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Turnout matters: sometimes

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Abstract

Despite widespread concern about the partisan and policy implications of low and socially unequal turnout, few studies to date have succeeded in gauging with significant certainty the extent to which socio-demographically differential voter turnout has real and tangible effects on election outcomes. In this paper we suggest a partial remedy for this situation by providing a systematic assessment of the partisan effects of socially unequal voter turnout in representative democracies. To this end we propose a novel approach to estimating the magnitude of turnout effects which treats vote abstainers as missing data on a variable measuring vote choice. Using an efficient and unbiased estimator, we impute the missing data points (the vote choices of non-voters) on recalled party choice at 28 elections in 25 countries in the Comparative Study of Electoral Systems dataset. Based on these imputations, we calculate the difference between observed and hypothetical (100 percent) turnout and identify party and country-level conditions under which socially low turnout translates into biased electoral outcomes. While our findings confirm earlier studies reporting little to no systematic gains from turnout for left-of-centre parties, our evidence suggests that small parties and non-incumbents would benefit from full turnout.

Introduction[1]

With predictable regularity low and declining voter turnout at elections around the world prompts political commentators to lament the lack of citizen involvement, claiming that eroding levels of political involvement pose serious threats to democracy. These concerns usually address one of two aspects of participation in representative democracies, or indeed both at once. The first relates to issues of system stability and support for representative institutions. A democratic system which is void of the active support and involvement of its citizens may face serious problems of legitimacy and, ultimately, of its own survival (Lipset 1963, 180). The idea that high levels of citizen participation in politics are conducive to democratic legitimacy and stability has by now come to enjoy overwhelming theoretical and empirical support (Norris 2002, 5; Powell 1982, 206). The second aspect concerns the direct political consequences of low turnout. It is claimed that differences in turnout between social groups affect the outcome of elections and thereby lead to the under-representation of the political interests of certain groups of citizens (Lijphart 1997).[2] In this paper, we focus on the second problem.

Assertions of direct political consequences of socially unequal electoral turnout rest on the near-universal association between political participation and socio-demographic status. Comparative studies of turnout note that this relationship weakens as turnout increases (e.g. Powell 1986). Consequently then, it is argued, 'low voter turnout means unequal and socio-economically biased turnout' (Lijphart 1997, 2), which, furthermore, has partisan, ideological and indeed policy implications. Despite some evidence of a recent gradual decline in 'class voting' and other socio-demographically based electoral alignments across the advanced industrialised nations, support for parties of the left is still robustly correlated with socio-demographic status. As socio-demographic differences in turnout widen, support for parties of the left decreases,

[1] The authors would like to thank Ken Benoit for his helpful introduction to the whims of AMELIA.

[2] A third, again more indirect, effect of socially unequal turnout concerns the possibility that parties and candidates have very little incentives to target their campaign toward the low-turnout groups in society. While this aspect is closely intertwined with the problem of direct effects, space limitations prevent us from dealing with it to any appropriate extent in this paper.

pulling party competition and policy to the right (Jackman 2001, Pacek and Radcliff 1995). Ballots once famously depicted by Frederick Engels as 'paper stones' (Przeworski and Sprague 1986, 1), can hardly fulfil their role in the peaceful and gradual advancement of the political cause of the not-so-well-off if they are left on the beach. Conversely, to the extent that higher turnout increases support for left parties and their policy agendas, it may shift the distribution of voters' policy preferences further to the left than has on average been the case in western liberal democracies. Finally, there is some evidence that increased support for parties of the left results in turn in higher welfare spending and more state interventions in the macro-economy and in labour markets (Castles and McKinlay 1979; Hicks and Swank 1992; Hill and Leighley 1992; Hill, Leighley and Hinton-Andersson 1995).

The implications of these effects of a social differential in turnout for democratic legitimacy go beyond the political disadvantage of left-of-centre parties. No matter what the sources of individual abstention, political preference revelation at elections and popular votes will be biased whenever turnout is short of 100 percent and abstainers' preferences are non-randomly distributed among the electorate. By the same token, when everyone votes there can be no socio-demographic – or for that matter any other– bias in turnout and, by further inference, in the political representation of citizen preferences and interests. For Lijphart (1997) then, only 100 percent turnout is good turnout. Paradoxically, as Rose (1997, 22) points out, this logic rejects making any figure at all, whether 80, 95, or 100 percent, the desirable target for turnout. The standard of evaluation is randomness of non-voting. As long as non-voters are a representative cross-section of the electorate, their non-appearance at the polls will not increase the influence of any one group at the expense of another.

Unfortunately, this randomness seems to be absent from electoral behaviour. As a result, low turnout may severely restrict the ability of elections to reflect national preferences. This can pose concrete problems for incumbent politicians who are unable to cater for the non-revealed preferences of non-voters but may fear that these will vote against them at the next election as punishment for unfavourable policy outcomes (Lutz 2003, 3). Put differently, because of the relatively large error around preference revelation, based on a sample (the electorate) with large numbers of missing values (non-voters) any elected politician will be less than optimally able to work efficiently

by commonly held standards of representative government, even if the sample of voters is unbiased. However, the countervailing expectation that politicians anticipate low turnout among particular groups and therefore neglect their supposed interests altogether seems to be more likely. Thus, the socially unequal distribution of politically relevant resources may lead to a situation where some groups of citizens are systematically less successful than others in expressing their political preferences through the vote. As a result, the electoral arena may give different people different degrees of political influence even when the formal equality of all citizens before the law is rigorously upheld in the electoral process (Tóka 2002, 5). While we have gone a long way in making the franchise a right of every adult citizen, rather than a privilege restricted to a narrowly-defined group, the fact that everyone has a right to vote may therefore not be sufficient in itself to make a country democratic (Rose 1997, 3).

To be sure, election outcomes thus generated would still be representative of the preferences of voters. However, they would no longer be representative of the electorate as a whole. If, as many believe, the health of a democracy rests on its ability to translate public preferences into policy, then unrepresentative election outcomes are a serious problem (Herron 1998). The normative appeal of the majoritarian representative institutions characterising western democracies rests on their claim to maximize prospective political equality among citizens, i.e., on the condition that, prior to a decision being made, no individual has any greater chance than any other of determining the outcome of the process (Hyland 1995, 85; Lively 1975, 16-27). If considerable numbers of non-randomly selected citizens abstain, the *de jure* equality of citizens may not be matched by their *de facto* equality even in the most modestly understood notion of democracy (Tóka 2002, 2).[3]

[3] It is crucial to recognize that the voluntary nature of individual electoral abstention does not remove the normative problems implied in socially unequal turnout. It does not suffice to point at the truism that nonvoting is an individual choice for which the supposedly underrepresented individual must remain responsible. As Tóka (2002, 11) points out, the potential victims of the political inequalities stemming from the socially unequal distribution of turnout are not the non-voters as such. Rather, they are all those voters who, irrespective of their own participation, share their underlying political preferences with non-voters rather than voters. Since election results influence collective outcomes the preferences of these individuals may have a weaker expression in the election outcome than the numerical presence of these preferences in the electorate would justify under the 'one-person, one-

Despite these potentially serious and far-reaching implications of low and unequal turnout, few studies to date have succeeded in gauging with significant certainty the extent and the conditions under which socio-demographically differential voter turnout has real and tangible effects on electoral and policy outcomes. And despite a growing body of literature on this subject, little systematic evidence has been produced to decisively confirm or refute the claim that turnout effects are not negligible. In this paper we suggest a partial remedy for this situation by providing a systematic assessment of the partisan effects of differential voter turnout in representative democracies. To this end we propose a novel approach to estimating the magnitude of turnout effects which treats vote abstainers as missing data on a variable measuring vote choice. Using data on 28 elections in 25 countries from the Comparative Study of Electoral Systems (CSES) dataset, we impute the missing data points with the help of an efficient and unbiased estimator. We then identify some institutional and contextual conditions under which socially low turnout may translate into biased electoral outcomes.

In following sections, we review the literature on the effects of unequal turnout and discuss the merits and limitations of existing approaches to estimate their magnitude. We then introduce an alternative approach and estimate the effect on election outcomes of less-than-full turnout using data on 28 elections in 25 countries between 1996 and 2002. Using an efficient algorithm for the imputation of the vote choices of non-voters, we obtain measures of the difference between observed and hypothetical (100 percent turnout) votes for country elections and for individual parties within countries. If turnout was 100 percent, would it affect the election result? Can we identify contextual conditions under which turnout matters more than it does under others? Which parties would gain and which would lose from full turnout? We will present these differences between observed and hypothetical vote first for each country, and then for each party within a country. Finally, we will summarize our findings

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vote' rule. Tóka (2002, 5) also provides a convincing account of why group-specific, socially differential turnout cannot be dismissed, or even welcomed, as a device for transmitting different degrees of intensity of political preferences.

and discuss them in the light of existing research, pointing out directions for future research on this important topic.

Research on the political effects of low turnout

The subject of low voter turnout has received a fair amount of attention in the literature, and much of this attention is directed at analysing the relation between election turnout and left-of-centre party (or candidate, as the case may be) vote share. According to the standard argument, this relationship rests on the fact that the individuals who have left-of-centre preferences vote at lower rates than individuals who tend to prefer parties further to the right (Lijphart 1997). It is argued that the left-of-centre parties take as a natural constituency the poorer lower classes, which tend to be less educated and less politically participative than the middle class, which supports the more right-leaning parties. In addition, in the United States, but arguably not only there, this bias takes on ethnic and racial dimensions. African-Americans, for example, who on average have lower socio-demographic status than whites, tend to support Democratic candidates, but they abstain at higher rates than middle-class whites (Wolfinger and Rosenstone 1980, 90-1; Verba and Nie 1972, 170-1). Similarly, educational attainment is positively correlated with voting propensity (Avey 1989, Burnham 1987, Piven and Cloward 1989, Wolfinger and Rosenstone 1980). While this logic is arguably most applicable to low turnout countries such as the United States, where socio-demographic differences in participation are particularly pronounced, a class-bias in turnout has been reported for other countries and regions in the world as well (e.g. Dalton 1996, 57-8). It appears to follow then, that if more people voted, left-of-centre parties and candidates might fare better in elections than they do at present.

Despite these somewhat intuitive and straightforward expectations about the political effects of socially differential turnout, research on this topic to date has generated mixed findings. This should not come as a surprise. Any attempt to test propositions about voter inequality empirically is subject to a fundamental epistemological problem, namely that the direct demonstration of any political inequalities that unequal turnout may generate requires knowledge of how non-voters might vote were they not non-voters (Tóka 2000, 3). The problem is that this information cannot strictly be

known. And while this is essentially a reformulation of the more general fundamental problem of causal inference (Holland 1986), it bears particularly strongly on the present topic, where all kinds of more or less plausible propositions have been advanced to extrapolate from what we know about non-voters and voters in order to estimate how the former would behave at the ballot box were they to transmute into the latter. In the abstract, it is possible that the individual-level characteristics that made some people abstain from voting might also have made them vote differently to the way that would be anticipated by models based on information about people who actually did vote. However, despite the apparent socio-demographic differences that divide voters and non-voters, the latent preferences that made the non-voters abstain in the first place might also make them divide their vote between parties exactly the way voters with a different social profile do if they only turned out to vote (Tóka 2000, 3). In that case, despite the fact that voters and non-voters may have different political preferences, whether a given individual abstains from voting in an election would simply not be germane to how this individual would have voted if in fact he or she had decided to vote in the first place. The question is, how are we to know the parameters of this counterfactual state of the world? How can we identify with reasonable certainty those groups that, because of arguably non-political influences, show below average turnout and at the same time would differ in the hypothetical distribution of their vote choices from other groups (Tóka 2000, 3)?

In the literature three strategies that have been advanced to deal with this problem can be distinguished. One approach focuses mainly on opinion surveys to consider whether voters and non–voters differ in any significant way on the dimension of partisan identification or with respect to various policy-related issues. Some studies compare the attitudes of voters and non-voters on various social and economic policy issues or general attitudinal dispositions, while others ask more specifically about partisan identifications and preferences. An example of the latter is Teixeira's (1992, 58-105) study. Essentially, Teixeira finds no robust evidence that voters and non–voters differ on key matters pertaining to vote choice, suggesting that there should be few, if any, political effects of differential turnout. Likewise, comparing the political preferences of voters and non-voters in American presidential elections across 35 issue scales, Gant and Lyons (1993) found statistically significant differences with respect to less than one third of these scales, concluding that 'high rates of abstention in con-

temporary presidential elections are simply not very important' (Gant and Lyon 1993, 201). Other non-findings concerning differences in policy preferences between voters and abstainers are reported by Bennett and Resnick (1990), Shaffer (1982), and Wolfinger and Rosenstone (1980) for the United States, and Studlar and Welch (1986) for Great Britain. Remarkably, however, Gant and Lyons note that of the eleven issue dimensions on which voters and non-voters reflected statistically significant differences, eight were social welfare issues, and on all eight of these non-voters were more liberal (i.e., more left-wing) than voters. At the very least, they conclude, this suggests the possibility that increased electoral turnout of lower-class voters could lead to a different composition of the political agenda, or to a set of more liberal options on existing issues, thereby decreasing any class-bias in voting and public policy (Gant and Lyons 1993, 200).

A second approach involves regressing the vote share of left-of-centre parties and candidates on aggregate turnout and a variety of control variables. This strategy has been used in relation to United States presidential, gubernatorial, senatorial, and House elections. Focussing on the latter, DeNardo (1980), for example, found that there is a conditional positive relationship between turnout and Democratic vote share (see also Tucker, Vedlitz and DeNardo 1986), but that the more important effect of increased turnout is to harm the incumbent. In particular, he argues that the 'peripheral' voters identified by Campbell *et al*. (1960), who respond in a rather fickle fashion to short term campaign effects, are more likely to defect. If these 'peripheral' voters make up a large chunk of the Democratic support, increased turnout will work against the Democratic candidate. By contrast, Radcliff (1994, 1995) claims that Democratic vote share in presidential elections increases with voter turnout. However, Erikson (1995*a*, 1995*b*) claims that proper specification of Radcliff's statistical models shows the relation between turnout and presidential Democratic vote share to be rather indistinct. Nagel and McNulty (1996) find that the relation between turnout and Democratic vote share in gubernatorial and senatorial races has varied over time, being sometimes beneficial to Republican candidates, sometimes to Democrats, but most of the time just being statistically insignificant. For the rest of the world, Pacek and Radcliff (1995) find, in a cross-national study of advanced industrialised countries, that the vote share of left-leaning political parties is increasing with voter turnout. Similar findings have been made for cross-national surveys of developing coun-

tries (Aguilar and Pacek 1997) and of post-communist countries in Central and Eastern Europe (Bohrer, Pacek and Radcliff 2000), as well as in single-country studies for Australia (McAllister 1986), Britain (McAllister and Mughan 1986), New Zealand (Nagel 1988), and Switzerland (Farago 1996).

In studies within this second approach, estimation of the political effects of socially differential turnout is achieved by pooling across a large collection of elections. The advantage of this approach is its reliance on actual voting results as compared to survey data. It is reasonable to suppose, as Nagel and McNulty (1996) do, that turnout effects, if they exist, should be observable in election outcomes. Rather than querying non-voters as to whether their attitudes differ from those of voters, the multiple-election regression approach analyses actual election results for evidence of turnout effects. A disadvantage, however, of the aggregate-level approach is that it overlooks the fact that it is individuals who make voting choices and that individual-specific factors may influence voting and abstention behaviour. The fact that elections reflect individual choices is thus easily lost in aggregate data analysis (Herron 1998, 6). Furthermore, there is an ecological inference problem inherent in the multiple–election regression approach to estimating turnout effects, as researchers cannot know the types of individuals that abstain in a given set of elections and instead must work solely with abstention rates. And while turnout rates in a group of elections may be similar, this does not imply that the types of individuals abstaining are necessarily the same in each of the elections (Grofman, Owen and Collet 1999; Herron 1998, 6-7). The fact that the aforementioned individual-level studies have overwhelmingly produced negative findings while aggregate-level regression models find positive correlations between turnout and left-of-centre vote share should alert us all the more to the potential gravity of the ecological inference problem.

A third approach to estimating turnout effects tries to overcome this problem by simulating individual-level candidate or party choice conditional on an individual's propensity to vote. Borrowing their methodology from the literature on the economics of wage discrimination, these studies treat groups of voters as non-randomly selected observations and apply individual–level, choice-based statistical models to estimate the covariates that influence individuals' decisions to vote or abstain and, conditional on individual turnout, individuals' candidate choices. Using data from the 1988

American National Election Study, Herron (1998), for instance, found that the Democrat presidential candidate Dukakis would have would have almost certainly won the election if turnout had been 100 percent. Relatedly, Citrin, Schickler and Side (2003) use state-level exit polls and census data to estimate the partisan preferences of non-voters in Senate elections and then simulate the outcome of these elections under universal turnout. They find that while non-voters are generally more Democratic than voters, the scarcity of close races means that very few election outcomes would have changed had everyone voted. Although their results suggest that Democrats would fare better in a variety of alternative turnout scenarios including full turnout of various ethnic, racial and income groups, few outcomes would have changed. The last word in this category to date consists in Brunell and DiNardo's (2004) study that estimates the impact of non-voters on the outcome of presidential elections from 1952–2000 using data from the National Election Study (NES). Their estimates confirm the above findings that non-voters are, on average, slightly more likely to support the Democratic Party. And again, they find that of the 13 presidential elections between 1952 and 2000 only two – those of 1980 and 2000 first party leads were sufficiently narrow – would have been likely to see a different final outcome.

Applying similar research logic, Tóka (2002) extends this approach to a multitude of countries and elections. Using the June 2000 version of the Comparative Study of Electoral Systems (CSES) integrated micro data set, Tóka analyses turnout effects (alongside information effects) on outcomes for eighteen elections in as many countries, thereby aiming to take into account the extent to which turnout effects may vary with political and institutional context. He reasons that varying correlations of party alignments with social cleavage lines or aspects of the institutional-electoral design may all influence the extent to which socially unequal turnout occurs in the first place in a given polity at a particular time, and, also, impacts on electoral outcomes. In order to model these factors explicitly, Tóka simulates election results projected on various counterfactual scenarios including 100 percent turnout, and then examines whether and to what extent the simulated election results would have systematically increased the weight on election outcomes of those preferences that are over-represented in groups showing below-average political involvement for reasons other than their political preferences (Tóka 2002, 13-14).

Tóka's analysis reveals a small change, on average, in left-of-centre party fortunes if turnout increased to 100 percent. This can be explained by the overlap between the demographic correlates of vote choice and participation. Across Tóka's sample of elections the impact of the vote-choice and participation interaction term on the percentage change of support for a party under the 100 percent turnout scenario is merely 0.010 (with p = .31). The coefficient implies that for every one percent increase in turnout, a left-wing party can expect a change in its vote share anywhere between a one-hundredth of a percent loss and a three-hundredths of a percent gain – by all measures certainly not an astronomical impact (Tóka 2002, 38).[4]

With its focus on individual elections, this approach allows for the important possibility that differential turnout effects may vary from election to election within one country, as well as between countries. However, severe restrictions apply. While it is useful to combine the advantages of individual-level analysis with the enhanced certainty and validity of actual behaviour and election results, this approach is either restricted to analysing one election at a time (Herron 1998), to several elections of the same type and in one country for reasons of statistical control (Brunell and DiNardo' 2004; Citrin, Schickler and Side 2003) or to modelling the effects of only a very small vector of variables which influence vote choice (Tóka 2002). Thus, these studies must either forgo the ability able to distinguish systematic and general turnout effects from the situational effects on voting behaviour, trends that persist across a large number of countries and elections, or forgo the capacity to include more than a handful of variables in their model. Only an analysis of a heterogeneous sample of polities and elec-

[4] Tóka's classification on parties into left and right is based on the mean-self placement of a party's voters in the sample on a left-right scale. Given that in many of the new democracies covered by Tóka's dataset the meaning of left and right, and consequently the composition of the left-wing electorate, may be rather different from what it is in the older democracies, the insignificance and size of the coefficient may be underestimated (Tóka 2002, 38). Yet, a replication of the analysis on a smaller sample of old democracies did not change this result much. The interaction effect had the expected sign and was significant at the .018 level, suggesting that for every one percent increase in turnout, the average left-wing party can expect a 0.038 (± 0.025) percent of change in voting support. Thus, for an old democracy with a roughly 80 percent turnout in a national election, the average left-wing party would gain 20 times this much, i.e., between 0.26 and 1.26 percent of the vote if turnout had been 100 percent.

tions can enable us to say anything of relevance about turnout effects in any election (Tóka (2002, 24). Finally, the estimates generated by these models generally carry over-large sampling errors

It seems wise at this point to review the nature of the problem we are trying to solve. We want to find out if election outcomes would be different from those we observe if turnout rose from its current levels. Sub-varieties of this question ask about the more specific or directional possibility that left-of-centre parties would do better if turnout increased, as well as about how big the difference would be, whether they would be sufficiently substantial to have effects on government formation or policy outcomes, and whether we can predict under which situational and institutional circumstances turnout effects are a factor that is to be reckoned with. However, all of the aforementioned studies assume that the extent to which turnout rates matter with respect to election outcomes depends on the difference between the average voter and the average abstainer. It is premised that in an election that lacked full turnout – as all real world elections do – if the average abstainer had preferences different from those of the average voter, then the fact that there was less than complete turnout would have impacted the outcome of the election. If, on the other hand, so the argument goes, abstainer preferences mirrored voter preferences, then the level of voter turnout would have no consequences for the election outcome.

This argument is flawed, for a number of reasons. Firstly, the question of the policy preferences of voters and non-voters is logically distinct both from the question of whether low turnout voters are more likely to vote for left-of centre parties, and from the question of whether we should expect elections with higher turnout to favour left-of-centre parties (Grofman, Owen and Collet 1999). The first type of study reviewed above primarily tackles the first question, while the second type aims to answer the second question. The third approach comes close to bridging these otherwise distinct questions by means of simulation, but it suffers from various restrictions on its ability to fulfil the *ceteris paribus* condition. None of these approaches, however, contributes directly to answering the question of whether election outcomes, or the fortunes of left-of-centre parties, would be different from those we observe if turnout rose from its current levels. Nonetheless, the argument that, given the socio-demographic differences between voters and non-voters, election outcomes would somehow differ if all

citizens voted ‘is almost trivially true’ (Tóka 2002, 3) is often taken for granted. As we said before, short of using panel data on the evolution of vote intention and likelihood of voting during the course of an election, we have no way of telling whether the political preferences of non-voters would remain stable if they turned into voters (see also Grofman, Owen and Collet 1999, 360).

Yet, even if we were somehow to overcome this fundamental problem, three further caveats remain. Firstly, all of the above models recognize more or less explicitly that non-voters tend to be less knowledgeable than voters with similar socio-demographic characteristics. Any assessment of turnout effects will therefore have to take account of the possibility that a turnout rise to 100 percent will be accompanied by, and may be causally related to, a corresponding change in the information level of the erstwhile non-voters. If this is the case, then the vote choice of the erstwhile non-voters might well change in a direction approximating that of current voters. Yet, it may also change in any other direction that we have no information about. If the mobilization of non-voters occurs largely independently from their information level and the latter’s impact on vote choice, however, then votes can differ between the two groups in a way that is amenable to prediction by reference to the political preferences of non-voters. Estimating the effects of differential turnout in conjunction with political knowledge, Tóka (2002) finds that knowledge- and turnout-based voter inequalities neither accumulate nor cancel out each other. Rather, it seems that that the two types of inequalities ‘live side by side’ (Tóka 2002, 41). Thus, we have little reason to assume that the correlation between turnout and knowledge severely undermines the validity of our estimates.

Secondly, short of making voting compulsory, few electoral reform projects will boost turnout to anywhere near 100 percent. The real world implications of our estimates will be more useful if we are able to predict what will happen if turnout in a particular country rises from, say 65 percent to 75 percent. But as V. O. Key emphasized 40 years ago, the partisan impact of increases in turnout will depends on the exact ‘sectors of the population from which the increment in vote comes’ (Key 1964, 590). Commonly used means of inference beyond the point estimates from analysis of available data such as linear interpolation are therefore inappropriate.

Thirdly, existing studies on turnout effects commonly assume an equivalence of votes and preferences. While this assumption may hold to some extent in two-candidate elections, as well as in electoral systems of almost perfect proportional representation, electoral behaviour in the widely prevailing multiparty, multicandidate elections are characterised by various strategic considerations making it in a voter's interest to vote for someone other than his or her most preferred candidate (Cox 1984).

The approaches advanced by Brunell and DiNardo (2004), Citrin, Schickler and Side (2003), Herron (1998) and Tóka (2002) aim to answer the counterfactual question of expected partisan vote share if turnout was 100 percent. Inferences from these models are troubled either by their inability to explicitly take account of contextual factors, or by a restricted vector of explanatory variables and great uncertainty surrounding his estimates. Below, we introduce a method of estimating vote choice under a scenario of full turnout that overcomes these problems by controlling for contextual factors through cross-sectional, multi country research design, and provides more robust estimates of the hypothetical election outcomes by repeated sampling from linear multiple estimates of the imputed vote choices of non-voters.

Method: Vote abstention as a missing data problem

Our technique for estimating turnout effects on vote choices is rooted in the notion that voting represents an individual choice and therefore that voters are self-selected (Dubin and Rivers 1989, Heckman 1979). The reason why we do not have data on how some citizens voted is simply because they *chose* not to vote. Note the substantive equivalence of unequal turnout and non-randomly distributed missing observations. If missing data points are uncorrelated with the errors or with the variables of interest, they pose few problems beyond reducing the number of observations and thereby compromising the accuracy of our estimates. It is only when the sampling fractions are correlated with the errors or the dependent variable that we are likely to get biased estimates. Analogously, as long as voters were selected at random in relation to vote choice, the presence of non-voting would merely reduce the efficiency of constituency wide preference ascertainment, but would not introduce any political bias. The problem is that we have little reason to assume such independence. While the abovementioned studies of turnout effects may not have been able to establish any

systematic and directional link between turnout and preferences, their findings overwhelmingly imply that abstention is not perfectly random in relation to the variable of interest: vote choice.

Turnout constitutes a source of selection bias, and, by analogy, of potential partisan bias in elections. The sample of voters is thus a self-selected sample, and we have good reasons to estimate the vote choices of non-voters using the best available techniques for the imputation of missing data (Dubin and Rivers 1989, 363, 368; Little and Rubin, 2002). Fortunately, we avail of powerful tools for the imputation of missing data points that have been shown to outperform more traditional methods of 'filling in' missing data, such as imputing predicted values from regression analysis for the abstainers. If we adopted the latter approach of linear or non-linear prediction through fitted values, we would overstate the degree of accuracy of our estimates (King *et al*. 2001, 66). Based on this logic, we treat the unobserved vote choices of non-voters as missing data points. That means that we assume the vote choices of non-voters to be data that actually exists but has not been observed or recorded. We then use publicly available software designed by King *et al*. (2001) to apply a highly efficient technique to imputing values for each missing item. The technique involves the multiple imputation of *m* values for missing items and creating completed datasets that will have *m* different imputations in place of the erstwhile missing data points. The algorithm generates predictions for the distribution of each of the missing values based on linear estimates of the covariances of all observed data points in the data matrix.[5] After imputation, we obtain point estimates of the erstwhile missing items by averaging across the *m* separate imputed values. We also obtain the variance of each multiple imputation point estimate by adding the sample variance in the point estimates across the data sets to the average of the estimated variances from within each completed data set (*cf*. King *et al*. 2001, 53). Because the variable for which we primarily want to obtain imputed values is categorical one, measuring choices among a multitude of candidates or party lists, we generate imputations for *k*-1 dummy variables created from the *k* categories of the vote choice variable. For each dummy, the

[5] Note that the purpose of this method is explicitly not to create causal explanation or parameter interpretation. For further information on the logic of multiple imputation and the computational algorithms consult King *et al*. (2001).

imputation program then takes Bernoulli draws to impute 1 with probability equal to continuous imputation and 0 if otherwise.

The imputed values thus obtained can be used to simulate how non-voters might have voted if they had participated in the respective election and their vote choice was influenced the same way as those of the actual voters. This is equivalent to saying that we simulate the vote distribution among the non-voters that matches the distribution of votes among those voters who are exactly like them in terms of their socio-demographic characteristics and observed information level. This approach has numerous advantages compared to traditional methods. Firstly, since we base our measure of individual electoral participation on actual vote choice, we do not have to rely on reported turnout for our estimation of its effects. Instead, our measure of abstention is simply the missing values on the vote choice variable. All those respondents who did not state which party or candidate they voted for at the last elections are treated as abstainers.[6] We thereby automatically eliminate to a large extent a problem that universally troubles traditional studies of turnout effects, namely that far more respondents report having voted than actually did so. Although distorted recalls of electoral participation may inflate rather than deflate the correlation between social status and turnout (*cf.* Anderson and Silver 1986), their overall impact might lead to an underestimation of the potential for turnout effects on election outcomes (Tóka 2002, 33).

The actual imputation procedure is based on information about voters and abstainers contained in the dataset, making use of those variables that – based on our theoretical understanding of the underlying processes – we assume to be systematically related to vote choice. These variables are above all those relating to demographics. We include gender, race, and age covariates, as these variables are often found to be influential in determining candidate/party preference. Additional socio-demographic variables, such as union membership, income, urban versus rural residence, religious denomination and language are also included, because it has been conjectured that these socio-demographic variables influence either turnout or vote choice or both. We also include several variables pertaining to evaluations of economic status, as retrospective

[6] Respondents were asked the following question: 'One year has passed since the last elections. Did you vote? (If yes) Which party [or candidate] did you vote for?'

(but 'sociotropic') voting theory (e.g. Fiorina 1981, Kiewiet 1983) implies that individuals who believe that the economy suffered during the past twelve months should base their (anti-incumbent) vote decision on this. Above all, however, we impute missing data points based on the reported party and party leader preferences of voters and non-voters as expressed in thermometer scales for each party and candidate. At a later stage of the analysis we will explore the relationships of vote choice with some of these variables, as well as with others that, for technical reasons, have not been included in the imputation process. While it would be optimal to include all variables that are to appear in the subsequent causal analysis in the imputation model, the multiple imputations procedure gives a good approximation of the optimal posterior distribution of the missing elements, given the observed data matrix, even with an imputation model that differs from the analysis model (King *et al*. 2001, 56). Appendix A provides a synopsis of the variables that are included in the multiple imputation procedure for each country.

Analysis

The analysis here will examine the issue of higher or full turnout at three levels. First of all we will look at the national level: In which countries does low or incomplete turnout make a difference? We will then move to the party level: Which parties would gain, and which parties would lose? In a later draft we will explore the partisan consequences of differential individual-level propensities to vote in order to see whether the effects we observe at party and national level are linear (Key 1964; Grofman, Owen and Collet 1999): Will a turnout rise from 55 to 65 percent have the same or different effects that an increase from 65 to 75 percent? And will we be able at all to predict which segments of the group of abstainers will be mobilised to turn out the vote if overall turnout rises?

This analysis is not an exercise in hypothesis testing but is rather an exploration to see what patterns, if any, we find in that data *after* obtaining the estimates of less-than-full turnout from multiple imputation. Nevertheless we need some theoretical guidelines. These come from what we have learned about turnout itself: why turnout varies across space and time, and who votes and who does not. There are a number of patterns that

seem possible, given theories and evidence about the reasons why people do not vote in the first place.

We begin with *country-level* expectations. The first argument to explain non-voting is that non-voters are resource-poor (Blais and Dobrzynska 1998; Lipset 1963, 182-3; Verba and Nie 1972; Verba, Nie and Kim 1978, Brady, Verba and Schlozman 1995). Hence, some argue for the existence of a pattern of bias against more left wing parties as they tend to be supported by those with fewer resources who are less likely to participate (Lijphart 1997). Countries with greater inequalities in political resources might, following this logic, also be the ones where turnout would be more likely to make a difference. Secondly, strong social movement organisations, such as classic mass parties, could make up by organisation what their natural supporters lacked at an individual level (Lipset 1963). There have been reports of the decline of class voting in advanced industrialised countries over the past two decades (e.g. Franklin 1991; Gray and Caul 2000). Others, however, have emphasised that, despite some decline, class cleavages continue to be important predictors of vote choice (Manza, Hout and Brooks 1995), as well as of turnout (Radcliff 1992). Therefore, countries with party systems rooted in societal divisions might show fewer and smaller differences between observed and imputed outcomes. A third argument implies that non-voting is in part a strategic choice. At least some non-voters know their preferred party will be unsuccessful and therefore choose not to waste their time voting. We would expect this to manifest itself more in countries where there is an effectively high electoral threshold.

Moving on to *party-level* differences, a related argument claims that non-voters are non-voters because they have little contact with agencies of mobilisation (Rosenstone and Hansen 1993; Brady, Verba and Schlozman 1995). Following this logic, we might expect larger parties to be more attractive to potential supporters than smaller parties, and to be more effective at mobilising any latent support. Again, this would lead us to expect non-voters to tend towards support for smaller parties. We might also expect larger parties to have more resources to mobilise potential supporters. Consequently, those who stay at home might be more likely to have a preference for smaller parties. A second argument sees non-voting as, to some extent, a sign of disaffection (Crozier, Huntington and Watanuki 1975; Gurr 1970). Non-voters are more

detached from the established political system, and if they did vote it would tend to be for more radical parties both right and left. Thirdly, for the same reason that the existence of strategic non-voting that leads us to expect higher abstention in countries with an effectively high electoral threshold, we would also expect to see very small parties to benefit the most from hypothetical turnout increases.

All of these arguments tend to view voters and non-voters as entirely separate groups of people but in fact we know that many people move both into and out of the electorate over time. Habitual voters may abstain because they are acutely unhappy with the incumbent performance of their traditional party. This may be due to the state of the economy, as suggested by theories of retrospective economic voting (e.g. Fiorina 1981, Kiewiet 1983), or on the inevitable failure by any government to deliver on some of their election pledges. At any rate we know that governing parties tend to lose votes (Nannestad and Paldam 2000, 2002). Some of that loss will be due to abstention by erstwhile supporters. Hence, we might expect governing parties to gain from more complete hypothetical turnout. There is no reason to suspect that this will be more apparent in some countries than others, or with respect to left wing rather than centre or right parties.

We can summarise these expectations briefly. At the country level, flowing from arguments about non-voting being due to a lack of resources and weak mobilisation, we might expect:

- weaker differences between actual and hypothetical turnout where party systems reflect strong social cleavages, including class.

From arguments about strategic voting we might expect:

- weaker differences between actual and hypothetical turnout where electoral thresholds are lower.

At the party level, arguments about non-voting being due to a lack of resources and weak mobilisation lead us to expect:

- left wing parties to benefit most from 'complete' turnout.
- smaller parties to benefit most from 'complete' turnout.

From arguments that non-voting denotes disaffection we might expect:

- more radical parties to benefit from 'complete' turnout.

From arguments about strategic voting we might expect:

- smaller parties to benefit most from 'complete' turnout.

From arguments about the transient nature of non-voting we might expect:

- incumbent parties to benefit most from 'complete' turnout.

One final point is that any effect may need a relatively low turnout to be manifested. If turnout is already very high, say about 90 percent, we cannot expect an increase even to the 100 ceiling, to make much difference to the result. However, where turnout is very low, say 50 percent, a doubling of the numbers voting can potentially have a serious impact.

Results

We will start by examining the impact of potential universal turnout at national level. In order to express the net differences between the observed and the hypothetical vote in a summarized and non-directional way, we use the Gallagher index of disproportionality. Normally used to measure the difference between the distributions of votes and seats in an election, this index uses squared differences of the proportions, thereby giving larger weight to the big vote share changes for individual parties. It thus provides an ideal tool for comparing the observed-versus-imputed vote bias across countries and elections. Figure 1 shows the distribution of the index across our 30 countries. Two obvious points spring from this table. First of all, there is considerable similarity overall between the observed and the hypothetical outcome as indicated by the fact that the index values are quite close to zero. Only in a few countries – including Spain and Slovenia, and perhaps Switzerland – is the dissimilarity between the two outcomes other than very modest. In order to set these data in context we might consider the vote-seat disproportionality of electoral systems as measured by Gallagher's index in EU countries in the 1990s. Only in the UK and France does the index exceed a value of ten, but it averages 20 in France and about 15 in the UK. In Belgium it is three, in Iceland two, one in the Netherlands, two in Sweden and

three in Switzerland and Germany, six in Spain and five in Portugal (Gallagher Laver and Mair 2001). In general it appears that the difference between the observed and the hypothetical vote with complete turnout is no more dramatic than vote-seat disproportionality in proportional electoral systems. Only where there are majoritarian systems, as in the UK (and France, but not in the USA) is the bias introduced by the electoral system much larger than any case of bias consequent on less than complete turnout.

What accounts for differences between actual and hypothetical vote? It is evident that levels of actual turnout are important. Figure 2 shows the relationship between actual turnout and Gallagher's index. The relationship at first glance is not a strong one (R^2=0.10), but without Spain and Slovenia, where the observed vote is very disproportional to the underlying distribution of preferences despite high levels of turnout, it is much stronger (R^2=0.46). What explains the deviations from the regression line? We suggested earlier they might be due to the existence, or otherwise, of strong societal-party cleavages but no such pattern is apparent here. Switzerland surely has stronger linkages than the USA but, if so, these two cases are each on the wrong side of the line. In general we would expect that the party systems of older European democracies would prove to be more effective mobilisers than those of the newer democracies. Certainly the older ones tend to have much higher turnout but once we take this into account, and if we ignore the outliers of Spain and Slovenia again, there is no difference between older and new democracies in terms of differences between observed and full turnout.

Turning to individual parties, what accounts for the pattern of gains and losses?[7] There is certainly a wide variation between parties even though, as is evident at country level, differences are generally quite small. Figure 3 shows the overall distribution: Many parties would gain a small amount of votes, with fewer parties losing out, although some lose a lot. Overall, very few parties gain much. The reason for this becomes clear when we look at the relationship between party size and the impact of complete turnout on vote parties' electoral success as displayed in Figure 4. The

[7] A full list of parties and both their support in the sample of those who reported voting as well as reported and imputed support in the full sample is provided in Appendix B.

smallest parties tend to gain; the largest ones tend to lose. However, there is considerable heteroskedasticity, with more variation amongst large parties than small ones. The regression line shown is estimated from a weighted regression where observations have been adjusted by dividing each by the square root of the source of heteroskedasticity (party size) to eliminate it. R^2 is 0.41, the coefficient for party size is -0.03, and the constant term is 0.63; remember, however, that these are calculated on the basis of a transformed change variable so the resulting regression line is slightly curvilinear. It can be seen that parties are likely to gain most when they win about 10 percent of the vote; at 20 percent the expectation of gain is zero and thereafter the expectation is for a loss.

Apart from size we suggested that ideology and incumbency might be related to the pattern of gains and losses. Table 1 shows weighted generalized east squares regressions of vote change on party size, incumbency and the left-right position of the party (as inferred from its voters ideological self placement). We show one model with a single left right term and another with a squared term for ideology, allowing for the extremes to do better (or worse). We estimate the effects of party size, incumbency and left-right position on vote change. Again we find strong size effects. Again, small parties would do better in the hypothetical election; large parties would do worse. The coefficient for incumbency indicates it is not government parties but opposition parties who are weakest at mobilising their potential. However, this estimate is only on the margins of conventional significance levels. The picture is clearer with respect to left and right. There is no significant effect for ideology, either left verses right or extremes against centre. The only sizeable effect, however, remains party size.

Small numbers of votes can of course be highly important where they have an impact on the relationship between the major parties. While the larger parties tend to lose hypothetical support to the smaller ones, it may well be that, between the larger parties, these shifts change the relative ordering of parties. Given that many of the smaller parties may well still fall short of electoral thresholds, even with a boost in support, it is this change in the ranking that may be the politically more important effect. To explore this we computed the lead of the largest party in the real vote and in the hypothetical vote. The relationship between first-over-second party lead under observed versus hypothetical turnout is displayed in Figure 5. The graph contains two lines, a

solid one indicating the situation in which the gap would remain unchanged, and a dashed regression line summarising the relationship between the hypothetical and real gap between the two largest parties. As we might expect from the analysis above, it appears that the gap tends to narrow. Most points are below the solid line. In Hungary, Wallonia, Portugal and Israel the gap would widen slightly but in most places it gets smaller, and indeed much smaller in Spain. In Slovenia, the largest party actually would lose its place on top of the pile.

Conclusions

We have provided a novel approach to estimating the effective difference between observed vote choice and vote choice under a scenario of 100 percent turnout. Treating non-voters as missing data points on a variable measuring individual vote choice and then using state-of-the-art software to fill in missing items constitutes an efficient way of imputing unobserved individual choices. Our estimates of the raw biases for each party follow a roughly similar pattern across parties and countries as those identified by Tóka (2002). However, the changes in the parties' fractions of the vote implied in our results are much higher – often up to ten times – than those found by Tóka. And on occasion, the direction of the bias estimated by our imputation procedure differs from Tóka's results too. For example, while Tóka estimated a gain of 0.3 percent for the German Social Democratic Party in the 1998 federal election under a scenario of full turnout, our estimate of the bias is ten times higher, and in the opposite direction: According to our post-imputation vote choice estimate, the Social Democratic Party would have won a full three percent less had everyone shown up on election day. While Tóka's weighting approach is restricted to demographic variables only, our imputation process makes use of a multitude of variables, thereby maximising the use of information available from the covariates of observed variables. Furthermore, our estimates are generated from multiple imputation, followed by multiple re-sampling, which leads to satisfactory standard errors. We therefore have sufficient reason to trust our estimates more in cases were our findings diverge from his.

Based on these estimates, we find at the country level that the change in parties' vote share between before and after imputation is in fact a function of turnout, that is, of the scope for change, which increases with declining turnout. This finding contradicts

Tóka's results, which suggest that any change in vote share is best explained by the overlap between the demographic correlates of vote choice and participation, and not so much by how far actual turnout is from 100 percent (Tóka 2002, 38). Unlike Tóka, we have not, however, been able to link the size of vote change to any underlying societal party cleavages. The two elections in Spain and the one in Slovenia, however, stand out as clear outliers, with very high differences between observed versus hypothesised vote choice despite rather high turnout at these elections.

At the level of parties, we found no evidence for either left, right, or centre parties gaining from full turnout scenarios. Comparing this to previous findings, we note that Tóka found miniscule yet consistent favourable implications for left-of-centre parties under a 100 percent turnout scenario, while our effects are much higher in magnitude but largely unrelated to left-right position. More systematic patterns emerge with respect to incumbency, party size and winning party lead. Here, we found that non-governing parties typically benefit from full turnout – a finding in line with DeNardo's (1980) suggestion that increased turnout is harmful to incumbents. Also, smaller parties would clearly gain from full turnout. However, this finding has to be seen in the context of features of the electoral system that may be more causally proximate to electoral outcomes than are variations in turnout (Jackman 2001). Wherever legal or effective thresholds are in place, even relatively large gains from increased turnout would not necessarily heave small parties into parliament. Finally, we found that full turnout would on average reduce the gap between the strongest and second-strongest party, often to non-negligible effect. In one exceptional case, that of the Slovenian election of 1996, full turnout would have led to a different party coming in first in the election.

Overall, our findings are consistent with the bulk of research implying rather mild effects of increased turnout. While we replicated some positive findings of previous research and contradicted others, our findings are largely in line with studies reporting little to no systematic gains from turnout for left-of-centre parties. In a later draft we will extend our analysis by making use of the individual level data that the imputation process makes available to see what impact different degrees of increased turnout have on hypothetical outcomes. We will also explore more fully the relationships

between the social-structural underpinnings of participation and vote choice and their relevance for the counterfactual situation in which more people vote.

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Table 1 GLS regression of vote change on party size, incumbency and party.

	Model 1		Model 2	
	Coeff	T value	Coeff	T value
Party size (0.05 to 52)	-0.029	-11.26	-0.029	-11.24
Incumbent (1,0)	-0.193	-2.03	-0.193	-2.07
Left right position (-3.5 to +5)	-0.028	-1.56	-0.024	-1.19
Left right position squared			-0.004	-0.44
CONSTANT	0.649	17.64	0.658	15.35
F	73.3		54.9	
	(3,289)		(4,288)	
R^2	.43		.43	
MSE	0.48		0.48	
Breusch-Pagan test: chi2	0.01		0.01	
p value	0.93		0.93	

Note: The dependent variable here is adjusted, to eliminate heteroskedasticity. The adjustment is division by the square root of party size.

Figure 1 Difference between observed and hypothetical party coice (Gallagher index of disproportionality)

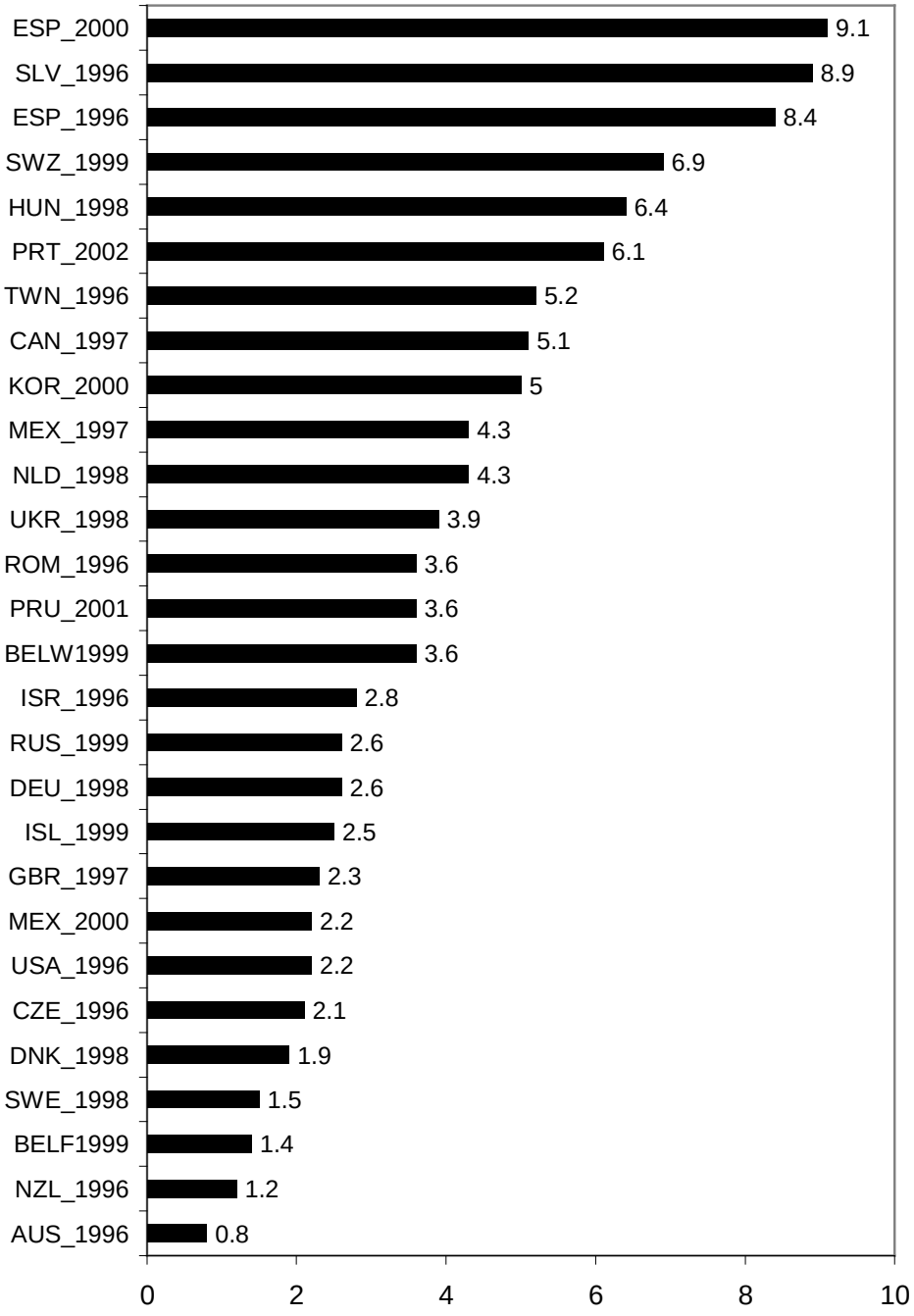
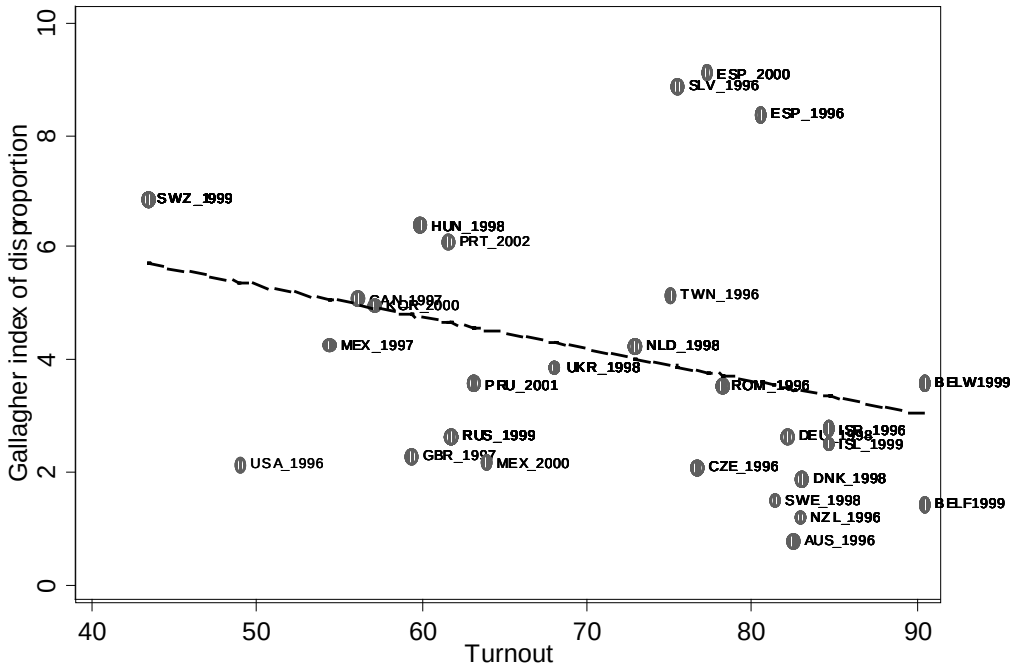


Figure 2 Country level change with full turnout



• Gallagher index

------- Linear Prediction

Figure 3 Losses and gains if everyone voted: all parties

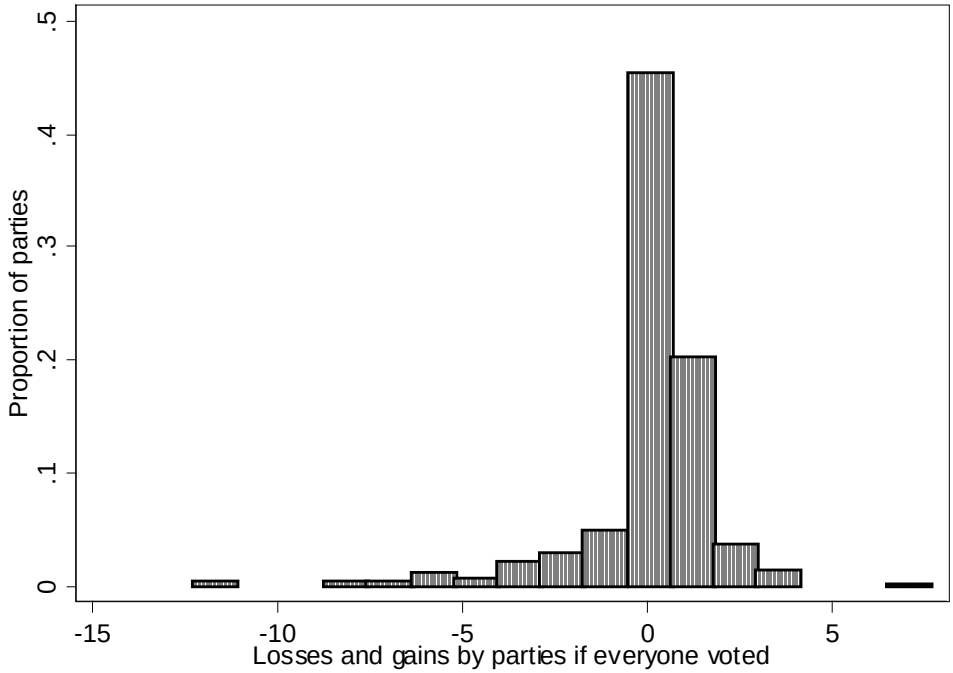
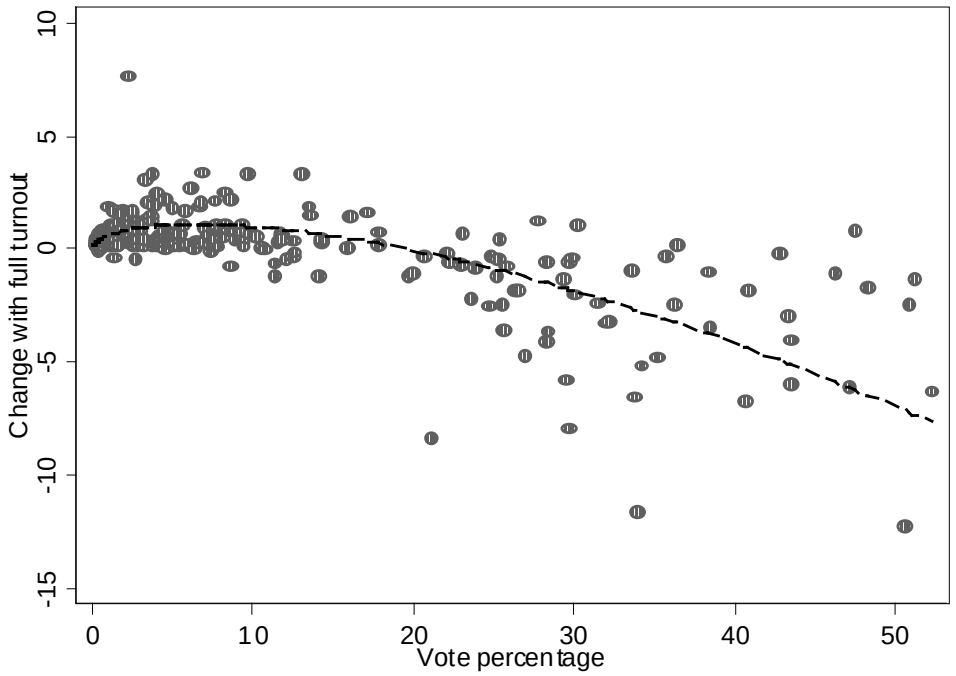


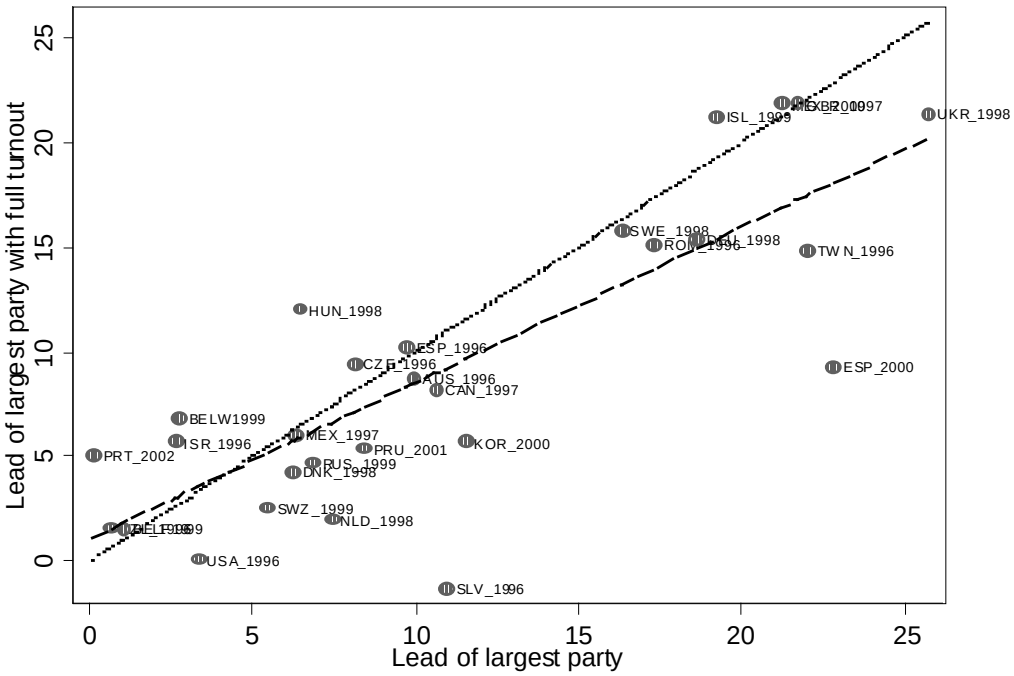
Figure 4 Party size and the change with full turnout



• Percentage vote change

------- Curvilinear Prediction

Figure 5 Changing lead of largest party with complete turnout



- Lead of largest party with full turnout

------- Expected lead if no change

- - - - Predicted gap

Appendix A. Synopsis of variables included in multiple imputation of vote choice by election, and pseudo R^2 of multinomial logit regression of vote choice on 11-point party/leader preference scales

		Language	Religion	Catholic	Muslim	Age	Female	Income	Urban/rural	Trade union member	Party identification	Left-right self placement	Satisfaction w democracy	Economy better/worse	Political efficacy	Turnout in district (stzd.)	Self-reported turnout	Political information level	Party A	Party B	Party C	Party D	Party E	Party F	Party G	Leader A	Leader B	Leader C	Leader D	Leader E	Leader F	Leader G	Pseudo R2 from multinomial logit*
USA_1996	1,534		x			x	x	x	x	x	x	x	x	x	x		x	x	x	x	x					x	x						.40 (792)
AUS_1996	1,798		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x				.54 (1429)
BELF1999	2,179		x			x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x									.51 (1603)
BELW1999	1,960					x	x			x		x	x	x	x	x		x	x	x	x	x	x										.59 (1041)
CAN_1997	1,851	x		x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x		x	.63 (1325)
SWZ_1999	2,048			x		x	x		x	x	x		x		x	x		x	x	x	x	x	x			x	x						.53 (1000)
CZE_1996	1,229			x		x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x	x		.65 (935)
DEU_1998	2,019			x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		.51 (1063)
DNK_1998	2,001					x	x		x		x	x	x		x	x	x		x	x	x	x	x	x		x	x	x	x	x	x		.70 (1526)
ESP_1996	1,212	x				x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x				x	.47 (596)
ESP_2000	1,208	x				x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x				x	67 (434)
GBR_1997	2,897			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x					x	x	x					.55 (491)

HUN_1998	1,525				x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x			.60 (914)
ISL_1999	1,631				x	x		x	x	x	x	x	x	x		x		x	x	x	x				x	x	x	x				.71 (935)
ISR_1996	1,091	x			x	x	x		x	x	x		x	x	x			x	x	x	x	x	x			x	x	x	x	x		x	.44 (715)
KOR_2000	1,100		x			x	x	x	x	x	x	x	x	x	x				x	x	x	x				x	x	x					.39 (359)
MEX_1997	2,033					x	x		x		x		x	x	x	x	x	x	x		x					x		x					.45 (699)
MEX_2000	1,766					x	x		x	x	x			x				x	x	x	x												.43 (437)
NLD_1998	2,101			x	x	x	x	x	x		x				x			x	x	x	x	x	x										.58 (900)
NZL_1996	4,080		x			x	x	x	x	x	x	x		x		x	x	x	x	x	x	x				x	x	x					.60 (2044)
PER_2001	1,118					x	x	x	x		x	x	x		x	x	x		x	x	x	x				x	x	x	x				.24 (628)
PRT_2002	1,303		x			x	x		x	x	x		x	x	x	x	x	x	x	x	x	x				x	x	x	x				.57 (625)
ROU_1996	1,175					x	x	x	x	x	x		x	x	x	x	x	x	x	x		x		x		x	x		x		x		.43 (517)
RUS_1999	1,842					x	x		x	x				x	x				x		x		x	x		x		x			x	x		n/a
SVN_1996	2,031			x	x	x	x		x	x	x		x	x	x				x	x	x	x	x	x		x	x	x	x	x				.41 (831)
SWE_1998	1,157					x	x	x	x	x						x		x	x	x						x	x						.68 (687)
TWN_1996	1,200					x	x	x	x	x	x		x	x	x		x	x	x	x	x	x				x	x	x					.40 (555)
UKR_1998	1,148	x				x	x	x	x	x				x	x	x		x	x	x	x										x		.65 (184)

*Cell entries are McFadden R^2s from multinomial logistic regression of vote choice on all available party and party leader preference thermometer scales (11-point), with controls for retrospective economic voting and language and religion where appropriate. Number of observations in parentheses.

Appendix B. Party vote shares before and after imputation, and change.
(Parties with less than 2 percent of the survey vote are incorporated into "Others".)

Country and election	Party	Survey vote	Full vote	Change
AUS_1996	Liberal Party	46.2	45.2	-1.0
AUS_1996	Australian Labour Party	36.3	36.5	0.2
AUS_1996	Australian Democrats	6.6	6.8	0.2
AUS_1996	National (Country) Party	5.8	6.0	0.2
AUS_1996	Other Party	2.6	2.9	0.2
AUS_1996	Greens	2.4	2.6	0.2
BELF1999	Volksunie-Ideeen Voor 21st Eeuw	24.8	24.4	-0.4
BELF1999	Vlaamse Liberalen En Democraten	23.8	22.9	-0.9
BELF1999	Socialistische Partij	14.2	14.4	0.3
BELF1999	Anders Gaan Leven	14.0	12.8	-1.2
BELF1999	Partie Reformateur Liberal-Front Democratique Des	10.1	10.7	0.5
BELF1999	Vlaams Blok	8.2	9.4	1.1
BELF1999	Others	2.8	3.0	0.2
BELF1999	Parti Social Chretien	2.2	2.5	0.3
BELW1999	Partie Reformateur Liberal-Front Democratique Des	29.6	29.0	-0.6
BELW1999	Ecologistes Confederes Pour L'organisation De Luttes	26.9	22.2	-4.7
BELW1999	Parti Socialiste	25.3	25.7	0.4
BELW1999	Parti Social Chretien	14.2	14.6	0.5
BELW1999	Others	4.0	8.6	4.5
CAN_1997	Liberal Party	35.1	30.3	-4.8
CAN_1997	Reform Party	24.6	22.1	-2.5
CAN_1997	Progressive Conservative	17.7	18.4	0.7
CAN_1997	New Democratic Party	13.0	16.3	3.3
CAN_1997	Bloc Quebecois	9.6	13.0	3.3
CHE_1999	Social Democrats	28.3	24.6	-3.7
CHE_1999	Swiss People's Party	22.9	22.1	-0.7
CHE_1999	Freethinking Democrats	21.0	12.7	-8.4
CHE_1999	Christian Democrats	12.4	12.8	0.4
CHE_1999	Green Party	3.6	4.8	1.2
CHE_1999	Protestant People's Party	2.3	3.5	1.2
CHE_1999	Liberal Party	2.0	3.2	1.2
CHE_1999	Others	7.5	16.2	8.7
CZE_1996	Civic Democratic Party	33.6	32.6	-1.0
CZE_1996	Czech Social Democratic Party	25.5	23.0	-2.5

CZE_1996	Communist Party Of	9.8	10.4	0.6
CZE_1996	Civic Democratic Alliance	9.2	9.9	0.7
CZE_1996	Christian Democratic Union	7.3	7.2	-0.1
CZE_1996	Association For The Republic	6.4	6.7	0.4
CZE_1996	Other Parties	5.3	6.0	0.7
CZE_1996	Free Democrats	2.2	2.9	0.7
CZE_1996	Others	0.8	1.2	0.4
DEU_1998	Social Democratic Party	43.3	40.3	-3.0
DEU_1998	Christian Democratic Party	25.7	24.9	-0.8
DEU_1998	Party Of Democratic Socialism	11.3	10.6	-0.6
DEU_1998	Alliance 90/Greens	7.9	8.8	0.9
DEU_1998	Free Democratic Party	5.3	5.4	0.1
DEU_1998	Christian Social Union In Bavaria	2.7	3.8	1.1
DEU_1998	Others	3.9	6.1	2.3
DNK_1998	Social Democrat	31.4	29.0	-2.4
DNK_1998	Liberal	25.2	24.7	-0.5
DNK_1998	Conservative	10.6	10.6	0.0
DNK_1998	Socialist People	8.8	9.2	0.5
DNK_1998	Danish People	7.1	7.7	0.6
DNK_1998	Radical Liberal	4.5	4.5	0.0
DNK_1998	Centre Democrat	4.4	5.1	0.7
DNK_1998	United List	3.2	3.2	0.1
DNK_1998	Christian People	2.2	2.5	0.3
DNK_1998	Progressive	2.2	2.5	0.3
DNK_1998	Others	0.3	0.8	0.5
ESP_1996	Partido Socialista Obrero Español	43.4	37.3	-6.0
ESP_1996	Partido Popular	33.7	27.1	-6.6
ESP_1996	Izquierda Unida	6.7	8.7	0.6
ESP_1996	Convergencia I Unio	4.9	5.6	0.7
ESP_1996	Other Parties	11.3	21.2	9.9
ESP_2000	Partido Popular	50.5	38.2	-12.3
ESP_2000	Partido Socialista Obrero Español	27.7	28.9	1.2
ESP_2000	Izquierda Unida	6.7	8.7	2.0
ESP_2000	Convergencia I Unio	5.6	6.7	1.1
ESP_2000	Other Parties	9.6	17.5	7.9
GBR_1997	Labour	48.2	46.5	-1.7
GBR_1997	Conservative	26.5	24.7	-1.8
GBR_1997	Liberal Democrats	17.0	18.6	1.6

GBR_1997	Scottish National Party	4.9	5.2	0.3
GBR_1997	Others	3.3	5.0	1.6
HUN_1998	Hungarian Socialist Party	36.1	33.7	-2.5
HUN_1998	Alliance Of Young Democrats	29.7	21.7	-7.9
HUN_1998	Independent Smallholder's Party	13.5	15.0	1.5
HUN_1998	Alliance Of Free Democrats	7.6	8.6	1.0
HUN_1998	Hungarian Worker's Party	3.5	5.0	1.5
HUN_1998	Hungarian Justice And Life Party	3.3	4.6	1.3
HUN_1998	Christian Democratic People's Party	2.4	4.1	1.6
HUN_1998	Hungarian Democratic Forum	2.3	3.7	1.4
HUN_1998	Others	1.5	3.6	2.1
ISL_1999	Independence Party	42.7	42.5	-0.2
ISL_1999	Alliance	23.5	21.3	-2.3
ISL_1999	Progressive Party	19.6	18.4	-1.2
ISL_1999	Left Greens	9.2	10.3	1.1
ISL_1999	Liberal Party	4.5	6.6	2.2
ISL_1999	Others	0.5	0.9	0.5
ISR_1996	Avoda	28.2	27.6	-0.5
ISR_1996	Likud	25.6	21.9	-3.6
ISR_1996	Meretz	8.0	8.5	0.5
ISR_1996	Mafdal	7.7	8.1	0.4
ISR_1996	Yahadut Hatora	7.2	7.2	0.1
ISR_1996	Israel Ba'aliya	6.2	6.2	0.0
ISR_1996	Shas	4.7	5.1	0.5
ISR_1996	Hadash + Balad Block	4.3	5.1	0.8
ISR_1996	Haderech Hashlishit	4.0	4.5	0.5
ISR_1996	Moledet	2.0	2.5	0.5
ISR_1996	Others	2.3	3.2	0.9
KOR_2000	Grand National Party	47.1	41.0	-6.1
KOR_2000	Millenium Democratic Party	35.6	35.3	-0.3
KOR_2000	Independent	8.2	10.7	2.5
KOR_2000	United Liberal Democrats	6.6	8.4	1.8
KOR_2000	Others	2.5	4.6	2.1
MEX_1997	Democratic Revolution Party	38.4	34.9	-3.5
MEX_1997	Institutional Revolutionary Party	32.1	28.9	-3.2
MEX_1997	Nation Action Party	20.6	20.3	-0.3
MEX_1997	Labor Party	6.0	8.7	2.7
MEX_1997	Others	2.9	7.2	4.4

MEX_2000	Alliance For Change	51.2	49.8	-1.4
MEX_2000	Institutional Revolutionary Party	30.0	28.0	-2.0
MEX_2000	Alliance For Mexico	16.0	17.4	1.4
MEX_2000	Social Democracy	2.2	3.3	1.0
MEX_2000	Others	0.6	1.6	1.0
NLD_1998	Labor Party	29.4	23.7	-5.8
NLD_1998	People's Party For Freedom And Democracy	22.0	21.7	-0.2
NLD_1998	Christian Democratic Appeal	17.7	17.9	0.2
NLD_1998	Democrats 66	11.7	12.1	0.4
NLD_1998	Green Left	8.7	9.4	0.7
NLD_1998	Socialist Party	4.4	5.2	0.8
NLD_1998	Reformation Political Federation	2.4	3.2	0.8
NLD_1998	Others	3.7	6.8	3.1
NZL_1996	National	29.8	29.4	-0.4
NZL_1996	Labour	29.2	27.8	-1.4
NZL_1996	New Zealand First	15.9	15.9	0.0
NZL_1996	Alliance	10.5	10.5	0.0
NZL_1996	Act New Zealand	7.0	7.9	0.9
NZL_1996	Christian Coalition	4.3	4.4	0.1
NZL_1996	Others	3.3	4.0	0.7
PER_2001	Peru Posible	28.3	24.2	-4.1
PER_2001	Partido Aprista	19.9	18.8	-1.1
PER_2001	Frente Ind. Moralizador	12.5	12.3	-0.1
PER_2001	Unidad Nacional	12.0	11.5	-0.4
PER_2001	Somos Peru	6.9	7.2	0.3
PER_2001	Accion Popular	5.0	5.1	0.1
PER_2001	Union Por El Peru	4.9	6.7	1.8
PER_2001	Cambio 90/ Nueva Mayoria	3.7	5.6	1.9
PER_2001	Todos Por La Victoria	2.1	2.7	0.5
PER_2001	Others	4.8	6.1	1.3
PRT_2002	Socialist Party	40.8	39.0	-1.8
PRT_2002	Social Democratic Party	40.7	33.9	-6.8
PRT_2002	Unitarian Democratic Coaliti	8.5	10.7	2.2
PRT_2002	Popular Party	6.8	10.1	3.4
PRT_2002	Left Block	3.2	6.3	3.1
ROU_1996	Romanian Democratic Convention	43.5	39.4	-4.1
ROU_1996	Romanian Party Of Social Dem	26.2	24.3	-1.8
ROU_1996	Social Democratic Union	9.3	9.6	0.3

ROU_1996	Democratic Union Of Hungarians	4.5	5.3	0.8
ROU_1996	Greater Romania Party	4.3	4.9	0.6
ROU_1996	Romanian Social Democratic Party	2.8	3.6	0.8
ROU_1996	Democratic Party	2.6	2.1	-0.5
ROU_1996	Others	6.9	10.8	3.9
RUS_1999	Communist Party Of The Russian Fe	31.9	28.6	-3.3
RUS_1999	Unity Inter-Regional Movement	25.1	23.9	-1.2
RUS_1999	Fatherland all Russia	12.4	12.1	-0.3
RUS_1999	Union Of Right Forces	9.4	9.4	0.1
RUS_1999	Yabloko	7.3	7.5	0.1
RUS_1999	Zhirinovsky Bloc	3.9	4.3	0.4
RUS_1999	Women Of Russia	2.5	2.9	0.3
RUS_1999	Pensioners Party	2.5	2.8	0.4
RUS_1999	Others	5.0	8.5	3.5
SVN_1996	Liberal Democratic Party	33.9	22.3	-64175.0
SVN_1996	Slovenian People's Party	23.0	23.6	0.7
SVN_1996	Social Democratic Party	13.4	15.3	1.8
SVN_1996	United List Of Social Democrats	9.2	10.2	1.0
SVN_1996	Christian Democrats	7.6	9.7	2.1
SVN_1996	Democratic Party	5.7	7.4	1.7
SVN_1996	Slovenian National Party	3.9	6.3	2.4
SVN_1996	Other Parties.	3.4	5.4	2.0
SWE_1998	Sweden's Social Democratic	38.4	37.4	-1.0
SWE_1998	Moderate Rally Party	22.1	21.6	-0.5
SWE_1998	Christian Democrats	11.5	11.8	0.3
SWE_1998	Left Party	11.3	10.0	-1.3
SWE_1998	Green Party	5.1	5.8	0.7
SWE_1998	People Party's Liberals	4.9	5.4	0.5
SWE_1998	Centre Party	4.7	5.4	0.7
SWE_1998	Others	2.1	2.6	0.5
TWN_1996	Nationalist Party (Kuo-Ming Tang)	52.2	46.0	-6.3
TWN_1996	Democratic Progressive Party	30.2	31.2	1.0
TWN_1996	Chinese New Party (NP)	11.7	12.3	0.6
TWN_1996	China Young Party	3.7	7.0	3.3
TWN_1996	Green Party	2.2	3.6	1.4
UKR_1998	Communist Party Of Ukraine	34.2	29.0	-5.2
UKR_1998	People's Rukh Of Ukraine	8.5	7.7	-0.8
UKR_1998	Party Of Greens Of Ukraine	7.7	7.8	0.1

UKR_1998	All-Ukraine Association “Gromada”	7.0	7.2	0.3
UKR_1998	Electoral Block Socialist Party Of Ukraine.	5.1	5.3	0.2
UKR_1998	Progressive Socialist Party	4.8	5.2	0.4
UKR_1998	Social-Democratic Party	4.4	4.9	0.5
UKR_1998	People's-Democratic Party	4.2	4.6	0.4
UKR_1998	“Reforms And Order”	3.9	4.1	0.2
UKR_1998	Electoral Block Of Parties “National Front”	3.7	3.8	0.1
UKR_1998	Electoral Block “Labour Ukraine”	2.8	3.2	0.5
UKR_1998	Social-National Party	2.7	3.2	0.5
UKR_1998	Agrarian Party Of Ukraine	2.5	3.3	0.8
UKR_1998	Others	8.6	10.6	2.0
USA_1996	Republicans	50.8	48.4	-2.5
USA_1996	Democrats	47.5	48.3	0.8
USA_1996	Others	1.7	3.3	1.6