Chapter 11

What can ecological inference tell us about the Second-Order-Election-Thesis in the Czech Republic and Slovakia?

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Introduction

On June 10-11 2004 the electorates of the Czech Republic and Slovakia voted in their first European Parliament elections in a European Union of twenty-five member states. These states have much in common given the fact they are both former components of a federation that was dissolved on January 1 1992 and have similar political institutions and have followed a similar electoral cycle with general elections within months of each other. For these reason, one would expect similar kinds of electoral behaviour in their first European Parliament elections. This was not the case. The only common pattern was the relatively low level of electoral participation, which in both cases was considerably less than the previous general election (Czech Republic 58/28 percent; Slovakia 70/17 percent).

In fact the voting patterns observed could be said in some respects to be completely different for at least four reasons. First, the main governing party in the Czech Republic – the Social Democrats (CSSD) suffered heavy losses in June 2004 where their level of support declined to less than a third of that attained in the previous general election in 2002. In contrast, within Slovakia the main governing party – the Slovak Democratic and Christian Coalition

(SKDU) saw its level of support increase from 15 to 17 percent. Second, opposition parties in the Czech Republic maintained or increased their support base. However, in Slovakia many opposition parties were not successful. For example, the Movement for a Democratic Slovakia (HZDS) did not get the highest single vote share as was the case in all previous elections.

Third, in the Czech Republic, small parties such as the European Democrats (SNK-ED) and Independents (NEZ) who had not won a single seat in the Chamber of Deputies in 2002 were successful in winning five seats. Within Slovakia only parties that had won seats in the 2002 general election took seats in the European elections, where extreme nationalist, communist or anti-EU parties had no success. Moreover, the governing parties in Slovakia won eight of the fourteen seats while in the Czech Republic incumbent parties won just four seats out of twenty-five.

Fourthly, voters in Slovakia over the last decade have been very mindful of the EU issue. The EU was a central issue in three recent elections (i.e. the general elections of 1998 and 2002 and the accession referendum in 2003). Very few other countries have had a similar level of exposure to the debate surrounding the domestic impact of EU membership. Lastly, during the first four months of 2004, Slovak voters participated in two rounds of a controversial Presidential election where the government's (SDKU) candidate lost out to opposition nominees. The fact that voters in the Slovak Republic were in June 2004 voting in the fourth national election in a two year period was seen to result in "electoral fatigue." Such fatigue for voters and parties was seen as a contributing factor to the low turnout observed in 2004 (Henderson 2004: 3).

This brief review of the differences in voting patterns and immediate political context in the Czech and Slovak Republics highlights an important point. Our expectation that countries with similar political institutions and positions

within the electoral cycle should exhibit the same electoral behaviour in the European elections seems implausible. More particularly attempts to impose the logic of the Second-Order Election-Thesis (SOET) to both of our case studies without taking context into consideration would seem to be disingenuous to both the theory and our understanding of electoral behaviour. Of course, the fact that the Czech and Slovak Republics exhibit different patterns of electoral behaviour is less interesting than the more general question if national patterns identified by the SOET since 1979 are evident in sub-national data?

Consequently, in this paper we will investigate the SOET at the sub-national level using aggregated electoral statistics patterns of vote switching in two recent accession states. We believe that the Czech and Slovak cases represent an invaluable opportunity to test the insights derived from the SOET over the past quarter century in Western Europe. This is because these two cases provide additional variance on many of the variables of interest, but nonetheless allow valuable analytical leverage to be gained from the fact that both states through sharing a common history within the Czechoslovak Federation (until dissolution in 1992) have very similar institutional structures. Moreover, we believe that the relative stability of both party systems makes application of the SOET appropriate (note, Marsh 1998, 2000).

This paper is unique in using an ecological inference technique on both national and sub-national data to examine two of the central hypotheses of the SOET – lower turnout in the European elections and increased support for smaller parties at the expense of established larger parties. In the past researchers have used national level statistics or individual level survey data to study vote-switching behaviour. We will endeavour to extend this line of research by using official electoral data at the district level to demonstrate how both national and sub-national context is important in understanding electoral behaviour for different levels of governance.

The first section of this paper will outline the core ideas behind the SOET. The following section outlines the key features of the SOET and those hypotheses that form the heart of this aggregate level theory of vote switching from first to second-order elections. The third section outlines why an effective testing of the SOET requires use of an ecological inference methodology. The fourth section outlines the data and research approach used in this paper where the insights offered by ecological inference estimates are compared with voter transition estimates from two individual level survey datasets. Thereafter, there is a presentation of our empirical results where various aspects of the SOET are examined in greater detail. In the final section there is brief discussion of the implications of this research and some concluding remarks.

Voting behaviour in systems of multi-level governance

Liberal democracies are composed of a variety of executive institutions based on citizen representation relating to the business of governance at different levels (i.e. municipal, regional, national upper and lower chamber elections, national referendums, presidential polls and European elections). As these various political institutions fulfil different roles where each has different powers and competences this has a determining effect on citizens perceptions of the similarities and differences between different election types. This fact has potentially important consequences for electoral behaviour.

Traditional models of voting such as party attachment and class voting suggest that citizens will participate at the same rate in all elections and make consistent vote choices. This is because the motivation underpinning vote choice is long-term in nature. Consequently, no matter what the election type loyal party supporters will turnout to vote for their party, except in situations of illness and old age or infirmity. However, the empirical evidence from

many political systems that have two or more types of elections is that voter turnout and party/candidate choice is not constant.

This implies that voters modify their electoral behaviour on the basis of election type. Therefore from the party identification literature one can imagine voters under the influence of short-term factors switching their vote to another party or deciding not to participate. However, this is not the only possible explanation. There are a number of other voting theories that start off with the assumption that voters do not see all elections as being equally important – there is in short a hierarchy of elections and this determines electoral behaviour.

The most influential theory of electoral behaviour change in national and European elections is the Second-Order Election-Thesis. This explanation of differential turnout and party switching was developed after the first European elections in 1979 on the basis of insights from regional voting patterns in Germany and differences in vote patterns in mid-term (Congressional) and Presidential elections in the United States (Reif and Schmitt 1980; Marsh 1998).

Second-order election thesis

The Second-Order Election-Thesis is based on the assumption that voters have a hierarchical view of different types of elections. If this assumption is false voters will treat different elections types in the same manner. In political systems where there are high levels of party identification or class voting the patterns predicted by the SOET should not be present. This is because partisan voters would participate in all elections and vote for the most part in a consistent manner.[12]

The empirical evidence for national, sub-national and European elections illustrates that the pattern of electoral behaviour is significantly different

thereby lending general credence to the SOET (e.g. Oppenhuis 1995; Franklin et al. 1996; Heath et al. 1997; Marsh 1998; Mattila 2003; Ferrara and Weishaupt 2004; Carrubba and Timpone 2005). This is not to suggest that the insights derived from the SOET have been observed in all research on European elections or elections in multi-level systems (note, Blondel et al. 1998; Manow 2005; Jeffrey and Hough 2003). Our goal here is not to review the SOET literature, but rather to examine its predictions using similar data from which it was originally developed.

In this respect, it is important to note here that comparison is made between aggregate level electoral data where patterns for the same geographical units at different time points for different election types are compared. It is appropriate at this point to list the main hypotheses made in the SOET as outlined by Reif (1984).

H1:

Voter participation in a European election will be lower than the previous general election and this is an indicator of the relative importance (how much is "at stake") of these types of elections in the eyes of voters.

H2:

Smaller parties that may be new and espouse radical policy proposals will do relatively better in European elections than in general elections. As a result more established large parties will see their general election level of support decline in European elections.

H3:

European election campaigns are a mix of European and national issues where the latter tend to play a more important role.

H4:

Change in electoral support between general and European elections for parties participating in government will be determined by position within the

national electoral cycle. Government parties will lose out most at the mid-term point of this cycle.

Using only aggregate level electoral data, which is the primary evidence upon which the SOET was originally constructed, it is only possible to examine H1 and H2 using the evidence from a single EU member state such as the Czech Republic. H3 requires campaign data derived from individual level survey data or from the content analysis of party manifestoes or mass media. Official electoral results have no such information. Moreover, H4 can only be tested using cross-national data where there is variance on the election cycle variable. However, for the Czech and Slovak Republics the 2004 European elections occurred at the mid-term point of parliamentary election cycle. The last lower house elections were held in 2002 and the next are scheduled for 2006 so the government unpopularity factor should have been at something close to its maximum for the European elections.

Ecological inference and testing the second-order thesis

The act of voting is primarily an individual level phenomenon. Consequently the usefulness of providing explanations of electoral behaviour for whole national electorates across the European Union is limited if it does not address in some manner what individual level motivations determine electoral behaviour. In this respect, an ideal approach to testing all theories of electoral behaviour such as the SOET would involve being able to specify the individual level foundations that underpin the collective preferences of entire electorates.

Transposing aggregate level patterns of voting behaviour to the individual level through a simple process of correlation of aggregate units is problematic and is known as the “ecological inference fallacy” (Robinson

1950; Goodman 1953; King 1997). For example, a central feature of the SOET is that the timing of the European Elections within the national electoral cycle influences the level of electoral support attained by the main governing parties. This hypothesis is based on the simple methodology of *correlating aggregates* where countries that are closest to the mid-term between successive general elections will exhibit the greater losses for (large) governing parties. The reasoning here is that voters in the mid-term phases of electoral cycles vote against incumbent parties at a higher rate than all other voters. However, this conclusion is only valid if the different ratios of 'mid-term' (voters) and all others voters are not in themselves correlated with their voting behaviour.

For example, if government party voters in the last general election are more likely to switch their vote (to abstention, for example) in countries in the mid-term of an election cycle than those in other countries not at this point then the 'correlating aggregates' approach often used to examine this SOET hypothesis will be invalid because of the "ecological fallacy." This is because the loss of support by government parties may simply be part of a more general phenomenon of higher levels of electoral abstention that is itself somehow connected to the electoral cycle (Franklin et al. 1996).

It could well be that in some districts incumbent parties retain higher levels of support in European elections than opposition parties when faced with inflated levels of abstention, while in other districts electoral participation is equally low for all parties. The overall aggregated pattern for a country would suggest (incorrectly) that election cycle effects are correlated with loss in government party support (note, Manow 2005: 11, 14). The key point here is that correlating aggregates at the national level can be misleading as it may hide very differing patterns of electoral behaviour at lower levels of analysis.

Previous research on European elections and level of analysis

Empirical analysis of voting behaviour in European Parliament elections has followed two main research strategies. First, aggregate level analyses have

ignored the ecological inference problem and undertaken correlations and regression analyses of patterns across the EU member states that run the risk of being based on invalid inferences. The individual level patterns could be the opposite of those observed at the national level. Second, voting behaviour in European elections have been investigated using individual level survey data where the problem of unobserved individual behaviour is removed through asking voters to recount their own actions in post-election polls.

Since 1979 there have been European Election Studies (EES) in most or all member states using a standard questionnaire design. Unfortunately, the results of post-election surveys such as EES do not match the electoral results where there is significant over-reporting of turnout (Swaddle and Heath 1989; Granberg, Holmberg 1991; On the sources of over-reporting see Belli, Traugott, Young, McGonagle 1999). For example, in the Czech wave of the 2004 European Election Study over-reporting of voter turnout was 20 percent (perhaps in part the product of selection bias) and the profile of recalled party support in the 2002 Chamber elections and 2004 European elections is also inaccurate.

Consequently, electoral studies have two sources of information with different characteristics. Actual election results aggregated to the national or sub-units thereof are likely to be highly accurate, but are problematic for making inferences of voting decisions at the individual level using simple correlation. Individual survey data has a rich range of attitudinal variables that potentially facilitate explaining voters behaviour, but this data is likely to suffer from systematic and random sources of error. In contrast, officially validated electoral data is known to be accurate, however, individual level information is destroyed in the process of aggregation in order to ensure the secrecy of the vote choice. Consequently, attempts have been made to estimate this information using statistical methods incorporating all available information (Schuessler 1999: 10578; Wakefield 2004).

Ecological inference using the Logit method

The ecological inference method used in this paper is based on an aggregate level model of vote choice derived from an individual level model. Such an approach developed by Søren Risbjerg Thomsen (Aarhus University) over the last two decades is unorthodox because it depends on making some simplifying assumptions rather than simulating aggregate level behaviour from an individual level model. It is assumed that the probability that a single voter will vote for a specific party is based on three main factors (1) level of party attachment; (2) issue congruence and (3) general sympathy toward voting for a party (i.e. model intercept).[3] The individual model of vote choice incorporating these three factors is formulated as a directional model of vote choice (note, Thomsen 2000; Cleave et al. 1995).

Having formulated an individual level model of party choice it is now necessary to scale this model up to district (aggregate) level. Here we proceed by taking advantage of the empirical observation that parties often draw support from specific geographical regions. Moreover, the level of party attachment is assumed to be a party specific function of the voter in an issue space. It is possible to represent the voters' utility of voting for a number of competing parties as a multinomial logit model. If we now consider a typical research situation where we have aggregated electoral data it is assumed that the individual utility for supporting a specific party depends on the values of a series of latent variables representing a voters position on an unknown number of salient issue dimensions.

Within a specific district the (aggregate) number of voters choosing to support a particular party is based on the number or density of voters with similar utilities for parties who have similar positions on these latent issue dimensions. Within each district this aggregated orientation of party voters is assumed to be composed of unmeasured issue variables that are all normally distributed. In order to make a multiparty model tractable for estimation it is possible to approximate the choice for a single party (against all others,

including abstention) as a simple logit model. This means that the logit share of voters choosing a specific party in a particular district may be represented as a linear function of variables representing a series of unknown issue dimensions.

The party identification and issue positions in the linear logit models of aggregated vote choice for each district are interpreted as a general underlying predisposition toward voting for a specific party. This predisposition is seen to vary from district to district perhaps deriving from social class, religion and place of residence. The main implication here is that assuming an underlying predisposition implies that voting districts are not likely to be unique, but can in fact be grouped together into regions within similar political cultures. Therefore, while the issue positions of parties and the socio-demographic basis for electoral choice are most often stable across pairs of elections, these general predispositions toward voting for a specific party may weaken because of short-term factors (e.g. scandals, economic downturns, candidate effects, etc. which are represented by the model intercept).[4]

However, this weakening will depend critically on the strength and nature of the regional political culture. Thus the change in logit share for a party will be constant (despite random error) within regions that have a common political culture. This approach suggests that we should be able to find homogenous political regions composed largely of adjoining political districts that exhibit similar change in party logit scores in adjacent elections. To identify such regions a hierarchical cluster analysis on the level of party support attained in each district technique may be used. Political regions may thus be defined as aggregations of districts that minimise the sum of squares within each cluster (i.e. Wards method). Moreover, in order to reduce the impact of isolated, though dramatic gains, logit change from two consecutive elections for each party is standardised to stabilise the estimates produced.

If we now return to a comparison of party choice (i.e. one party versus all other possible choices) at the both the district and individual levels, we encounter an important problem. At a district level the relationship between votes for a specific party and all other parties (in a simple 2x2 table) in adjacent elections may be expressed as a Pearson correlation. However, at the individual level a similar (2x2) voter transition table representing the relationship between vote choices in two elections cannot be expressed as a Pearson correlation. This is partly due to the fact that individual level vote choice is non interval-scale level data. A more appropriate measure of association is the gamma (γ) correlation coefficient.

Therefore the relationships or correlations observed between vote choices at the district and individual levels are not comparable. This fits with the warnings made by Robinson (1950) that making cross-level inferences based on Pearson correlations is likely to be misleading, i.e. leading to the so-called "ecological fallacy." However, Thomsen (1987: 63) argues that the individual level Gamma correlation approximates the district level Pearson logit correlation when four assumptions are met.[5]

The four assumptions are (1) Functional homogeneity: the same individual level model can be applied to all voters. This is only possible if we have identified political regions using cluster analysis. (2) Isomorphism: the latent variables shaping vote choice at the individual and district levels must be the same. This means districts should not be large and heterogeneous. (3) There should be a high ratio between the variances in the individual and district level latent (issue) variables. This means that the ecological logit correlations can be substituted for the individual Gamma correlations. (4) Each response option alternative should be homogenous, i.e. even in two-party systems voter abstention should be treated as a separate category.

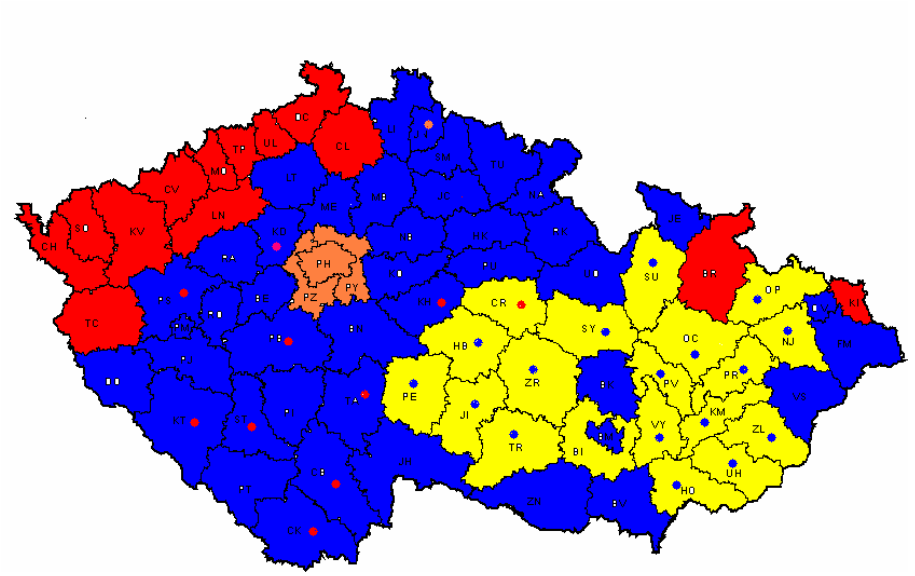
Data and research methodology

The logit method for ecological inference is based on having stable sub-national units where aggregated electoral data is available for at least one pair of elections. In the Czech Republic data was assembled from the official electoral sources of results from 159 geographical units (i.e. all counties are divided into urban and rural areas) for the 2002 lower chamber elections and 2004 European elections.[6] For Slovakia we have similar data for 79 districts for the last general election (also held in 2002) and June 2004 elections. As noted in the last section, one of the key assumptions of the logit method for ecological inference is the identification of homogenous geographic areas where the factors underlying electoral behaviour can be reasonably inferred to be the same.

In order to identify these homogenous electoral regions a hierarchical cluster analysis of the electoral results for all units in the Czech and Slovak Republics were performed.[7] Country and district electoral results for all major parties (plus other smaller parties coded as 'others') and abstention were transformed into standardised logit scores, as outlined in the last section. This data was then subjected to a hierarchical cluster analysis based on the Ward criteria for defining clusters. The results for both countries are shown in figures 1 and 2.

Within the Czech Republic this resulted in a four-region solution that was validated on the basis of location (e.g. the capital Prague constituted one single unit) and previous research. The four units identified by cluster analysis were: (1) Bohemia and urban Moravia; (2) Rural Moravia (3) Prague; (4) Northwest Bohemia.

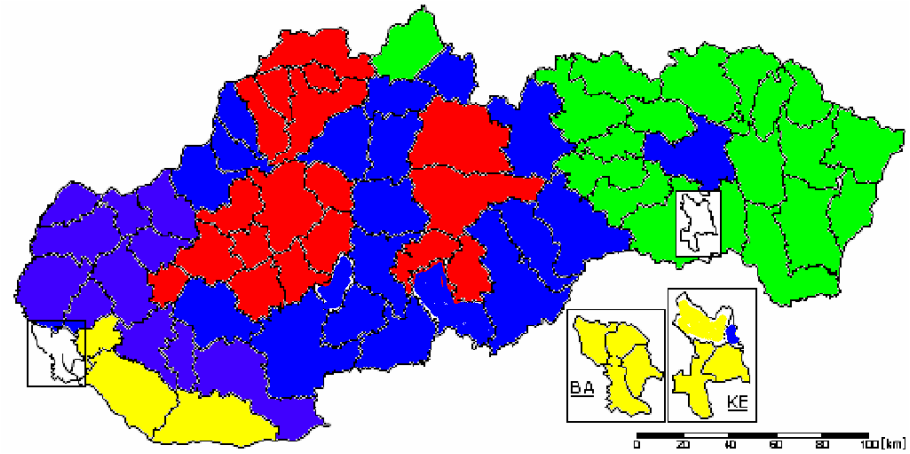
Figure 1: Political regions within the Czech Republic derived from a hierarchical cluster analysis of electoral results for the 2002 general election and 2004 European elections



Note the regions are numbered as follows (1) Bohemia and urban Moravia (blue); (2) Rural Moravia (yellow); (3) Prague (orange); (4) North-western borderlands (red). Districts with difference coloured solid circles at their centre indicate areas where there were urban/rural differences.

In the Slovak Republic a four-region solution was also chosen where comparison was made with the geography of ethnicity, religion, education, economic dependency, etc. These four regions may be labelled (1) Urban: (Bratislava, Kosice and the districts of Dunajska Streda and Komarno that lie to the south of Bratislava along the Hungarian border); (2) Western Slovakia; (3) Central Slovakia and (4) Eastern Slovakia. Having identified homogenous political regions within both the Czech Republic and Slovakia we are now in a position to employ the logit method of ecological inference on the actual (raw) county/district election results for both elections. However, before embarking on this task it is appropriate to compare the relative merits of using ecological as opposed to mass survey estimates of vote switching.

Figure 2: Political regions within Slovakia derived from a hierarchical cluster analysis of electoral results for the 2002 general election and 2004 European elections



Note the regions are numbered as follows (1) Urban: Bratislava, Kosice and the southwestern border districts of Dunajskă Streda and Komărno (yellow); (2) Western Slovakia (blue); (3) Central Slovakia (red) and (4) Eastern Slovakia (green). For inset maps BA refers to Bratislava and KE to Kosice.

Ecological inference and mass survey estimates of vote switching

It was explained in the previous discussion of the logit method of ecological inference that our ability to produce valid estimates of individual level vote transition behaviour is based on four key assumptions, i.e. functional homogeneity, isomorphism, high variance ratios at the individual and aggregate levels and use of homogenous response alternatives. In practical terms, the first two of these assumptions are the most critical. In this respect, Margolis (1988) has criticised the logit method by arguing that the functional homogeneity and isomorphism assumptions are unrealistic.

In defence of his logit method of ecological inference Thomsen (1987, 1999) has accepted that making of inferences from statistical analyses using ecological inference estimates are likely to suffer from systematic error if the assumptions made are invalid. However, the key merit of seeking to provide ecological inference estimates of vote switching is that (if we can ensure the

assumptions underpinning such inference are not seriously violated) there will be neither systematic nor random error. Ecological inference procedures are thus in theory superior to mass survey based estimates of vote switching because the latter are well known to suffer from response bias (e.g. misreporting) and random sampling error emanating from the surveying process (Berglund and Thomsen 1991: 14-17).

Of course the juxtaposition of these two techniques highlights the key advantage of using both ecological inference and mass cross-sectional survey based estimates as a means of cross-validation. This is an important consideration for two reasons. First, it is rare to have access to individual level voting data (which is hardly ever available because of ballot secrecy regulations) in order to directly assess the accuracy of ecological inference techniques. Second, access to large-scale panel surveys undertaken across two elections for cross-validation purposes is also problematic because these costly research enterprises are infrequently undertaken in many countries. The Czech and Slovak Republics typify the situation in most EU member states where such panel studies are rarely if ever undertaken.

The best that can be done in this respect is to use cross-sectional survey datasets that are readily available for cross-validation of the ecological inference estimates derived from the logit method. In the Czech Republic for the European elections of 2004 we have access to an (SC&C) exit poll and the post-election European Election Study dataset (EES 04). Within Slovakia we are restricted to use of the EES 04 survey data. Nonetheless, such data is sufficient for our limited purpose of ensuring that the assumptions underpinning our ecological inference estimates of vote switching between the 2002 and 2004 elections in the Czech and Slovak Republics are not seriously violated.

Cross-validation of aggregate and survey data estimates

For the sake of brevity we will focus here on available survey data from the Czech Republic and the methodological issues that need to be addressed when using such data for cross-validating ecological inference estimates. A key resource in this respect is an exit poll undertaken by a commercial polling agency SC&C for the state owned Czech Television (CT1) after the 2004 elections. By definition this type of survey while having a large number of respondents (n=9,028) relates only to those who voted (and who were willing to be interviewed) and so is likely to have some significant systematic bias in terms of the profile of the entire electorate most of whom (62 percent) did not vote in 2004.

There is also the Czech wave of the 2004 European Election Study (EES 04). This post-election survey was undertaken within a month of the European elections and has a relatively extensive range of attitudinal items for a sample of the total Czech electorate. However, its recalled vote measures while allowing us to construct a voter transition matrix is inaccurate because of well known *response bias* effects (Wright 1993; Tourangeau, Rips and Rasinski 2000). Details of all datasets used in this paper are given in the appendix.

In summary, our goal here (in terms of the Czech Republic) is to compare the estimates of vote switching derived from three different sources. Since none of the three data sources can be reasonably considered to be closer to the true (and unknown) voter transitions values we will simply examine how similar are the three sets of estimates using a simple summary measure (Duncan's dissimilarity index). The intuition here is that the variance in these three voter transition matrices encompasses the *true* vote switching values. On this basis, we have confidence in the voter transition patterns that exist in all (three) of our voter transition matrices, although the exact estimates derived from each dataset will most likely be different from the true value due to the presence of different sources of error and bias. As noted earlier, for the

Slovak Republic we will use EES 04 in a similar manner to cross-validate the ecological inference estimates derived using the logit method.

Comparison of ecological inference and survey estimates of vote switching

In order to be able to validly compare the ecological inference estimates with the results of the mass surveys the latter need to be adjusted to the true results at both elections just as is undertaken in the ecological analysis. If this adjustment were not made we would in effect end up comparing different types of estimates. As a result, our transition matrices would disagree in part because of adjustment differences. It is not possible to create a simple weight for two elections simultaneously, so an iterative weighting procedure is required. Here use was made of a log contingency table technique. This statistical procedure reweights the percentages of self-reported vote switching derived from survey data to match the actual election results. In order to undertake this iterative weighting process it is assumed that the underlying distribution of voting data is bivariate normal (for details see, Kostelecký and Čermák 2003).[8]

Empirical results

In this section we present our research findings in four steps. First, we outline the results our cross-validation tests where we compare our ecological inference estimates and those emanating from mass survey data. Second, we discuss our results for voter switching between government and opposition parties from the 2002 general elections and the 2004 European elections. This analysis reflects most directly on H.2 of SOET outlined earlier. Third, we examine the related phenomenon of vote switching between large and small parties. Again, H.2 suggests that smaller parties should draw support away from the larger parties. We test to see was this the case in Czech Republic and Slovakia in June 2004? Moreover, we also investigate the importance of regional differences. For example did the voters of Prague and

Bratislava/Kosice behave similarly thus indicating the presence of an urban voting pattern? Lastly, we will look in greater detail at the voter transition matrices for a selection of parties, i.e. main governing parties (CSSD and SDKU) and Christian Democrat parties (KDU-CSL and KDH) in the Czech Republic and Slovakia. Within all of these separate subsections we will make reference to H.1 of the SOET and discuss the impact of differential abstention.

Cross-validation of aggregate and survey data estimates of vote switching

At the heart of the SOET is vote switching between general and European elections. However, official electoral data on vote choice at the individual level is impossible to obtain and consequently completely accurate vote switching data does not exist. In this paper we have examined three separate estimates of vote switching for the 2002 and 2004 elections in the Czech Republic. The tables of vote switching in the appendix shows that the biggest differences between the ecological estimates and values derived from the ESS04 dataset relate to a systematic under-estimation of "core" support for CSSD, KSCM, ODS, KDU-CSL and abstainers by the logit method of ecological inference. The ecological inference estimates are higher for CSSD voters in 2002 deciding to abstain in 2004, while EES 04 estimates a higher level of abstention in both 2002 and 2004 for all voters than that produced by the ecological inference technique.

The implication here is that the logit method of ecological inference estimates indicate lower levels of party support and greater switching between parties (though not toward abstention) than EES 04. A similar pattern is observed for Slovak data except in the cases of the KDH and SMK parties.

More generally it is important to note that the voter switching matrices for making comparisons between the different datasets is based on a different

number of cells. The ecological inference and EES 04 estimates have 80 data points while the exit polls are based on 48 cells. This difference relate to the fact that the exit poll deals only with pre-defined major parties and excludes non-voters. This difference in effective data matrix sizes is likely to have some consequences on the estimation of the Duncan dissimilarity indices where the larger matrices employed in the ecological inference estimation procedure will yield lower dissimilarity values when compared to the surveys. Future research should attempt to identify an alternative dissimilarity measure that is more robust to differences in matrix size.

Figure 3a represents the overall pattern of dissimilarity between the different voter switching matrices used for analysis. These dissimilarity measures suggest that the ecological inference and EESO4 estimates of vote switching are more similar when comparison is made with the exit poll.

If both surveys were ideal in the sense of having only random errors around the true voter switching values they would have a lower dissimilarity value than that measure between each survey and the ecological inference estimates. This is not the case here and most likely relates to the characteristics of these polls noted earlier. Examination of the differences between the ecological inference estimates of vote switching for Slovakia indicates a close correspondence with the survey estimates as shown in figure 3b. This strong similarity between both sources of vote switching estimates may be due to the huge increase in electoral abstention in Slovakia between 2002 and 2004 (30 to 83 percent).

Figure 3a: Comparison of Czech voter transition matrices produced by the SC&C exit poll, the EES 04 survey and ecological analysis estimates derived from electoral data (Duncan dissimilarity indices)

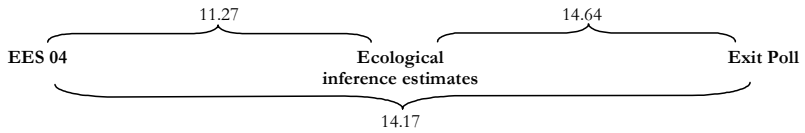
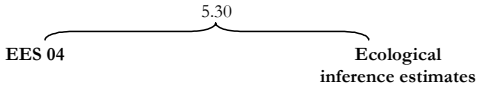


Figure 3b: Comparison of Slovak voter transition matrices produced by the EES 04 survey and ecological analysis estimates derived from electoral data (Duncan dissimilarity indices)

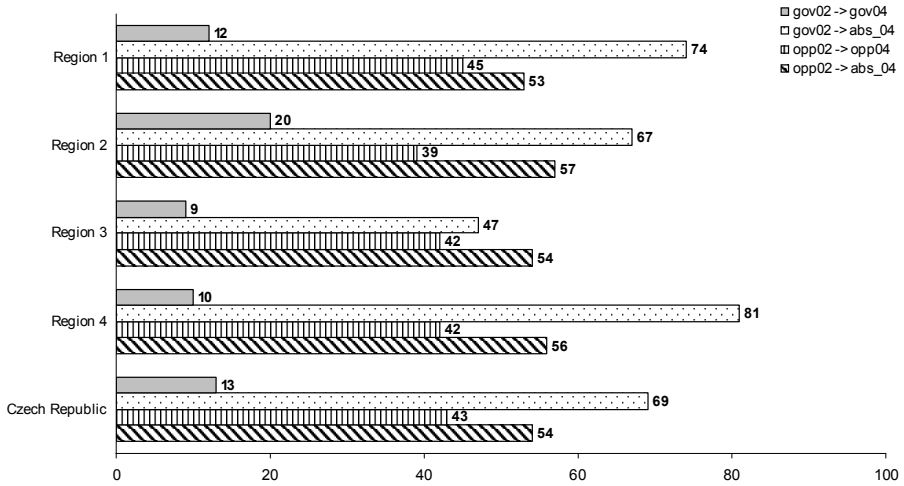


Note the Duncan dissimilarity index is computed as half the sum of the absolute differences divided by two. For more details, see Berglund and Thomsen 1990: 21, 47-50.

Analysis estimates of vote switching between government and opposition parties

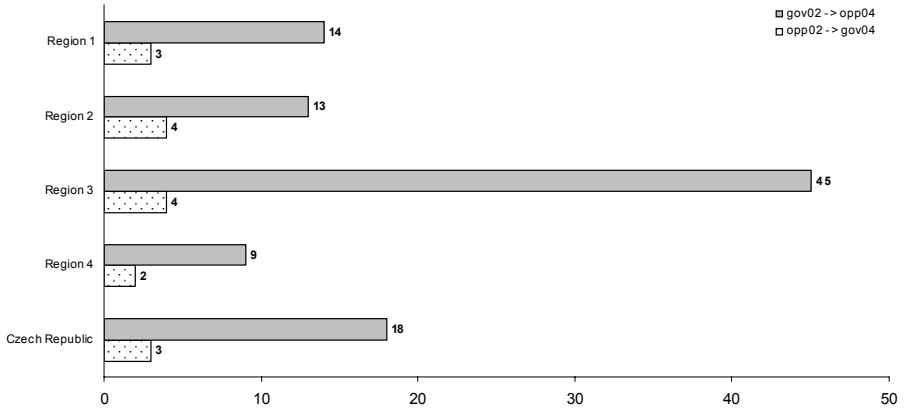
One of the central features of the SOET is that large, and most likely governing, parties will suffer losses during European elections. Let us first look at the situation in the Czech Republic. Our ecological inference results shown in figure 4a indicate that opposition party voters (in the last general election) are similar in all regions. More than half (55 percent) chose not to vote in 2004, while 43 percent remained loyal. Less than one-in-twenty (3 percent) switched to government parties.

Figure 4a: Comparison of level of vote switching away from government parties between 2002 and 2004 in the Czech Republic (per cent)



Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 1 are labelled as follows. Region 1: Bohemia and urban Moravia; Region 2: Rural Moravia; Region 3: Prague; Region 4: Northwest borderlands. The legend labels 'gov', 'opp' and 'abs' refer to government parties, opposition parties and abstention.

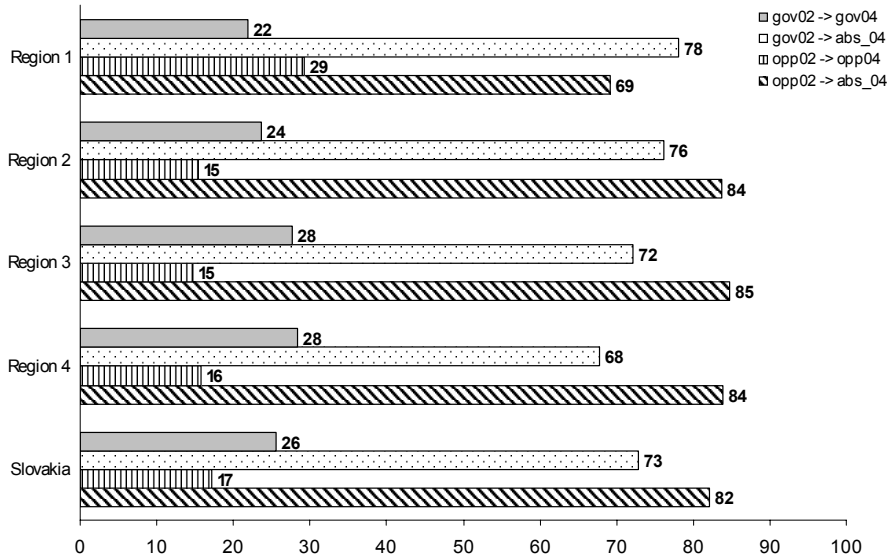
Figure 4b: Comparison of level of vote switching between government and opposition parties between 2002 and 2004 in the Czech Republic (per cent)



Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 1 are labelled as follows. Region 1: Bohemia and urban Moravia; Region 2: Rural Moravia; Region 3: Prague; Region 4: Northwest borderlands. The legend labels 'gov' and 'opp' refer to government parties, opposition parties and abstention.

Turning our attention now to government party supporters we find that the pattern of switching is more diverse. If we take each of the strategies open to voters we observe in figure 4b considerable regional variation. For example, in Prague 45 percent of incumbent party supporters switched to opposition parties in 2004. The national rate for this particular pattern was 18 percent. Differential rates of abstention for government party switchers also exhibit strong regional differences, where in the Northwestern borderland four-in-five did not vote, while in Prague the abstention rate was almost half this rate (45 percent). Rural Moravia was unique in its relatively high rate of party loyalty (i.e. one-in-five) in comparison to the national average of between 9 and 12 percent.

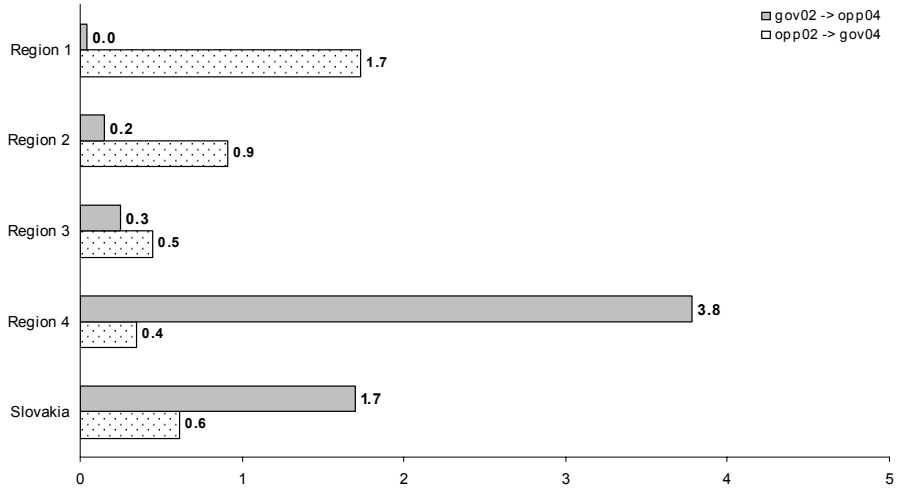
Figure 5a: Comparison of level of vote switching away from government parties between 2002 and 2004 in Slovakia (per cent)



Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'gov', 'opp' and 'abs' refer to government parties, opposition parties and abstention.

The situation in Slovakia was almost the same as in the Czech Republic as the levels of party switching among opposition party voters, as figure 5a demonstrates, were similar for all regions.

Figure 5b: Comparison of level of vote switching between government and opposition parties between 2002 and 2004 in Slovakia (per cent)



Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'gov' and 'opp' refer to government parties, opposition parties and abstention

However, figure 5b shows that the behaviour of opposition party supporters was different in the urban region (i.e. Bratislava, Kosice, Dunajska Streda and Komarno). Here abstention was lower than the national average and the level of loyal opposition party supporters was highest at 30 percent – this was more than twice the national average. Moving our attention toward government party voters in 2002 we can see from figure 5a that most Slovak citizens decided not to vote in 2004 (73 percent). More generally, the most urbanised region of Slovakia was characterised by higher levels of electoral abstention and the highest rates of vote switching from opposition to government parties. In contrast, as figure 5b highlights, the economically

depressed Eastern region exhibited the highest level of defection from government to opposition parties.

If we now compare the patterns in the Czech Republic and Slovakia, our ecological inference estimates suggest some important differences. Within Slovakia incumbent party supporters in urban areas had the highest level of non-participation. In contrast, in the Czech Republic electoral participation of incumbent party voters in Prague was 20 percent higher than elsewhere. However, Prague had the highest levels of switching toward opposition parties. More generally, the pattern of defection between the government and opposition blocs of parties was reversed. In the Czech Republic incumbent party voters tended to switch to opposition parties in 2004 (18 percent) while in Slovakia the opposite pattern prevailed (3 percent) in all regions except the western one.

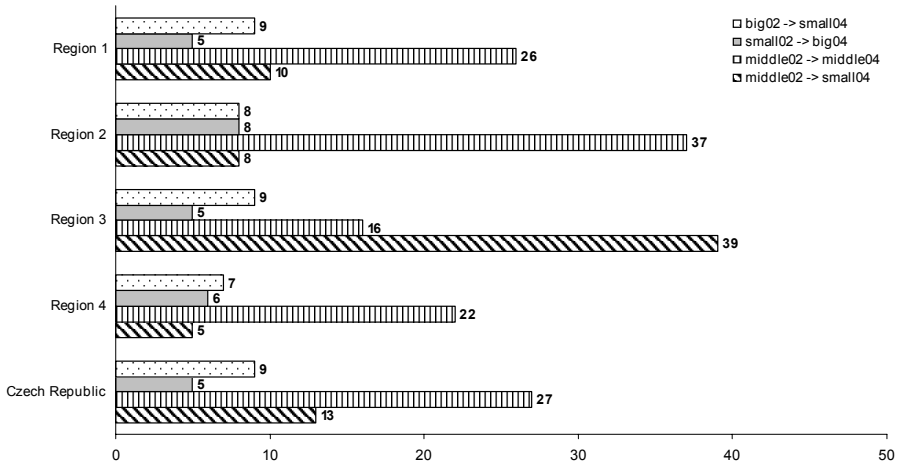
With regard to the SOET the important fact to emerge from our analysis here is that the ecological inference estimates suggest that there was a much higher rate of switching from government to opposition parties than vice versa. Moreover, in the Czech Republic this form of vote switching was five times greater than the rate of defection from opposition to government parties. In Slovakia this ratio favouring government to opposition switching was three-to-one. The general implication here is that government parties lose support in second-order elections as H.4 suggests, but this effect seems to be primarily the product of differential abstention. This result suggests that the scope of H.1 should be broadened in future research.

Analysis of vote switching between large and small parties

According to the SOET one of the key expectations is that we should observe loss of support for larger parties and a simultaneous gain for small parties with the remainder abstaining. This is the prediction of H.2 outlined earlier and we find in the Czech Republic that the level of switching between both types of parties is almost the same for all regions (with a marginally higher

rate in rural Moravia and the Northwest borderlands).[9] Figure 6a, highlights that the most loyal voters are those who support middle sized parties, i.e. the Christian Democrats and Communist Party – parties that exhibit the highest levels of party identification in previous research. However, there is an important regional difference because outside of Prague supporters of "middle sized" parties (in 2002) tended to remain loyal or switch to small parties, if they voted in 2004. Within the urban setting of Prague these "middle party" supporters (if they voted in 2004) tended to switch to smaller parties at a rate that that was three times the national average (i.e. 13 and 39 percent respectively), rather than remain loyal to their party (16 percent).

Figure 6a: Comparison of level of switching away from big to small parties between 2002 and 2004 in the Czech Republic (per cent)

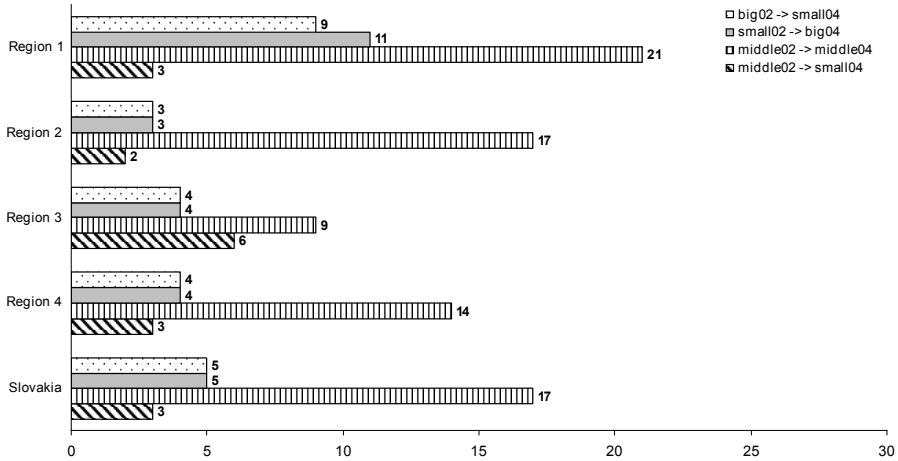


Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 1 are labelled as follows. Region 1: Bohemia and urban Moravia; Region 2: Rural Moravia; Region 3: Prague; Region 4: Northwest borderlands. The legend labels 'big', 'middle' and 'small' refer to big parties (> 20 percent support in 2002, i.e. CSSD and ODS), middle parties (10-20 percent in 2002, i.e. Koalice and KSCM) and small parties (<10 percent support in 2002).

Switching our attention now to Slovakia we observe in figure 6b that there is very little switching (3-4 percent) between large and small parties as H.2 of the SOET suggests. Here again there is an important regional difference where in urban areas there is a higher rate of party switching, but the

direction is opposite to that expected, i.e. from small parties to large ones. A brief examination of middle-sized parties indicates little systematic pattern of switching between 2002 and 2004. However, the degree of observed loyalty for this group of parties was highest in urban areas (21 percent) and lowest in central and western Slovakia (9 percent).

Figure 6b: Comparison of level of switching away from big to small parties between 2002 and 2004 in Slovakia (per cent)



Note estimates based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'big', 'middle' and 'small' refer to big parties (> 15 percent support in 2002, i.e. HZDS and SKDU), middle parties (10-15 percent in 2002, i.e. SMER and SMK) and small parties (<10 percent support in 2002).

If we compare the patterns prevailing in the urban regions of the Czech Republic and Slovakia we observe important differences. In Slovakia there are higher rates of switching among large and small parties, while in the Czech Republic the greatest level of electoral movement is associated with flows from mid-sized parties to small ones. More specifically, this pattern resulted from Koalice supporters shifting support to the European Democrats.[10] Having examined the pattern of vote switching for blocs of

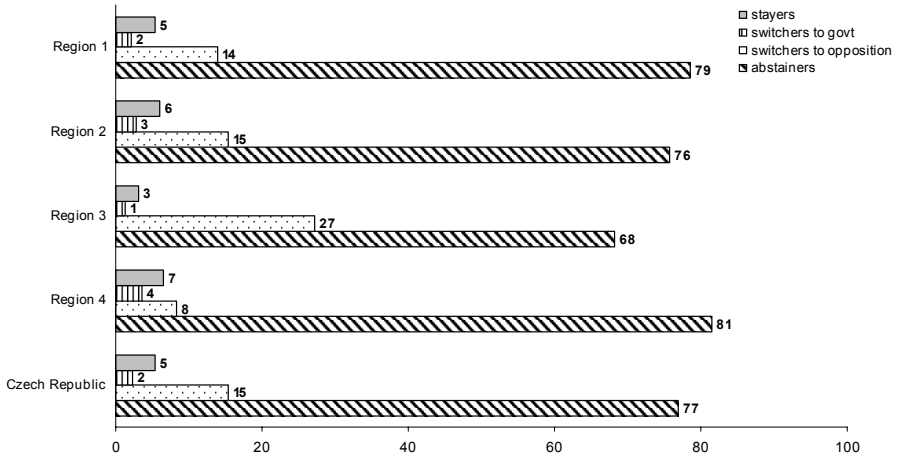
parties in the last two subsections, we will now briefly examine the experience of particular parties and see what other important lessons an ecological inference analysis can tell us about the applicability of the SOET to the Czech Republic and Slovakia.

A key question raised by the SOET is where do the gains made by small parties in European elections come from? Our ecological inference analysis indicates that in the Czech Republic vote switching between small and large parties between 2002 and 2004 was asymmetrical. Supporters of incumbent parties in 2002 who then switched to small parties in June 2004 constituted 2.8 percent of the total electorate. However, those flowing in the opposite direction made up a much smaller portion – 0.4 percent of all voters. Within Slovakia the overall pattern of voter transition is different. This is because large parties witnessed a net gain from small parties. In summary, our ecological inference estimations suggest that H.2 of the SOET applies to Czech Republic, but not Slovakia.

Ecological inference results for vote switching between parties

Having examined the pattern of vote switching for blocs of parties in the last two subsections, we will now briefly examine the experience of particular parties and see what other important lessons an ecological inference analysis can tell us about the applicability of the SOET to the Czech Republic and Slovakia. Rather than examine all parties we will restrict our attention here to vote switching among some of the government parties in the Czech Republic and Slovakia. This is because the electoral flows observed for opposition parties are largely the same for all regions. Looking first to the Czech Republic we can see from figure 7 that Social Democrat supporters had a higher rate of participation in Prague than elsewhere (32 percent compared to 23 percent). However, these voters also had the highest levels of switching to opposition parties (27 percent compared to a national average of 15 percent).

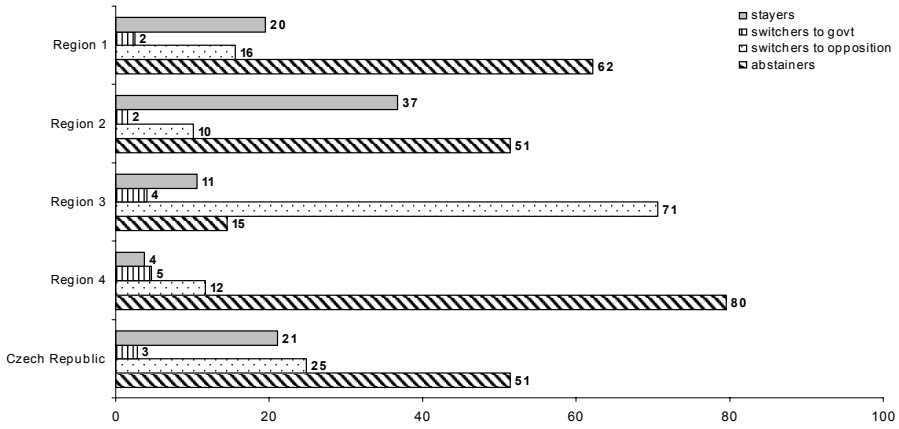
Figure 7: Comparison of level of the rate of switching away from Social Democrat Party (CSSD) between 2002 and 2004 in the Czech Republic (per cent)



Note that CSSD was the main governing party following the 2002 general election. The estimates listed above are based on ecological inference (logit method) technique. The regions illustrated earlier in figure 1 are labelled as follows. Region 1: Bohemia and urban Moravia; Region 2: Rural Moravia; Region 3: Prague; Region 4: Northwest borderlands. The legend labels 'stayers', 'switchers to govt', 'switchers to opposition' and 'abstainers' refer to voters who remained loyal to the CSSD in 2004, switched to Koalice in 2004, switched to opposition parties in 2004 or did not vote in 2004 respectively.

The Czech Christian Democrat Party (KDU-CSL) is interesting because its supporters in rural Moravia exhibited the highest levels of party loyalty (37 percent compared to a national average of 21 percent). Moreover, there was a significant urban/rural divide to electoral participation for this party. According to our ecological inference estimates, Koalice (i.e. mainly Christian Democrats) voters in Prague had an 85 percent turnout rate, whereas the national rate was one-in-two. However, these higher levels of electoral participation were associated with lower levels of loyalty because Koalice voters had a 71 percent switching rate in Prague – a level that was almost three times higher than that prevailing across the Czech Republic.

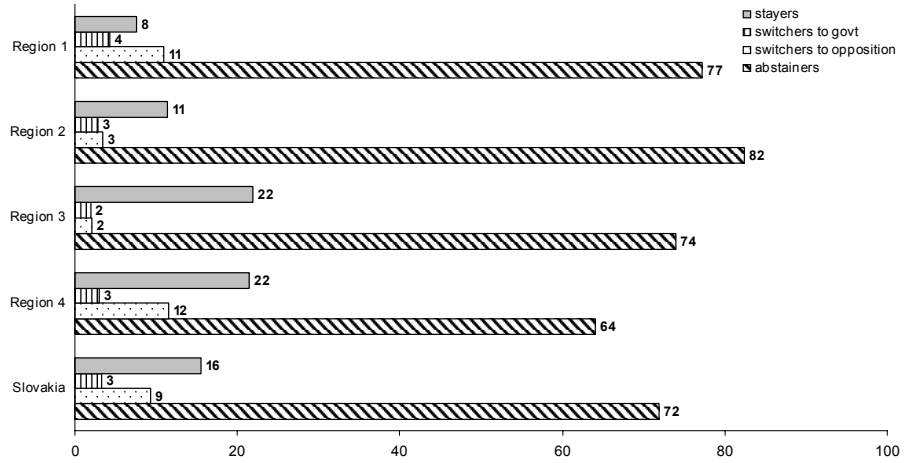
Figure 8: Comparison of level of the rate of switching away from the Christian Democrat Party (KDU-CSL) between 2002 and 2004 in the Czech Republic (per cent)



Note that KDU-CSL was the junior governing party following the 2002 general election. The estimates listed above are based on ecological inference (logit method) technique. The regions illustrated earlier in figure 1 are labelled as follows. Region 1: Bohemia and urban Moravia; Region 2: Rural Moravia; Region 3: Prague; Region 4: Northwest borderlands. The legend labels 'stayers', 'switchers to govt', 'switchers to opposition' and 'abstainers' refer to voters who remained loyal to the KDU-CSL in 2004, switched to CSSD in 2004, switched to opposition parties in 2004 or did not vote in 2004 respectively.

If we now shift our focus to Slovakia and the main governing party, i.e. the SDKU led by Prime Minister Mikulas Dzurinda, we can see from figure 9 that this party had the lowest level of party loyalists in urban areas (8 percent, compared to 16 percent across the country) combined with one of the highest rates of abstention. More generally, there were significant regional differences in the profile of loyalty, defection and abstention among those who voted for this party in the last general election in 2002. Such results demonstrate that loss in popularity, due to being in power at the mid-term, as H.4 of SOET asserts, was not a uniform phenomenon.

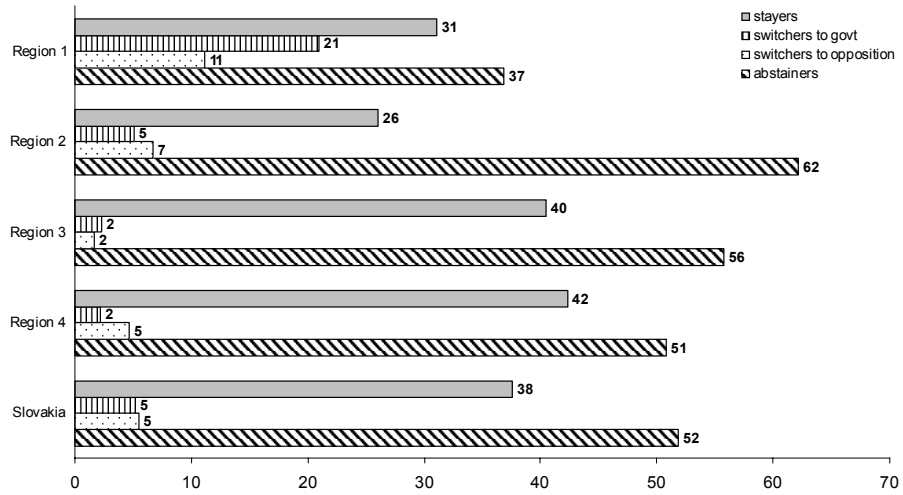
Figure 9: Comparison of level of the rate of switching away from the Slovak Democratic & Christian Union (SDKU) between 2002 and 2004 in Slovakia (per cent)



Note that SDKU was the main governing party following the 2002 general election. The estimates listed above are based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'stayers', 'switchers to govt', 'switchers to opposition' and 'abstainers' refer to voters who remained loyal to the SDKU in 2004, switched to KDH, SMK or ANO in 2004, switched to opposition parties in 2004 or did not vote in 2004 respectively.

As in the Czech Republic, the Christian Democrat Party (KDH) in Slovakia had some of the most loyal voters. We can observe from our ecological inference results presented in figure 10 that in two regions, i.e. Central and Eastern Slovakia supporters of this party tended to consider only two strategies – remain loyal to the KDH or abstain. In these regions, switching to other parties occurred among a relatively small number of these partisans (7 and 4 percent respectively).

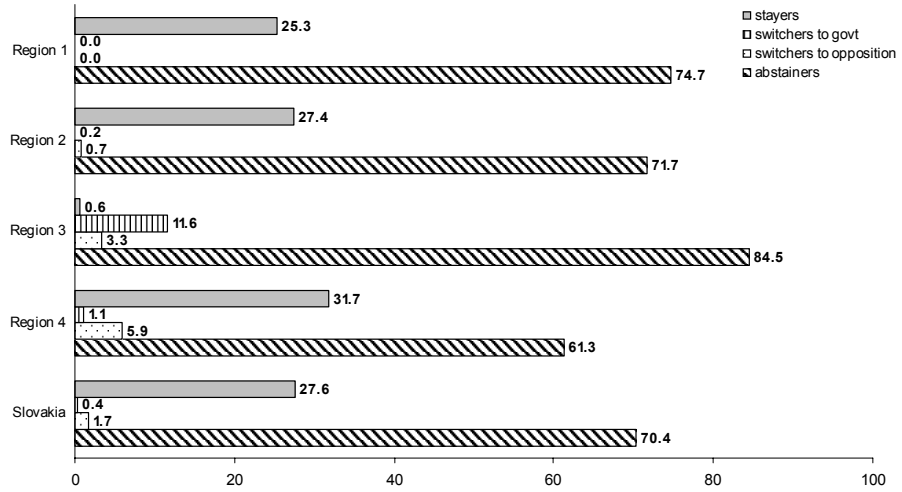
Figure 10: Comparison of level of the rate of switching away from the Christian Democratic Movement (KDH) between 2002 and 2004 in Slovakia (per cent)



Note that the KDH was a junior governing party following the 2002 general election. The estimates listed above are based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'stayers', 'switchers to govt', 'switchers to opposition' and 'abstainers' refer to voters who remained loyal to the KDH in 2004, switched to SDKU, SMK or ANO in 2004, switched to opposition parties in 2004 or did not vote in 2004 respectively.

Figure 11 demonstrates a similarly high level of loyalty to another (junior) party of government – the Party of the Hungarian Coalition (SMK). Within urban areas such as Bratislava and Kosice and in Western Slovakia more generally there was no switching among SMK voters to any other parties. However, in the Central Slovak region very few SMK voters (1 percent) stayed loyal. Significantly, such switchers only moved to other governing parties where it seems SMK voters often chose to abstain they rarely considered switching to opposition parties. This pattern contrasts with our expectations derived from the SOET where some level of 'protest' voting would have been expected.

Figure 11: Comparison of level of the rate of switching away from the Party of the Hungarian Coalition (SMK) between 2002 and 2004 in Slovakia (per cent)



Note that the SMK was a junior governing party following the 2002 general election. The estimates listed above are based on ecological inference (logit method) technique. The regions illustrated earlier in figure 2 are labelled as follows. Region 1: Urban: Bratislava, Kosice and the south-western border districts of Dunajskă Streda and Komărno; Region 2: Western Slovakia; Region 3: Central Slovakia; Region 4: Eastern Slovakia. The legend labels 'stayers', 'switchers to govt', 'switchers to opposition' and 'abstainers' refer to voters who remained loyal to the KDH in 2004, switched to SDKU, KDH or ANO in 2004, switched to opposition parties in 2004 or did not vote in 2004 respectively

In summary, the ecological inference results presented indicate that defection of support away from government parties (i.e. CSSD and Koalice in the Czech Republic, and SDKU and KDH in Slovakia) was primarily an urban phenomenon in both our case studies. In rural areas, the highest levels of party loyalty are observed for Christian Democrat Parties in both countries. These ecological inference results tally with the findings of previous survey based research that Catholic party supporters have high levels of party identification. A similar pattern is observed for only major ethnic based party – the SMK in Slovakia. These findings highlight that where attachment to parties is high, only some elements of the SOET such as increased abstention (H.1) are evident in the electoral data.

Conclusion

Within this paper we have demonstrated how the Second-Order-Election-Thesis can be examined at the sub-national level, and how it is possible to also make cross-national comparisons where the richness of regional political cultures is retained. This is one of the key advantages of implementing an ecological inference approach when examining theories of electoral behaviour such as the SOET. In this respect, we have shown the degree to which expectations derived from the SOET are observed in regional and national vote switching patterns in the our two case studies – the Czech Republic and Slovakia.

Moreover, we have illustrated how the estimates of vote switching derived from an ecological inference based analysis of electoral data can be fruitfully compared with mass survey data to deepen our understanding of electoral behaviour. In this respect, the results presented here provide new insights into the original national level analyses undertaken by Reif and Schmitt (1980), and the individual level survey based analyses undertaken by van der Eijk et al. (1996).

Unsurprisingly, our ecological inference based estimates show that when one considers regional differences, which are based on political rather than strictly geographical criteria (though these are often coterminous), one sees a more complex picture than that portrayed in national patterns. More specifically, in this paper we have demonstrated that urban/rural divisions play an important role in shaping the levels of party switching and electoral abstention. A recurrent observation stemming from our research is that regional patterns of electoral behaviour contrast sharply with national patterns.

One key lesson to emerge from the research presented here is that differences in the strength and direction of party switching at the regional level are

strongly determined by sub-national political cultures and local economic circumstances. The key implication here is that the SOET applies mainly to national patterns, it works less well at lower levels of aggregation. Methodologically speaking there is the suspicion here that some features of the SOET may be based on *aggregation effects*. Our ecological inference results suggest that investigation of this suspicion represents an important avenue for future research.

Afterword

In our paper we examined the used of regional electoral data for both the European Parliament elections of 2004 and the previous general election in the Czech Republic and Slovakia in 2002. These countries represent important case studies as they have a common history and they held their first EP elections in 2004. However, they are also different in significant ways. For example, ethnicity plays an important role in electoral competition in Slovakia, but is largely absent in the Czech Republic.

More generally, the goal of our research was to "unpack" the nature of party competition exhibited in both general and European elections. In this respect, our key interest was vote-switching patterns. Quite often the focus of vote-switching behaviour is cross-national and theories such as the Second Order Election Thesis makes specific predictions as to differences between general and European polls. Such a research strategy makes sense when using mass survey data. However, one limitation of such research is that there is little consideration of sub-national differences. In our research, using an Ecological inference methodology we demonstrated the importance of regional voting switching patterns and compared our results with those estimated using the European Election Study survey dataset.

At the Lisbon Workshop three main points were made regarding the paper we presented.

First, while our research methodology was an interesting one, our paper was too descriptive. In short, future revisions of our paper should focus more clearly on highlighting general features of vote switching behaviour and the dynamics underpinning regional electoral patterns. Consequently, our research would contribute not only to the literature on European elections, but also the wider study of electoral behaviour and political culture.

Second, the theory underlying the ecological inference method used is based on estimating individual level behaviour from aggregated data, i.e. a top down approach. There is considerable research within the social sciences using techniques such as agent based modelling that adopt a bottom up approach. Here simple rules about voter behaviour are used in simulations to generate estimates of likely aggregate level behaviour. In this respect, we were encouraged to consider the theoretical implications of our ecological inference methodology.

Third, our use of aggregated election results needs to be more strongly argued. Most often within political science the main interest is in individual level models of political behaviour. Consequently, use of mass survey data is appropriate for such tasks as individual voters opinions are sought directly. However, using an ecological inference technique involves making statistical inferences about individual level behaviour from aggregated data. Quite often such methods are used when survey data is unavailable, e.g. with electoral history datasets. Therefore, in employing an ecological inference approach we must bolster our contention that analysing aggregated data provides unique insight into electoral behaviour.

Notes

Paper prepared for presentation at the "European Parliament Election of 2004": RG3 – EES Spring Meeting held at Instituto Ciências Sociais, Lisbon, May 11-14, 2006. The research is based on the European Election Survey 2004 survey (EES 04), SC&C exit poll and official electoral data. In undertaking this research both authors gratefully acknowledge funding from

CONNEX; the "Participation, Democracy and Citizenship in the Czech Republic" project financed by the Grant Agency of the Czech Republic (Grant No. 403/04/1007, 2004–2006) and "Legitimacy of Political System and Inequalities" (Grant No. 403/06/1421, 2006-2008.

[1] We will not discuss here for reasons of brevity why voters seem to have a hierarchical view of elections. Differential turnout and party support may be due to (1) cognitive factors where voters *know* that some elections are more important than others or (2) mobilisation factors where citizens fail to vote because they are only vaguely aware that an election is taking place.

[2]

[3] This general "sympathy" for a party is primarily a measure of short-term factors, such as candidate effects, sudden downturns in the economy, scandals, etc.

[4] In effect this leads to re-specifying our aggregate logit model of party choice as a random intercept one.

[5] Technically speaking this equality is specified between individual level tetrachoric correlations (the gamma correlation is a reasonable convenient approximation) and the district level Pearson correlations between Probit transformed vote shares (logit transformations are again a reasonable convenient approximation using a constant scale factor). See, Thomsen (1990: 13).

[6] These geographical units are based on seventy counties that have been divided into urban and rural areas. Large cities such as Prague and Brno have been divided into smaller sub-city units. This process of disaggregation yields 159 cases for analysis.

[7] Only electoral data was used for this analysis. It is also possible to use census data such as social class. However, for this analysis our expectation was that political factors would be the primary source for identifying homogenous regional units within the electoral geography of both countries. The assumption of a stable system of underlying factors determining voting behaviour is tenable since there are just two years between the pair of chamber and European elections.

[8] This technique was implemented through use of a dedicated software package called LOCCONTINGENCY that has been developed within the Institute of Sociology, Czech Academy of Sciences, Prague.

[9] We are not talking about absolute levels of support here, but percentages of the share of the vote gained in 2002 that switched in 2004. This is an important distinction that will be highlighted at the end of this subsection.

[10] This trend was mainly due to the migration of Union of Freedom (US-DEU) voters. The US-DEU was a junior partner in the Koalice coalition that fought the 2002 general election under a joint platform with the Christian Democrats. Both the European Democrats (SNK-ED) and US-DEU adhere to a common liberal pro-European orientation.

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Appendices

Ecological inference datasets

The primary source of vote switching information is the official electoral results data provided by the Interior Ministry of the Czech Republic. A breakdown of results is available for all ballot boxes in the Czech Republic. However constructing such a detailed dataset is prohibitive and impossible to match with other relevant data such as occupation, social class, etc. which are available from the Czech Statistical Office from the most recent census in 2001. For the purposes of this research two datasets were constructed. The first is based on a unit called the "Okres" or district and yields 91 units for the entire country. The second is based on the "county" unit and enables us to divide the Czech Republic into 159 units. Cluster analyses were undertaken using these two datasets. For reasons of brevity only the results from the county level of analysis are reported in this paper.

For historical reasons the administrative structure used in Slovakia is similar to that in the Czech Republic. The ecological inference analyses undertaken in this paper were based on district ("Okres") data where there are 79 units for the entire country. This data is available from the Statistical Office of the Slovak Republic. Using a similar procedure applied to the Czech electoral data a series of cluster analyses were estimated as a basis for identifying electoral regions. These regions were then used as part in making ecological inference estimates of vote switching between the general election of 2002 and the European Parliament elections of 2004.

European Election Study (EES 04) datasets

The data used in this paper is the Czech Republic wave of the European Election Study of 2004. A random sample of the adult (18 years +) population was interviewed within the three weeks of the European elections (June 29 to July 7). A total of 889 interviews were completed. Respondents were asked to recall participation and vote choice in the accession

referendum in 2003 and the 2002 national chamber elections and how they would vote if Chamber elections were held in the summer of 2004. These questions in a sense allow us to impute how the respondents collected would have voted in first and second-order national elections and examine some reasons for differential turnout rates and party preference changes as predicted by Reif and Schmitt (1980). In order to deal the well-known effect of over-reporting of voter turnout the dataset has been weighted to reflect the actual turnout in 2004 using the procedure outlined by van der Eijk (1996).

SC&C 2004 European Election exit poll dataset

These were commercial surveys for Czech Television (CT1) undertaken on polling day(s) outside a quota sample of polling stations giving a representative sample of the total Czech electorate. The samples for these exist polls were 9,028 respondents with response rates of approximately 66 percent. This dataset represents the most comprehensive and probably most accurate dataset relating to the vote choices of the 28 percent of the Czech electorate who voted in 2004 elections. This dataset has been weighted by SC&C to match the socio-demographic profile of the eligible electorate of the Czech Republic.

Voter switching estimates between 2002 and 2004

Czech Republic - European Election Study 2004 estimates

2002/ 2004	*CSSD*	*KSCM*	*ODS*	*KDU*	*ULD*	*SNK*	*SZ*	*NEZ*	Others	Abstainers	Total
CSSD	2.1	0.8	0.8	0.2	0	0.7	0.1	1	0.7	11.1	17.5
KSCM	0.2	4.8	0	0	0	0	0	0.2	0	5.6	10.7
ODS	0.1	0.1	6.5	0.1	0.5	0.6	0.1	0.1	0.2	6	14.2
Koalice	0	0	0.2	2.1	0	1	0.1	0.3	0	4.6	8.3
SN	0	0	0	0	0	0	0	0.4	0	1.2	1.6
SZ	0	0	0	0.2	0	0	0.4	0	0	0.9	1.4
Others	0	0.1	0.5	0.1	0	0.3	0	0.1	0.9	2.3	4.3
Abstainers	0.1	0	0.5	0.1	0	0.5	0.3	0.3	0.3	40.1	42.1
Total	2.5	5.7	8.5	2.7	0.5	3.1	0.9	2.3	2	71.8	100

SC&C Exit-poll 2004 estimates

2002/ 2004	*CSSD*	*KSCM*	*ODS*	*KDU*	*ULD*	*SNK*	*SZ*	*NEZ*	Others	Abstainers	Total
CSSD	6.4	2.5	1.4	0.4	0	1.1	0.4	1.3	0.8	na	14.2
KSCM	0.1	14.9	0.1	0.1	0	0.1	0	0.4	0.5	na	16.1
ODS	0.6	0.3	21.8	0.4	0	2.3	0.3	2.3	1.2	na	29.1
Koalice	0.3	0.3	1.7	7.5	0	4	0.6	0.6	2	na	17
Others	0.2	0.2	0.5	0.2	0	1.5	1	1.2	2.1	na	6.7
Abstainers	1.2	2.2	4.6	1	0	2.1	0.9	2.5	2.4	na	16.9
Total	8.8	20.3	30	9.6	0	11	3.2	8.2	8.9	na	100

Note with an exit poll abstainers are excluded from the sampling frame by definition.

Ecological inference (logit method) estimates

2002/ 2004	*CSSD*	*KSCM*	*ODS*	*KDU*	*ULD*	*SNK*	*SZ*	*NEZ*	Others	Abstainers	Total
CSSD	0.9	1	0.5	0.3	0.1	0.5	0.1	0.4	0.2	13.5	17.5
KSCM	0.2	3.4	0.1	0.1	0	0	0	0.5	0.3	6.1	10.7
ODS	0.2	0.2	6.3	0.1	0.1	0.8	0.2	0.3	0.3	5.8	14.2
Koalice	0.2	0.1	0.5	1.6	0.1	1	0.2	0.1	0.2	4.2	8.3
SN	0	0	0.1	0	0	0	0	0	0.1	1.3	1.6
SZ	0	0	0.1	0	0	0.1	0	0	0	1.1	1.4
Others	0.1	0.1	0.2	0.1	0	0.1	0	0.2	0.4	3.1	4.3
Abstainers	0.8	1	0.8	0.4	0.2	0.7	0.3	0.8	0.5	36.6	42.1
Total	2.5	5.7	8.5	2.7	0.5	3.1	0.9	2.3	2	71.8	100

Slovakia

European Election Study 2004 estimates

2002/ 2004	HZDS	SMER	KSS	SDKU	SMK	KDH	ANO	Others	Abstain	Total
HZDS	2.3	0.1	0	0	0	0.2	0	0.2	10.7	13.5
SMER	0	1.3	0	0	0	0	0	0.1	7.9	9.3
KSS	0	0	0.6	0.1	0	0	0	0	3.6	4.4
SDKU	0	0.1	0	1.9	0.1	0.2	0.1	0.4	7.6	10.4
SMK	0	0	0	0	1.9	0	0	0	5.8	7.7
KDH	0.1	0	0	0.2	0	2	0	0.1	3.3	5.7
ANO	0.1	0.2	0	0.1	0.1	0.1	0.6	0	4.3	5.5
Others	0.2	0.8	0	0.2	0	0	0.1	0.8	10.4	12.6
Abstainers	0.1	0.3	0.1	0.3	0.1	0.2	0	0.1	29.6	30.9
Total	2.8	2.8	0.8	2.9	2.2	2.7	0.8	1.7	83.3	100

Ecological inference (logit method) estimates

2002/ 2004	HZDS	SMER	KSS	SDKU	SMK	KDH	ANO	Others	Abstain	Total
HZDS	1.5	0.4	0.1	0.1	0	0.1	0	0.1	11.2	13.5
SMER	0.5	0.7	0.1	0.2	0	0.1	0.1	0.1	7.6	9.3
KSS	0	0.2	0.3	0	0	0	0.1	0.1	3.6	4.4
SDKU	0.1	0.4	0	1.6	0	0.2	0.2	0.4	7.5	10.4
SMK	0	0	0	0	2.1	0	0	0.1	5.4	7.7
KDH	0.1	0.1	0	0.3	0	2.2	0	0.1	3	5.7
ANO	0	0.2	0.1	0.2	0	0	0.2	0.3	4.6	5.5
Others	0.4	0.7	0.1	0.3	0	0.1	0.1	0.2	10.7	12.6
Abstainers	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.3	29.7	30.9
Total	2.8	2.8	0.8	2.9	2.2	2.7	0.8	1.7	83.3	100