

Turnout matters: sometimes¹

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Abstract

We propose a novel method for estimating the partisan effects of low voter turnout., by treating nonvoters as missing data points on a variable measuring vote choice. Using a statistical model of multiple imputation, we estimate the missing values on reported party choice at 28 elections in 25 countries in the Comparative Study of Electoral Systems dataset. Calculating the differences between observed and ‘complete’ (100 percent) turnout, we identify party and country-level conditions under which low turnout affects electoral outcomes. We also provide simulations of election outcomes for incremental changes in turnout. While our findings suggest few systematic gains from increased turnout for left-of-centre parties, we show that small parties and non-incumbents would benefit if everybody voted.

Keywords: Turnout effects; Multiple imputation

Despite widespread concern about the partisan and policy implications of low turnout, few studies to date have succeeded in gauging with significant certainty the extent to which low voter turnout has real and tangible effects on election outcomes. One important reason for the many insignificant or contradictory findings generated by past research on turnout effects is that the models used are unable to take account of contextual factors such as the electoral system or the party system or are restricted to a small number of variables. In this paper we suggest a remedy for this situation by providing a systematic assessment of the partisan effects of low voter turnout in representative democracies. Treating vote abstainers as missing data on a variable measuring vote choice, we estimate election results under a scenario of full turnout in a way that overcomes these commonly encountered problems. Our method allows us to control for contextual factors in a cross-sectional, multi-country research design and provides more robust estimates of the hypothetical election outcomes by the use of repeated sampling from linear multiple estimates of the imputed vote choices of non-voters.

We 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 nonvoters, 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 for each country, as well as at the level of parties. Using the examples of German, Spanish, UK and US elections between 1996 and 2000, we also calculate individual-level probabilities of voting and simulate what would happen if turnout went up in increments of 10 percent deciles. Finally, we will summarize our findings and discuss them in the light of existing research, pointing out directions for future research on this important topic.

1. Treating vote abstention as a missing data problem

Individual-level studies of turnout effects are usually restricted either to analysing one election at a time (e.g., 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). As a result, many studies forgo the ability to distinguish systematic and general turnout effects from the situational effects on voting behaviour pertaining to specific elections. Only an analysis of a heterogeneous sample of polities and elections allows us to make substantive causal claims about turnout effects in any one election (Tóka, 2002, p. 24). In the present study, we make use of information on electoral system-level incentives to vote and mobilisation factors associated with historically different party systems, while simultaneously exploiting information on individual-level determinants of vote choice and turnout.

Studies of the electoral effects of low turnout aim to answer the counterfactual question of expected partisan vote share if turnout was 100 percent (Grofman, Owen and Collet, 1999). It is premised that, if abstainers had party preferences different from those of the voters, then the fact that there was less than complete turnout would have impacted on the outcome of the election. This premise implies a fundamental similarity of low turnout and the problem of making descriptive or causal inferences from a statistical survey sample in which some observations are missing. If missing data points are uncorrelated with the variables of interest or the errors of the covariates, they reduce the number of observations and thereby compromise the efficiency of our estimates. But when the sampling fractions are correlated with the errors or the dependent variable, we are likely to get biased estimates. Analogously, if voters are selected at random in relation to vote choice, the presence of non-voting would merely reduce the efficiency of constituency-wide preference ascertainment. It would not, however, introduce any systematic political bias. The problem is that we have little reason to assume such independence. While the bulk of previous studies of turnout effects may not have established a systematic and directional link between turnout and preferences, their findings do imply that abstention is not perfectly random in relation to the variable of interest: vote choice. There are almost invariable

some demographic biases in turnout and in most, if not all, countries, vote choice is connected to those same demographic variables.

Based on this logic, we treat the unobserved vote choices of nonvoters as missing data points. That means we assume the vote choices of nonvoters constitute data that actually exist but have not been observed or recorded because the potential voters' proclivity to turn out the vote has not exceeded a certain threshold. Those who find this assumption difficult to accept might find it more agreeable to think in terms of preferences instead of vote choices: If we assume that individual preferences over parties and candidates are measured by votes, data on preferences are missing for nonvoters (Dubin and Rivers, 1989, p. 383). The decision to vote or not to vote is an individual choice. The reason why we do not have data on how some citizens voted is because they *chose* not to vote. Therefore, the sample of voters is a *self-selected sample*, introducing the possibility of sample bias (Dubin and Rivers, 1989; Heckman, 1979). Turnout of less than 100 percent thus constitutes a source of selection bias, and, by analogy, of potential partisan bias in elections. Traditional studies of the partisan effects of low turnout attempt to estimate the vote choices of nonvoters by extrapolation based on information available on voters. To this end, regression analyses are run to estimate the relationship between vote choice and a number of explanatory variables and then use the predicted values for vote choice to impute the missing values based on information on nonvoters. Since the missing vote choices are imputed on the regression line as if there were no error, this method tends to overstates the degree of accuracy and may even lead to biased estimates of the countefactual vote choices (King *et al.*, 2001, p. 66).

Fortunately, better techniques for the imputation of missing data and, following the above reasoning, for estimating the vote choices of nonvoters, exist. A powerful tool involves the multiple imputation of missing data points as proposed by King *et al.* (2001). Multiple imputation is a method of statistical inference for incomplete multivariate data. Applied to the problem of low turnout, we assume that the probability of an individual's vote choice remaining unrecorded may depend on the observed values of other variables, but, after controlling for these variables, is independent of any other missing information (King *et al.*, 2001, p. 50). The method involves imputing m values for each missing cell in the data matrix and creating m

completed datasets. For the analysis in this paper, we chose to obtain five imputations per missing data point. Each of the five imputed values is created linearly in the same way we would simulate from regression analysis. However, rather than imputing the unknown values directly on the regression line, each imputation is a linear function of all observed variables, of estimation uncertainty due to not knowing the coefficients exactly as a result of finite sample size, and of fundamental uncertainty generated by the probabilistic nature of the world (*cf.* King *et al.*, 2001, p. 54). This procedure is implemented using an expectation-maximising algorithm by publicly available software designed by Honaker *et al.*² Because vote choice is a categorical variable measuring choices among k candidates or party lists, we generate imputations for $k-1$ dummy variables created from the categories of the original vote choice variable. For each dummy, the programme imputes 1 with probability equal to the continuous imputation and 0 otherwise.

The purpose of multiple imputation is not to create causal explanation or parameter interpretation (King *et al.*, 2001). The algorithm generates predictions for the distribution of each of the missing values based on linear estimates of the covariances of all observations in the data matrix. Thus, multiple imputed values are generated not only for vote choice, but for all variables that we chose to include in the data. Across the five completed datasets that are created in this way, the observed values are the same, but the initially missing values are filled in with different imputations that reflect our uncertainty about the missing data (*cf.* King *et al.*, 2001, p. 53). After creating the multiply imputed datasets, we obtain proportions of the votes cast for each party in these five datasets. We then average across the five resulting proportion estimates and obtain standard deviations of the point estimates across the five datasets.

We apply the procedure outlined above to 28 elections in 25 countries in the Comparative Study of Electoral Systems dataset. Respondents were asked if they voted at the last general elections. If they answered yes, they were then asked which

² The software, *Amelia: A Program for Missing Data*, by James Honaker, Anne Joseph, Gary King, Kenneth Scheve, and Naunihal Singh, is freely available as a standalone Windows program and as a Gauss programme at <<http://GKing.Harvard.edu/>>.

party or candidate they voted for. The actual imputation procedure is based on information about voters and abstainers contained in the dataset, making use of all those variables that – based on our theoretical understanding of the underlying processes – we assume to be systematically related to either vote choice or turnout, or both. These variables include those demographic ones – gender, race, and age – that are often found to be influential in determining candidate or party preference as well as turnout. We also include additional socio-demographic variables, such as union membership, income, urban versus rural residence, religious denomination and language, because it has been conjectured that these influence turnout or vote choice (Norris, 2002, pp. 83-100). Furthermore, retrospective voting theory implies that individuals who believe that the economy suffered during the past twelve months should base their vote decision on their perception of the economic performance of the incumbent (Fiorina, 1981; Lewis-Beck and Paldam, 2000, pp. 114-115). We therefore include a variable recording respondents' evaluations of the economic. Last, but not least, our imputation of missing data points is based on the reported party and party leader preferences of voters and nonvoters as expressed in thermometer scales for each party and candidate. Pseudo- R^2 s from multinomial logistic regressions of vote choice on thermometer scales of party and candidate preferences, as well as economic evaluation, religion and linguistic variables, vary between 0.24 for Peru and 0.71 for Iceland, suggesting that these variables account for a reasonable proportion of the variability in vote choice (cf. Appendix A). Appendix A provides a synopsis of the variables that are included in the multiple imputation procedure for each country.

2. Analysis

We 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? Finally, 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 than an increase from 65 to 75 percent? This analysis is not an exercise in hypothesis

testing but is rather an exploration to see what patterns, if any, we find in the data *after* obtaining the estimates of turnout effects through multiple imputation. Our theoretical guidelines are derived from what we have learned about the determinants of turnout itself: why turnout varies across space and time, and who votes and who does not. Given existing theories and evidence about the reasons why people do not vote in the first place, a number of patterns can be expected.

We begin with *country-level* expectations. The first argument to explain non-voting is that nonvoters are resource-poor (Blais and Dobrzynska, 1998; Verba, Nie and Kim, 1978). 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 lack 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 nonvoters know their preferred party will be unsuccessful and therefore choose not to waste their time voting (Jackman, 1987). We would expect this to manifest itself more in countries whose electoral system imposes an effectively high threshold for votes to translate into seats.

Moving on to *party-level* differences, a related argument claims that nonvoters are nonvoters 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. We might also expect these 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 leads us to expect higher abstention in countries with an effectively high electoral threshold, we would also expect to see very small parties benefit the most from hypothetical turnout increases.

The above arguments tend to view voters and nonvoters as entirely separate groups of people. However, 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, 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 expect:

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

From arguments about strategic voting we might expect:

- larger partisan differences between actual and hypothetical turnout in countries with highly disproportional electoral systems.

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’ (100 percent) 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 become manifest. 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.

3. Results

We will start by examining the impact of universal turnout at the national level. In order to express the net differences between the observed and the hypothetical vote in a summarised and non-directional way, we use the Gallagher index of disproportionality. Originally designed 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 (Gallagher, 1991). 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 graphic. 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. In only a few countries – including Spain and Slovenia, and perhaps Hungary, Switzerland and Portugal – is the dissimilarity between the two outcomes other than very modest. In order to set these results 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 Spain it is six, in Portugal five, in Belgium, Germany and Switzerland three, in Sweden and Iceland two, and in the Netherlands, one (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. But where there are majoritarian systems, as in the UK (but not in the USA) the bias introduced by the electoral system is much larger than any case of bias consequent on less than complete turnout.

What accounts for the 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 ($R^2=0.05$), but if Spain and Slovenia are excluded – in those two countries the observed vote is very disproportional to the underlying distribution of preferences despite high levels of turnout – the relationship is much stronger ($R^2=0.26$). 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? 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 proportion of the votes, with fewer parties losing out, although some would 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 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 using the Huber-White sandwich method to obtain heteroskedasticity-robust estimates and avoid inflated standard errors. R^2 is 0.45, the coefficient for party size is -0.10, and the constant term is 0.99. It can be seen that parties are likely to gain most when they win up to about 10 percent of the vote. 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 varieties of heteroskedasticity-robust OLS regressions of vote change on party size, incumbency, the ideological (left-right) position of the parties as inferred from their voters' ideological self placement, and left-right extremism, measured by a squared term for ideology. Model (1) estimates the combined effects of all variables, including interaction terms of PR electoral system with party size and incumbency, respectively. Again we find strong effects of party size. As already suggested by Figure 3, small parties would do better in the hypothetical full-turnout election; large parties would do worse. The coefficient for incumbency indicates it is opposition parties and not government parties who are least able to mobilise their potential. The relative gains for small parties persist, yet are somewhat mitigated, in proportional representation systems, suggesting that distortion effects from low turnout are stronger in majoritarian systems, where supporters of small parties have strategic reasons to stay at home on election day.

The proportionality of the electoral formula in itself is a significant predictor of turnout effects only if relaxed standards of statistical significance are applied. The picture is clearer with respect to left and right. We employed a number of specifications and measures here. First we used the left-right self-placement of each party's voters to locate it on a left-right scale, an extreme-*versus*-centre scale and a left of centre-*versus*-rest scale. There is no significant effect for ideology, either left versus right or centre, or extremes against centre. Of course, it could be that many left parties do not have the sort of demographic support typified by the old, left, mass parties who now commonly constitute the main centre left party, such as the British Labour Party or the German SPD. To explore whether 'complete' turnout might benefit these parties if not their disparate left-wing rivals, we tried to identify the major centre-left and centre-right parties in each country (where possible) and

examined their performance under increased turnout.³ There was no significant pattern of left-wing gains or right-wing losses amongst these parties. While this effect is not matched by gains for left-of-centre parties, a comparison of the coefficients suggests that the political power balance could be tilted toward non-right parties if everybody voted. Models (2) through (4) repeat the basic model using the various operationalisations of the left-right variable one at a time (3) and in different combinations (2, 4). Model (6) replicates model (5) but only for parties that achieved at least five percent of the vote. All results remain robust across the different models, reducing the possibility that the negative findings for left-wing gains from full turnout are due to specification error.

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 of the biggest parties that will often be the politically more important effect. To explore this, we computed the lead of the largest party in the real vote and again 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 dotted 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 at each of the elections. As we might expect from the analysis above, the gap tends to narrow if turnout reaches 100 percent. Most points are below the dotted line. In Hungary, Iceland, Israel, New Zealand, Portugal and Switzerland, the gap would widen slightly but in most places it gets smaller, and indeed much smaller in Spain. In Slovenia and

³ The list is as follows, with the Left party first on each occasions: Australia Labour and Liberal parties; Belgium Socialist and Liberal parties; Canada Liberal and Conservative parties; Switzerland Socialist and Liberal parties; Germany SPD and CDU/CSU; Spain PSOE and PP; Britain Labour and Conservative parties; Hungary Socialists and Alliance of Young Democrats; Iceland Alliance and Independence parties; Isreal Likud and Avoda; New Zealand Labour and National parties; Portugal Socialist and Social democratic parties; Sweden SAP and Moderates; Taiwan progressive and nationalist parties; USA Democrats and Republicans.

the USA, the largest party actually would lose its place on top of the pile. In Slovenia, the Slovenian People's Party would have won the election as a result of full turnout, and not the Liberal Democratic Party that actually dominated the race.⁴ By contrast, the impact of full turnout might have been more tangible in the USA, where it would have resulted in a Democratic majority in the House of Representatives that would have made at least the first half of Clinton's second term much easier

So far, our estimations of turnout effects have concerned the counterfactual scenario of 100 percent turnout. This is a useful counterfactual in as much as close to 100 percent levels are achievable under conditions of compulsory voting rules, which do not necessarily require voters to be more interested, or more informed about politics. We do not have to assume that an election needs to be more important, or more exciting, or that parties have more resources to get out the vote. However, that scenario is highly unlikely as there is little support for the introduction of compulsory voting at present. For real-world politics, increases of ten or perhaps twenty percentage points are more realistic. And with an eye on the often-voiced concerns of increasing apathy and declining citizen participation, decreases in turnout are arguably even more relevant to political realities. What difference would such changes make? The imputation technique which underlies our analysis thus far is also central to our effort to address this question. Given information on how everyone would vote, it merely remains to identify each electors probability of voting. If this can be done, we can then show at what level of turnout individual parties gain or lose and see whether the patterns we have observed already are linear ones.

It is a straightforward exercise to estimate a predictive model of individual turnout probability for all respondents in our sample, using the full set of variables for which imputations have previously been made. The difficulty is in identifying a model which predicts turnout well. Maximising the power of prediction would demand more variables that exist in the CSES data set than we can utilise here, and a greater degree

⁴ However, as both parties entered into a governing coalition following the election, the impact of that change would have been limited.

of country expertise than we possess.⁵ The analysis that follows is illustrative. We have chosen to examine turnout effects in just a small number of countries and for a small number of parties: the main left and right-wing political parties in four elections – UK 1997, Germany 1998, USA 1996, and Spain 2000. These elections showed different degrees of change under the assumption of full turnout and so provide us with a set of cases to examine the pattern of such changes. First, we predict each individual's propensity to vote based on a standard regression model of turnout. That model includes all those socio-demographic and attitudinal variables that were included in the imputation process for vote choice and are listed in Appendix A together with a variable showing turnout in the respondent's district. Based on these turnout predictions, we group individuals into ten deciles according to their likelihood of voting, from most likely to least likely. We then record the vote share for each of the two major parties in each election, contingent on the different deciles of individual voting probability, starting with higher probabilities of voting and moving incrementally towards the deciles of people least likely to vote.

The results are shown in Figure 6. This also provides a horizontal line indicating the vote share (as a percentage of the electorate) of the party in the initial sample of voters. What we are looking for here is any indications that a party is more attractive to some groups of voters than others – defined in terms of their probability of voting: in other words, a line that is not straight. We are also looking for whether the gap between the two parties changes across voters groups. If it does, is that an even change (widening, or narrowing) or an uneven one. If it is the latter, then it may be harder to say that even if full turnout would, for instance, widen a gap between two parties, a small increase would also widen it, and a small decrease narrow it.

What we see here are a few cases in which parties seem to suffer losses as turnout increases and others in which support is rather static, whatever the simulated turnout. Starting with the top panel, we see the Conservative Party in Britain win smaller shares of the vote as groups decreasing likelihood of turnout are added to the active electorate. The vote share for the Labour Party, by contrast remains static and

⁵ The current version of the multiple imputation software used works well with up to about 40 variables, including dummies for categorical data.

differences in support are minimal across the ten deciles. A similar pattern obtains for the two big German parties, suggesting that relative losses for the Christian Democrats increase in turnout, while the Social Democrats' support is less sensitive to the levels at which changes in participation take place. . Likewise, the rise in support for the centre-right parties at both the 2000 Spanish general election, slows steadily with the probability of voting in a similar fashion to that which we observe in the case of the British Conservatives. In the USA, sensitivity of support for the centre-right party (Republicans) to turnout is linear, while the Democrats' relative support increases most rapidly as those least likely to vote are included in the simulated electorate. The Spanish Socialists (PSOE) share the linear sensitivity to boosts in mobilisation that characterises the Labour vote share in the UK. Overall, in three of the four elections, the centre-right parties would appear to suffer losses in relative support with the additional mobilisation of low-turnout voters. For centre-left parties, there are no strong patterns of non-linear sensitivity to changes in turnout. However, the Democrats in the US 1996 election do show slightly over-proportional increases in support from very-low-propensity voters.

There are two important reservations to make about these results. The first is that none of the four predictive models proved very effective. The Pseudo R^2 ranges from as low as 0.12 (for Britain 1997) to no more than 0.26 (Spain 2000). This could be improved upon, but not necessarily with CSES data. The failure to model turnout effectively at individual level does not of course mean that these model are weak in aggregate terms. If we simulate the vote with the reported sample levels of turnout, we should get party choice distributions that are very close to those in the data before imputation of missing votes. While we do so for two countries, in the case of Spain and the US the distribution is midway between that before and that after imputation. The second point is that these predictions are election specific and reflect mobilisation patterns in a particular election. There is no reason to suggest that what we see in these illustrations will be typical of these countries and, to the extent this is a small sample, that it is typical of all other elections. Nevertheless, the indications here are that relationships between party support and turnout potential, at least where they exist, appear to be reasonably close to linear and are at any rate monotone. There is certainly nothing in these preliminary results to suggest that a 10 percent increase in

turnout will lead to results which are different in anything but degree from those with a 20 or 30 percent increase.

4. 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 nonvoters as missing data points on a variable measuring individual vote choice and then using a state-of-the-art multiple imputation algorithm to fill in the ‘missing votes’ constitutes an efficient way of estimating unobserved individual choices. Because we base our estimate of individual electoral participation on reported vote choice, we do not have to rely on reported turnout for our estimation of its effects, which is prone to mismeasurement (Anderson and Silver, 1986). Instead, our measure of abstention is the missingness 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. Our estimates of the raw biases for each party follow a roughly similar pattern across parties and countries as those identified by previous studies (e.g., Tóka, 2002). However, the changes in the parties’ fractions of the vote implied in our results are generally much higher. Moreover, while previous cross-country studies were restricted to demographic variables as the sole predictors of hypothetical vote choice, the imputation process used here makes use of a multitude of variables, thereby maximising the use of information available from the covariates of observed values. Furthermore, our estimates are generated from multiple imputation, followed by multiple re-sampling, which allows us to obtain measures of the uncertainty of our estimates. This generally leads to satisfactory standard errors. Based on these estimates, we find at the country level that the change in parties’ vote share before and after imputation is in fact a function of turnout, that is, of the scope for change, which increases with declining turnout. 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 that either left, right, or centre parties gained systematically 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. Our effects are much higher in magnitude but unrelated to left-right position although taking just major centre right and centre left parties the signs are at least as expected. 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 spring small parties into parliament. We found that full turnout would on average reduce the gap between the strongest and second-strongest party, often to non-negligible effect. In two cases, those of the Slovenian and US elections of 1996, full turnout would have led to a different party coming in first in the election. Finally, we generated evidence in favour of a general linearity of the change from actual to full turnout. Simulations for four country elections suggest that losses by three centre-right parties are either linear or mildly concave. The impact of additional votes from low-turnout groups on centre-left parties is largely linear, with the exception of a mildly convex pattern for the 1996 US Congressional 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 future extensions of this approach, we will 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 OLS regression of vote change on party size, incumbency, party ideology, and electoral system

	(1)	(2)	(3)	(4)	(5)	(6)
Proportion of the vote	-0.058 (0.001)	-0.053 (0.000)	-0.053 (0.000)	-0.058 (0.001)	-0.053 (0.000)	-0.066 (0.001)
Proport. of the vote * PR	-0.047 (0.016)	-0.051 (0.014)	-0.050 (0.015)	-0.047 (0.016)	-0.050 (0.015)	-0.068 (0.024)
Government party	-2.225 (0.035)	-2.245 (0.028)	-2.249 (0.026)	-2.224 (0.034)	-2.262 (0.025)	-2.246 (0.030)
Government party * PR	1.886 (0.093)	1.779 (0.103)	1.785 (0.097)	1.851 (0.091)	1.792 (0.096)	1.604 (0.160)
PR	-0.785 (0.071)	-0.704 (0.100)	-0.711 (0.097)	-0.787 (0.068)	-0.709 (0.097)	-0.263 (0.721)
Left-right	0.038 (0.916)	-0.131 (0.722)				
Extreme	-0.000 (0.926)	0.003 (0.776)				
Left of centre	0.059 (0.885)	0.059 (0.892)	0.118 (0.631)			
Main centre-left party	0.477 (0.403)			0.452 (0.415)		
Main centre right party	-0.505 (0.342)			-0.493 (0.354)		
Constant	1.822 (0.001)	1.558 (0.007)	1.623 (0.000)	1.764 (0.000)	1.675 (0.000)	2.149 (0.001)
Observations	287	287	288	288	288	127
R-squared	0.50	0.50	0.50	0.50	0.50	0.48
F test	10.55	12.60	15.51	13.55	17.96	12.79
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Note: Robust p values in parentheses.

Figure 1 Difference between observed and hypothetical party choice (Gallagher index of Disproportionality)

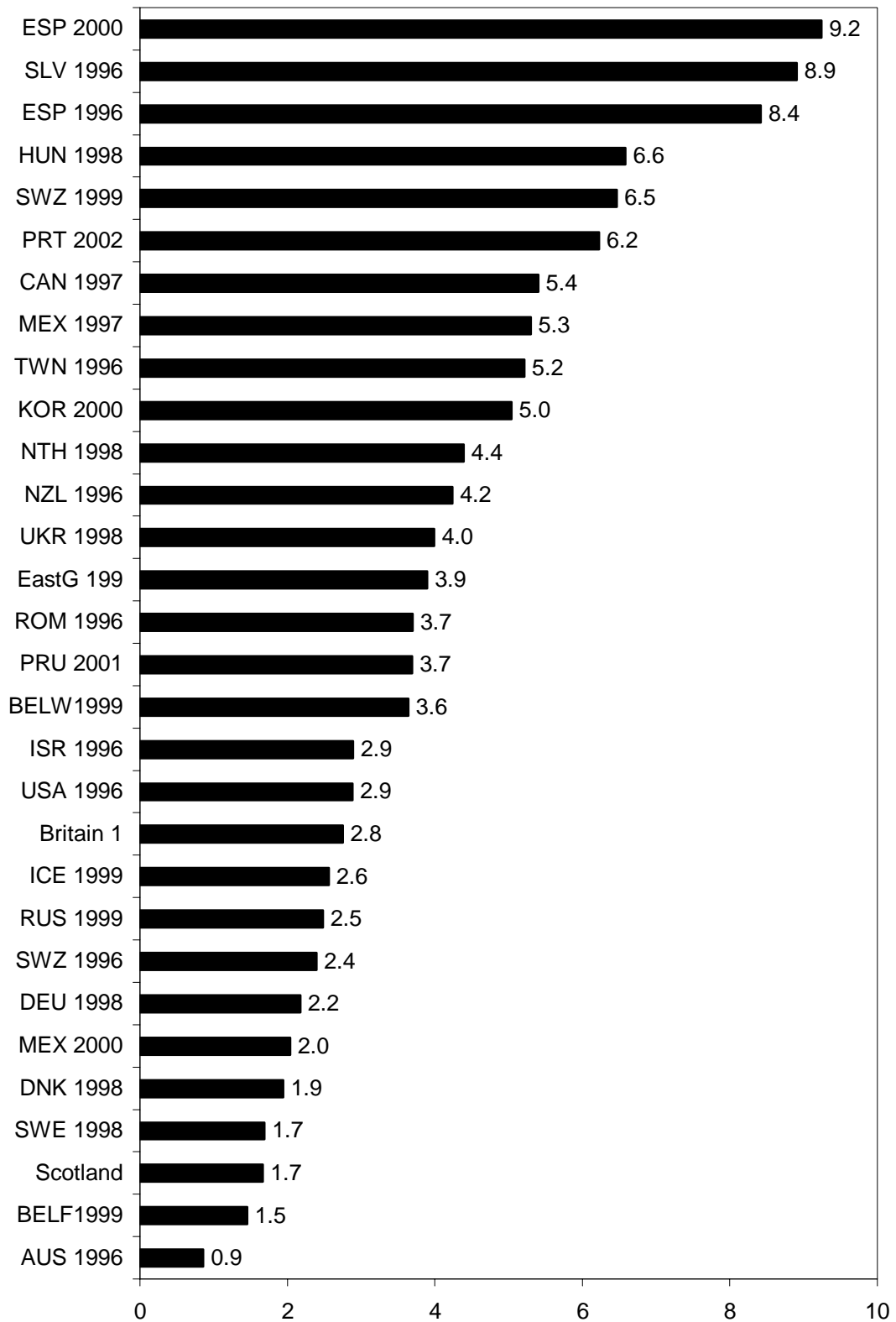
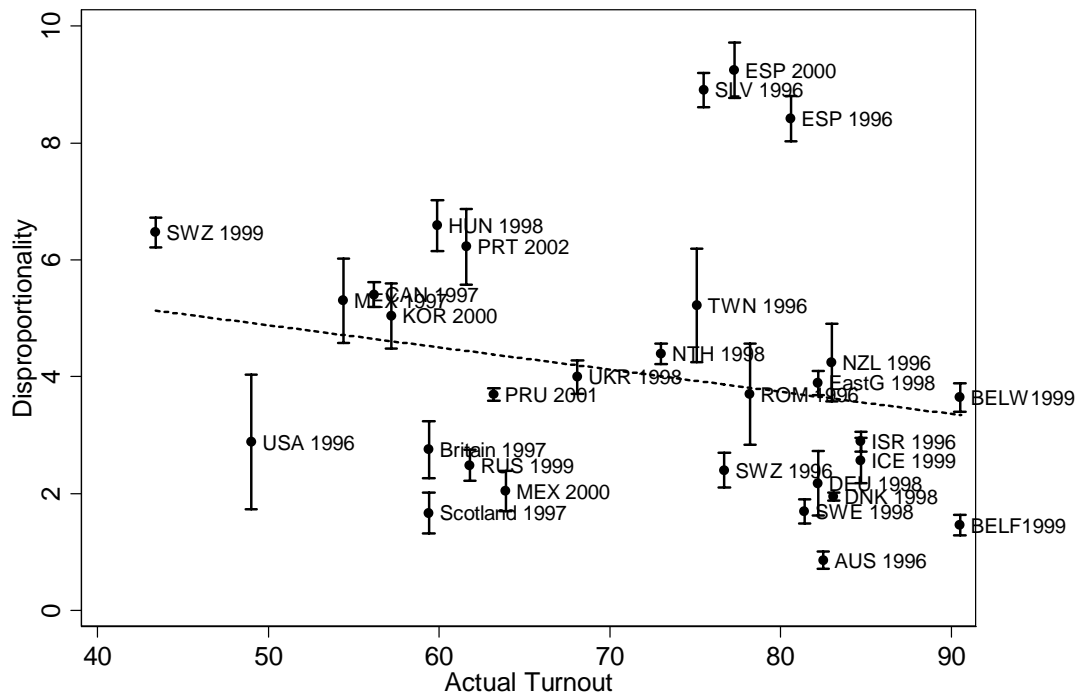


Figure 2 Country level change with full turnout



- Gallagher index
- Linear Prediction

Figure 3 Losses and gains if everyone voted: all parties

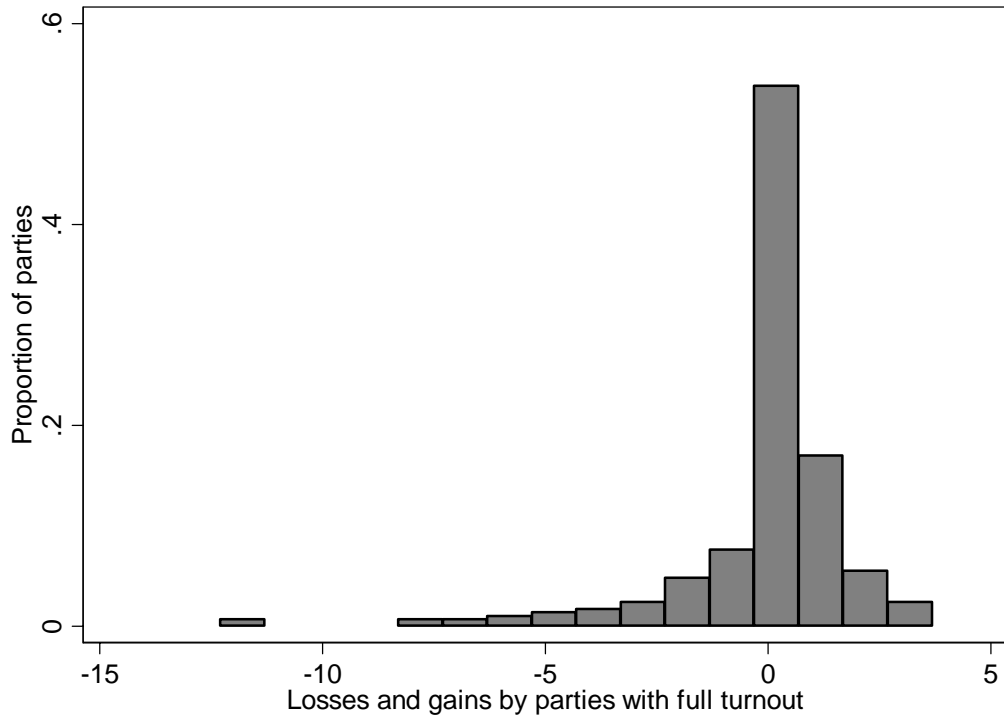
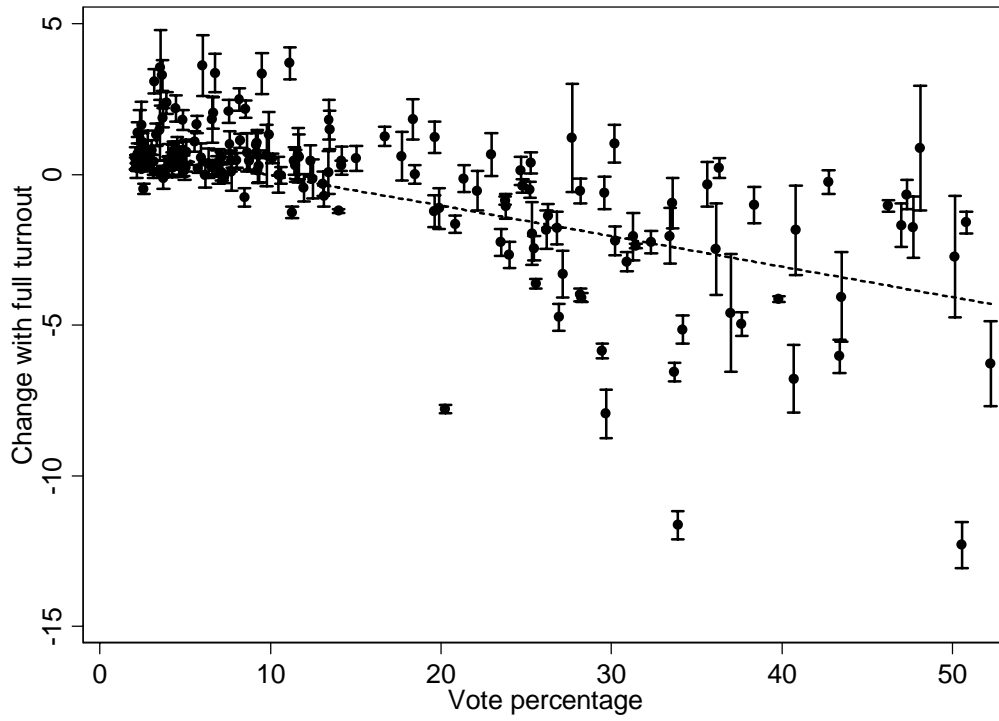
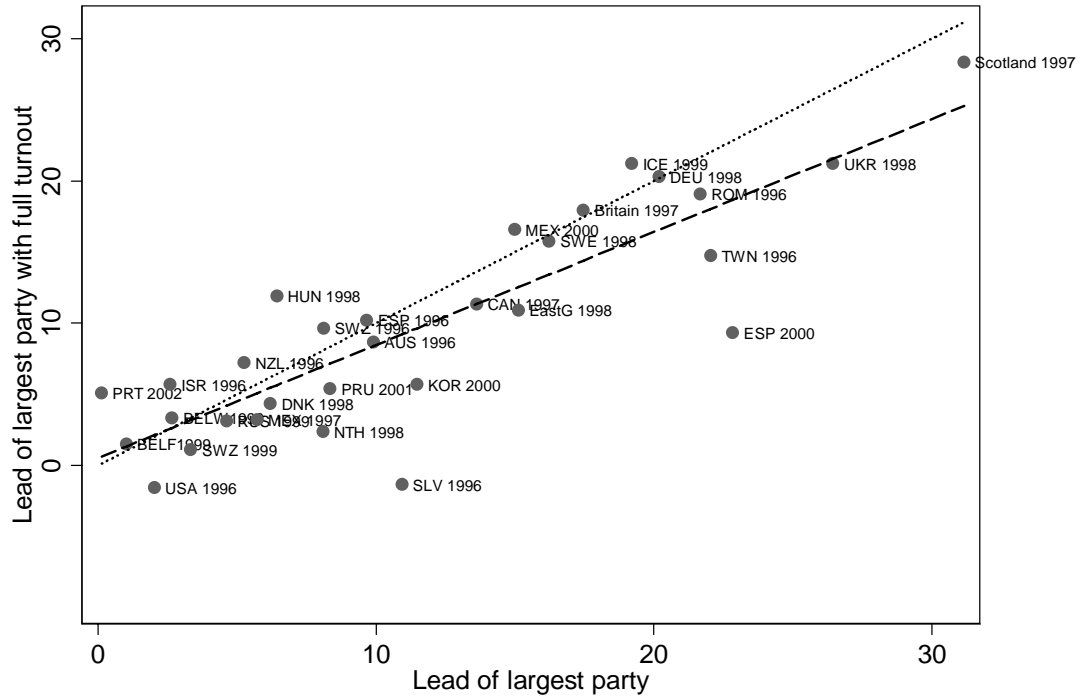


Figure 4 Party size and the change with full turnout



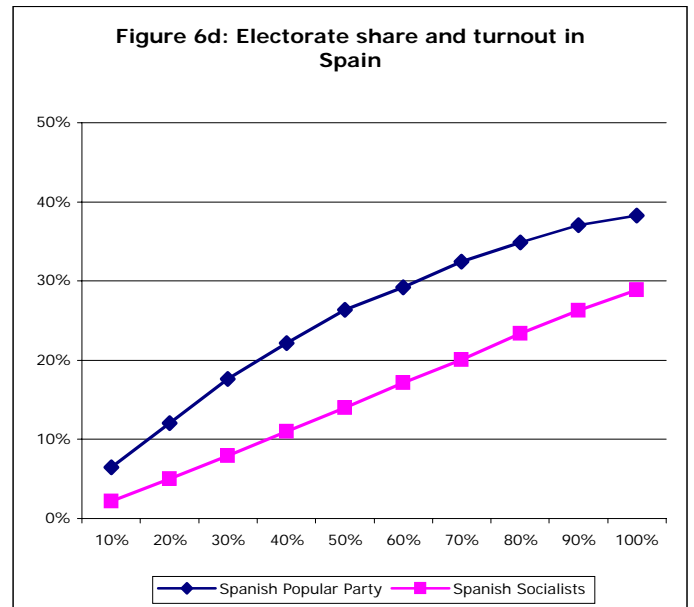
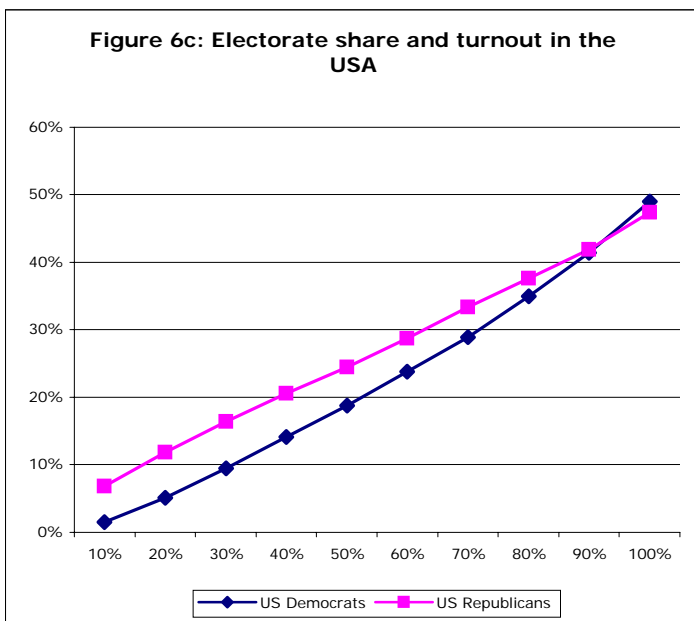
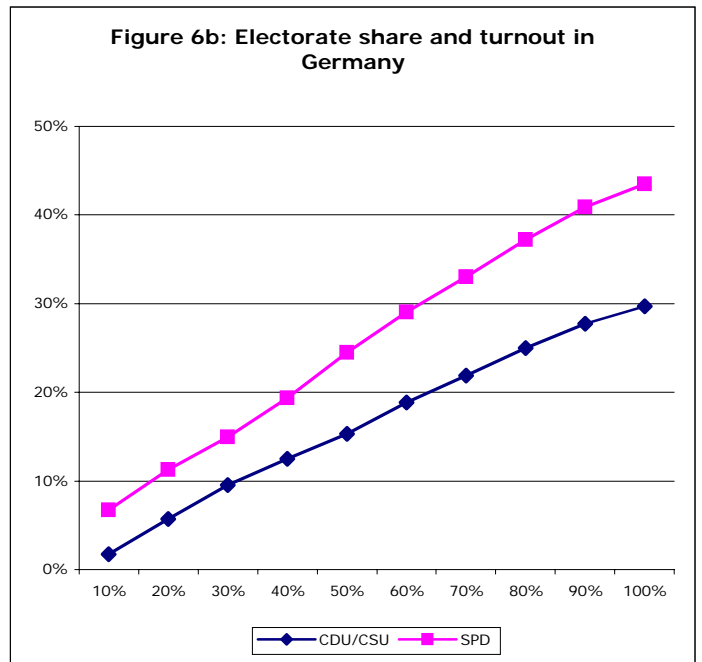
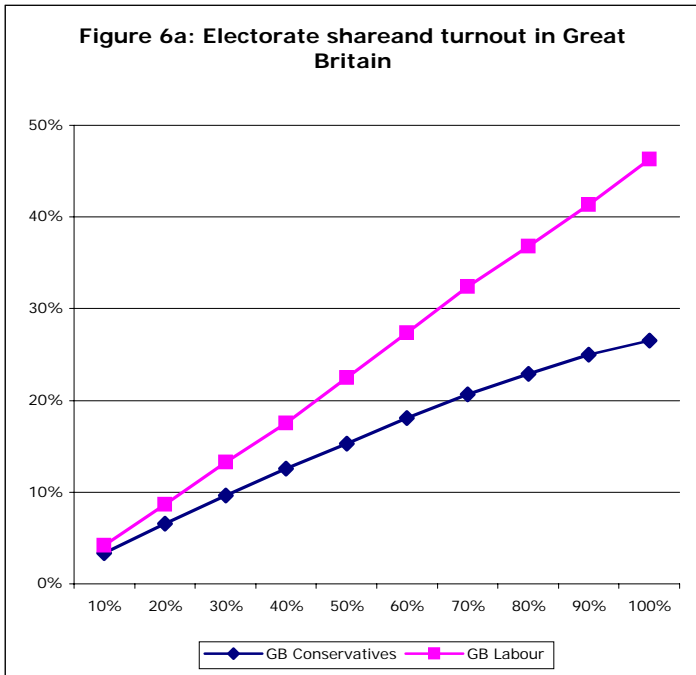
- Percentage vote change
- Curvilinear Prediction

Figure 5 Changing lead of largest party with complete turnout



- Lead of largest party with full turnout
- Expected lead if no change
- - - - Predicted gap

Figure 6 Simulated share of electorate for main left and right parties contingent on incremental turnout (selected countries)



Appendix A. Synopsis of variables included in multiple imputation of vote choice by election, and pseudo R² 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 (std.)	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 R ² from multinomial logit*
USA 1996	1,534		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)
BELF 1999	2,179		x			x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x								.51 (1603)	
BELW 1999	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						.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			.51 (1063)
DNK 1998	2,001					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	.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	.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					.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	.60 (914)
ISL 1999	1,631			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	.44 (715)
KOR 2000	1,100		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												.45 (699)
MEX 2000	1,766			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							.58 (900)
NZL 1996	4,080		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									.24 (628)
PRT 2002	1,303		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								.43 (517)
RUS 1999	1,842			x	x			x	x					x		x										n/a
SVN 1996	2,031		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										.68 (687)
TWN 1996	1,200			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	.65 (184)

*Cell entries are McFadden R^2 s 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.