coefficients for model four show the substantial impact of the GDP per capita measure. Excluding the country effects, this is the explanatory factor that has the greatest impact on turnout. These findings are consistent with the withdrawal hypothesis.

These findings mesh neatly with the findings of Pacek (1994) and Kostadinova (2003). Pacek used only the unemployment rate in his turnout models and found that higher unemployment in districts produced lower turnout. However, Kostadinova (2003) tested the withdrawal hypothesis in her national-level time-series analysis of turnout in post-communist countries and found no statistically significant effect. This, however, squares with our finding, because she used GDP per capita growth and inflation measures rather than unemployment rates and/or GDP per capita.

Table 1: Voter Turnout in the 2004 European Parliamentary Elections

Independent variables	model (1)	model (1) Beta coefficients	model (2)	model (3)	model (4)	model (4) Beta coefficients
constant	8.27 (0.41)		59.53*** (6.31)	74.87*** (5.94)	57.41*** (5.65)	
Unemployment	-0.208*** (3.85)	-0.144	-0.205*** (3.80)	-0.179*** (3.10)	-0.171*** (2.84)	-.119
GDP per capita				0.074 (1.34)	0.130*** (3.47)	.178
GDP growth			4.31 (0.84)			
Education	23.88*** (4.22)	0.286	23.03*** (4.21)	16.67** (2.10)		
Pop 20-29	76.96*** (2.86)	0.151	22.20 (0.25)			
Pop 30-59			-55.41*** (3.11)	-70.34*** (3.02)	-87.62*** (4.30)	-.146
Pop >60	54.72*** (3.05)	0.163				
Pop Density	2.15** (4.69)	0.134	2.11*** (4.64)	1.48** (2.23)	1.38** (2.19)	.086
Yes Vote	0.060* (1.73)	0.056	0.055 (1.59)	0.074** (2.19)	0.087** (2.49)	.082
Czech Republic	-13.18*** (8.40)	-0.492		-16.96*** (6.89)	6.52*** (8.66)	.276
Estonia	-29.27*** (14.14)	-0.590	-13.61*** (4.26)	-27.84*** (13.66)	5.97*** (5.08)	.120
Hungary	-7.81*** (4.63)	-0.294	7.35*** (7.76)	-9.40*** (4.02)	16.33*** (15.02)	.614
Lithuania			15.71*** (8.48)		29.91*** (28.48)	.835
Latvia	-2.17 (1.29)	-0.044	13.51*** (11.24)	-3.27 (1.61)	23.41*** (18.83)	.472
Poland	-20.94*** (10.38)	-1.021	-4.99*** (3.75)	-21.78*** (9.59)	4.40*** (4.53)	.215
Slovenia	-15.69*** (10.23)	-0.475	-0.047 (0.04)	-19.05*** (5.89)	5.79*** (4.34)	.175
Slovakia	-25.44*** (12.92)	-0.641	-9.97*** (9.38)	-26.21*** (12.20)		
Adjusted R ²	0.9514		0.9512	0.9520	0.9560	
N	119		119	119	119	

- Fixed effects regression estimation

- Student T-statistics (corrected by the method of White [1980]) are given in parentheses.

*** statistically significant at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level.

The results concerning the age structure of the population are intriguing because they do not fit the hypothesis in H3. Turnout is higher in regions with the largest percentages of young people and older people and lowest in the regions with the highest percentage of voters in the middle-age range 30-59. In model 1, for example, we exclude the middle-aged group,¹⁰ and we see the coefficients on “Pop 20-29” and “Pop >60” are positive and statistically significant. Conversely, in models 2 and 3, there is a statistically significant negative effect for middle-aged citizens. In areas with a large middle-age population, turnout is lower. Moreover, there is no difference between the regions that have a high percentage of young persons compared to those that have a high percentage of older people, since, when we excluded one of these variables from the regression, the coefficient associated to the other variable is not significant.¹¹ We can also see this in the standardized coefficients for model 1 (under column heading Model 1 Beta coefficient), where the relative strength of these two variables is approximately the same. In models 3 and 4 we include only Pop 30-59, which is equivalent to introducing both “Pop 20-29” and “Pop >60” (as in model 1).

What explains this surprising relationship between age and turnout? One possibility is that it is something unique to post-communist Europe. Tworzecki (2003), using survey data from the mid-1990s plots reported turnout by age group (4 age categories) in Hungary, Poland, and the Czech Republic. The Polish trajectory is as we hypothesize; however, in the Czech Republic and Hungary, while turnout is low for people under 30, it increases for the next age group and then essentially remains at the same level over the next two age categories. In the case of Hungary, turnout is slightly higher for people age 61 and over, than for people in the 46-60 age group (Tworzecki 2003, pg 166). This evidence suggests that turnout remains strong among the group of people above age 60, though it doesn't buttress our finding of high turnout in regions with a high percentage of young people.

The more puzzling relationship is why we see higher turnout in regions with a larger share of the population under age 30. In trying to explain these relationships, we risk committing the ecological fallacy (Robinson 1950). One possibility then, is that the finding is a result of the aggregate nature of the data, which is obscuring the actual individual-level relationship. It is possible that the nature of the election is sufficiently different enough to draw the young population to the polls. If the young are more enthusiastic about the European Union and have a greater vested

¹⁰ Since the population variables are each a percentage of the population over age 20 that falls into the age category, we cannot include all 3 variables at one. If we did, we would have perfect multicollinearity (Lewis-Beck 1980).

¹¹ This is partly seen in model 2. We ran another model (not presented on the table) that included Pop 30-59 and Pop >60 that produced statistically insignificant coefficient from Pop>60.

interest in EU policies, since they make-up the cohort that has the greatest mobility and able to take advantage of the new opportunities afforded to them, this could help explain our result. However, for a more conclusive explanation, we await individual level analyses of EP election participation.

As expected, the coefficient associated with the population density variable is positive and highly significant. In more densely populated areas, turnout is high. In more rural areas, turnout is low. However, one can notice that this coefficient loses some of its statistical significance and the value of the coefficient decreases once the GDP per capita variable is introduced in the regression (models 3 and 4). Again, this is a problem of multicollinearity that induces instability for the estimated coefficient. The major metropolitan areas, where population density is the highest, such as Prague, Warsaw, or Budapest, are also the richest areas.

The “Yes Vote” variable is the percent of voters who voted “yes” in the referendum to join the EU. We use this as a measure of support for the EU and hypothesized that turnout would be higher in regions with higher EU support. We see that this relationship holds, the coefficient associated to the “Yes Vote” variable is positive and, except in one model, is significant. Nevertheless, the other variables, unemployment and the socio-demographic variables have a stronger substantive impact on turnout rates than support for the EU (yes vote), as seen in the standardized coefficients presented in the standardized coefficient columns next to models 1 and 4.

Our finding that EU support matters for turnout sets our results apart from many other analyses of EU turnout. Why have we found that EU support matters, while others have failed to find a relationship? One possibility, suggested above, is that support for the EU may matter more in the post-communist states than in the established member states, because of the communist political and economic legacies. For some citizens, membership in a European economic and political institution is the antithesis of their lifelong beliefs. While some citizens in the established member states may hold the same views, a larger share of the post-communist populations may hold these views, and hold them strongly. This may then be a primary cause of abstention. A second possibility is that this result stems from our use of referendum results rather than aggregated survey responses. If referenda results are a more accurate reflection of support for the EU than survey responses (in particular because it avoids the problems of survey and sampling errors) this may contribute to our finding. Additionally, the use of district-level data, instead of national-level data, to test for the influence of EU support on turnout is more appropriate, since a national-level EU support indicator may conceal high variance inside countries.

Finally, Table 1 shows the coefficients associated with the country dummy variables. As we described before, a standard OLS estimation would not have been appropriate here and we instead use a fixed effects model. Indeed, we run a F-test to assess the efficiency of the fixed effects model compared to the standard OLS model. The value of the F ratio is 123.59 (model 1), which is well above the value of the F ratio in the 1% table ($F(7,105)=2.64$). The coefficients associated with the dummy variables attest again to the differences in turnout levels that were visible on Figure 1. After controlling for the other factors, turnout is higher in Lithuania than everywhere else except in Latvia. We see this in models 1 and 3, where Lithuania is the excluded dummy variable and all the other dummy variables are negative and statistically significant (except in Latvia). High turnout in Lithuania was expected as discussed in hypothesis H1, because of the simultaneous national election. In model 4, we can see that Slovakia exhibited the lowest turnout among the East European countries.

CONCLUSION

By using data at the NUTS-3 sub-national level, where political, social, and economic variables can be measured, we are much better equipped to test the impact of these factors in determining voter turnout rates compared to national-level studies. At the national level, the socio-demographic aggregate measures have little variance, and thus they offer only minor contributions to explaining differences in national-level turnout (Franklin et al. 1996). However, once we disaggregate the data into territories within countries, we obtain much greater variation in most measures. The NUTS-3 level data provide us with a sample size large enough to grant confidence in our findings. The results are much more reliable than if this study had been carried out at the country level with a much smaller sample size.

Use of the NUTS-3 level left us with a challenge of how to measure EU support. Previous studies that included this variable at the aggregate level used aggregated survey responses (Franklin et al. 1996; Mattila 2003), but consistent survey data are not available currently at the NUTS-3 level across these countries. However, because the EP referenda were held in the year prior to the EP elections, and the referenda results were available from the national election committees at the NUTS-3 level, we were able to use this measure to assess the relationship between support and turnout. This is a one-time opportunity, since by the time the next EP election occurs, the referenda results will be too outdated to be a reliable measure of an area's level of EU support. Our analysis confirms the theoretical argument posed by us and others, that in regions with higher levels of EU

support, turnout will be higher. Still, our result is distinctive, as others have failed to find evidence that EU support matters for EP turnout at the aggregate level.

Our central theoretical interest in this paper was to determine the impact of economic conditions on EP turnout in the post-communist countries. Given the major economic reforms enacted in these countries during the last 15 years and their disparate impacts on different regions of the countries, we expected to find lower turnout in areas that were less prosperous. Our results confirm Rosenstone's (1982) withdrawal hypothesis. Unemployment proved particularly important in understanding turnout in our models. If the argument holds that people experiencing economic duress will be focused on making ends meet rather than the more peripheral world of politics, we should most see this pattern in areas where there is high unemployment. Not having a job is typically a more difficult situation than having a job that pays meagerly. The impact of living in an area with high unemployment and low per capita GDP may increase citizens' concerns about their future well-being and if they are unemployed, it may make it even more difficult to find a job in the area.

What do these findings mean for the future study of EP turnout? First, there is the question of whether or not the impact of the economy and EU support are transitory and/or unique to the post-communist countries. It may be that the significant and disruptive economic changes in these countries have amplified the withdrawal effect and that in the future, the economy might not have such an impact on turnout. Further, the recent debates and referendum votes on "returning to Europe," may have heightened awareness and strengthened feelings about the EU to the point that it affected turnout in these countries' first EP election. Over time, the awareness and feelings about politics in Brussels may fade, thus changing the dynamics of EP turnout.

The NUTS-3 level of analysis that we used in this study offers social scientists a new way to study aggregate-level relationships, with many benefits that are not available at the national-level of analysis. Since data can be gathered on not only turnout, but also on election and referendum results, this is a useful resource for researchers wanting to study various aspects of elections in the EU member states. In particular, it may be interesting to assess the total impact of economic conditions and EU support on the actual outcomes of the EP elections. For example, if turnout was low in regions with poor economic performance, what parties receive support from individuals who, in these regions, did indeed decide to cast a ballot? Since the economy and EU support likely impact which parties are ultimately elected to the EP, and the level of turnout may explain results of the EP

elections, the total impact of the economy and EU support is their indirect impact through turnout rates plus their direct effects on election results.

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