Is Ticket Splitting Strategic?
Evidence from the 1998 Election in Germany *

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Abstract

Germany provides an especially interesting case for the study of strategic voting because they use a two-ballot system on Election Day. Voters are encouraged to split their votes using different strategies. The paper is an example of how much more can be learned if we reconsider and refine our theories. I provide a first step towards a theory of strategic voting and add it to the typical ticket splitting discussion. In order to test more refined hypotheses about ticket splitting and strategic voting I use cross-sectional data from the German National Post Election Study of 1998. Empirically, the results indicate that strategic voters are different from ordinary ticket splitters. Evidence from separate MNP estimation for East and West Germany shows that identifier of the FDP or the Greens are more likely strategic voters as opposed to non-strategic ticket splitters. Non-strategic ticket splitters in East Germany do not feel close to any political party. In West Germany non-strategic ticket splitters have conflicting party preferences. Thus, it proves useful to separate out strategic voters from ordinary ticket splitters in future work.

1 Introduction

Germany provides an interesting case for the study of strategic voting because of the two-ballot system, which allows voters to split their votes. Voters are generally called *strategic* if they do not cast a vote for their most preferred candidate on the first ballot or do not cast a vote for their most preferred party on the second ballot. Voting for first preferences is usually called a *sincere* vote. Hence, strategic voters may theoretically cast a straight ticket or split their ticket. However, not every ticket splitter is strategic because voters could deviate from the local candidate of their most preferred party if there is a more compelling one. This routine is generally called a personal vote (Cain et al. 1987).

Besides a personal vote, there are other conceivable reasons to split a ticket: There are certain types of strategic voting, e.g. *tactical* votes and *loan* votes (Gschwend 1999) which require voters to split their tickets. These particular groups of ticket splitter can have a substantial impact on the outcome of a Federal election. Thurner and Pappi (1998) find that for some voters the ticket splitting pattern mirrors their most preferred coalition. Furthermore, there are probably many more idiosyncratic factors at work that determine whether someone splits his or her ticket. The aim of this paper is *not* to disentangle all these different routines. My goal is to provide evidence that if we study strategic voting, at least in the German context, it is useful to separate out strategic voters from ordinary ticket splitters. Strategic voters are different.

2 Strategic considerations in the German electoral system

The two-ballot system provides ample opportunity for German voters to split their ticket in an election for the same level of governance. Voters have preferences about the major parties on the ballot. However, besides their party preferences voters might take the context

in which the election is held into consideration. By context I do not only mean election specific factors, like the popularity of certain issues, parties or candidates. In order to cast the most effective vote some Germans might also consider the tricky electoral rules. Voters anticipate the election outcome or the chances of victory for certain parties and candidates but their assessment is made *within* the rules of the electoral system. These rules constrain voter's preferences. Voters are generally assumed to be *strategic* if they end up not voting for their most preferred candidate or party because of the contextual constraints. What does strategic voting mean in the German context and how is it related to ticket splitting? For an easier understanding of the contextual constraints I provide a short summary of the most important electoral rules of the German electoral system.

Since 1953, the Germans have used a two-vote ballot on Election Day. The first vote is for a local candidate in the district. Plurality rule determines the winner of every district seat for the German parliament (*Bundestag*). More important for the election outcome is the second vote. It is a vote for a party list, which determines proportionally the total number of party seats in the *Bundestag*. Then, the party's parliamentary group consists of all district races winners together with the respective number of representatives from the party lists.

However, there are three deviations from a purely proportional system. First, in order to be represented in the *Bundestag*, a party has to gain nationally at least 5% of the total second votes. This threshold assures that very small parties cannot play a decisive role in the parliamentary system. Second, a party can also gain seats in parliament if at least three of its candidates win their constituency races. In this case the '5%-threshold' does not apply and the party gains seats according to their proportion of total second vote shares. Thus, nationally small parties which are regionally successful can also gain representation. The classic example for this rule is the 1994 election, where the PDS won four districts in East Germany and, therefore, gained 30 seats, proportionally to their second vote shares although the party gained only 4.4% of the second votes nationally. Finally, if a party gains more

2

district seats with the first vote than its proportional share as determined by the second vote, the party is allowed to keep these surplus mandates (*Überhangmandate*).

The first vote and, thus, the district races are not considered very important in Germany. Voters seldom know the name of their local party candidates. The names of these candidates are dominated by the party names, which are attached to them on the first ballot. Consequently, on the district level one can see a general pattern in the relationship between first and second vote shares. Usually, the winner of a district race is the candidate of the same party that gets the most second votes in that district.

Since there is a two-ballot system one can identify two types of strategic voting, a *tactical vote* and a *loan vote* (Gschwend 1999). The strategy for the first vote follows the Duvergerian logic of not 'wasting' a vote on a hopeless candidate (Duverger 1954). A supporter of a small party, say FDP, should use her first vote strategically for the local candidate of the big coalition partner, which is the CDU, in order to avoid wasting her vote on the FDP candidate who has no chance to win the district race. Thus, such a voter would cast a strategic first vote and a sincere second vote. The same reasoning applies to the SPD, as a big party, and the Greens, respectively. For the second vote there is another strategy. Since it is unlikely for a big party, like the CDU [1], to get an absolute majority of the seats in parliament the government formation process is usually determined by coalition politics. A CDU/FDP or a SPD/Green coalition, i.e. a coalition of a big and a small party, are the most viable coalition formations in German politics. A CDU supporter might cast a strategic second vote for the FDP in order to help the small party to overcome the 5%-threshold. Without the small coalition partner represented in parliament no big party has a

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[1] I consider the CDU/CSU party cartel between the Christian Democratic Party and the Christian Social Union as inseparable. For simplicity, I use only the CDU notation for this party cartel.

reasonable chance to get a majority of the second votes. Again, the same reasoning holds for SPD and the Greens, respectively. Note both strategies are observationally equivalent. First vote for the big coalition party and second vote for the respective small coalition partner. I coded, therefore, respondents who say they voted for CDU with their first vote and FDP with their second vote as strategic voters. The same coding was done for respondents who report casting their first vote for the SPD and their second vote for the Greens.

3 Strategic Voting and the Ticket Splitting Literature

While studying split ticket voting in the German context has taken off in the last few years (Gschwend 1999; Hilmer and Schleyer 1999; Schoen 1999a,b; Thurner and Pappi 1998, 1999), it is hardly a new topic in the American political science literature (Beck et al. 1992; Campbell and Miller 1957; DeVries and Tarrance 1972; Fiorina 1992; Walter R. Mebane 2000). The understanding of ticket splitting in the U.S. - a vote for a candidate of another party for a different level of governance - apparently differs from the meaning in the German electoral system. However, it is reasonable to look at the U.S. ticket splitting literature as well since I assume that the cognitive processes necessary to comprehend the contextual constraints and deviate from a straight-ticket baseline are comparable in both systems.

For the U.S. the literature developed two different strands. One of them focuses on the visibility and quality of candidates as well as incumbency effects. The other concentrates on the role of voter characteristics. There are conflicting results in the lieterature for possible suspects that facilitate ticket splitting like age, education and awareness. The common finding seems to be, though, that ticket splitter have weak partisan loyalties (Beck et al. 1992; Campbell and Miller 1957). The common wisdom in Germany points in a similar direction. Baker et al. (1981) provide evidence at the aggregate level that the decline of partisan strength parallels the rise of ticket splitting. On the individual level, at least based on bivariate analysis, Hilmer and Schleyer (1999) characterize ticket splitters in the 1998

Federal election as young, well-educated and highly interested in politics. They also find that self-employed voters are more likely to split their ticket than others are.

Scholarly work about German ticket splitting behavior has at least three major weaknesses. First, the studies are mostly descriptive and apparently data driven. Second, as in the U.S., ticket splitters are treated as one group. This might be of no great concern in this country but for the German multi-party system with complicated electoral rules it makes a big difference. The German literature (Hilmer and Schleyer 1999; Schoen 1999a) fails to differentiate ticket splitter and strategic voter. Ticket splitters are lumped together in one group and scholars focus solely on the attitudinal and sociodemographic differences between them and straight ticket voters. This is an oversimplification of the ticket splitting phenomenon. There might be quite different reasons why voters split their tickets. In this paper I start to disentangle the residual category and show that strategic voters are quite different ticket splitters. The third weakness of the literature is a methodological issue. Scholars use inappropriately linear probability models to study the distribution of a limited dependent variable (Schoen 1999a) or rely on bivariate analysis (Hilmer and Schleyer 1999). I will first estimate a probit model to test possible explanations about ticket splitting with an appropriate multivariate model. In order to test my underlying hypothesis that strategic voters are quite different from *non-strategic* ticket splitters I estimate a three-choice model by multinomial probit (MNP). This research design allows me to distinguish ordinary non-strategic ticket splitters from strategic voters while accounting factors causing straight ticket voting.

4   Data and Model Specification

Throughout my analysis I use the German National Post Election Study (GNES) 1998. It is provided by the Wissenschaftszentrum Berlin for Social Research (WZB). The GNES consists out of two representative samples, one for East and one for West Germany. Since

the political landscape in East and West Germany are quite different I estimate separate models for both parts. I exclude non- voters from the data since I am interested only in a certain type of voters - namely ticket splitters. The dependent variable, Y, is dichotomous, scoring 1 if voters split their ticket and 0 for respondents casting a straight ticket. I use the standard recall question for it.

Previous studies (Hilmer and Schleyer 1999) show, that in Germany younger voter are more prone to split their ticket than older voters are. Theoretically, though, age is an ambiguous concept since it is not possible with cross-sectional data to distinguish aging effects from period or cohort effects. Thus, age is more of a control variable in the model. However, I do not assume, as other studies have (Campbell and Miller 1957; Beck et al. 1992), a linear relationship between age and the likelihood to split a ticket. I expect a curvilinear relationship of age on the Y. Thus, I also include age^2 (X_2) an interaction of the age variable (X_1) with itself. The age variable is created from the question of when the respondent is born. Since this relationship is expected to be curvilinear the coefficient of X_1 is negative and the coefficient of X_2 to be positive. Voters might desert the local candidate of their most preferred party if there is a more compelling one. It is hard to test such a 'personal vote' (Cain et al. 1987) directly. However, it is reasonable to assume that such voters do at least remember correctly the name of this candidate. Hence, I include a dummy (X_3) scoring one if the respondent remembers correctly the name of the candidate he or she recalls to have voted for. This measure is definitely confounded with general awareness of respondents. I expect the coefficient of X_3 to be positive.

Moreover, I expect that voters with a clear preference for a party are less likely to split their ticket as opposed to respondents who are conflicted between liking two ore more parties equally. Thus, I include a dummy (X_4) scoring 1 if the respondent has a clear, i.e. only one, first party preference and expect the coefficient to be negative. I used party sympathy

6

scores to construct this measure [2]. Of course, I include a measure for the strength of party identification (X_5) one of the most robust findings in the ticket splitting literature. X_5 is a folded scale ranging from 0 (= no PID) to 3 (= very strong). I expect strong partisans to be innocent of committing the act of ticket splitting as opposed to non-partisans. Thus the coefficient should be negative. However, more specifically, the discussion about strategic voting shows that there is more constraint for small party supporters like the FDP or the Greens to split their ticket as opposed to SPD or CDU identifier. Therefore, I include two dummies scoring 1 for CDU and SPD partisans (X_6) and the other (X_7) scoring one for FDP and Green identifier and expect a positive coefficient for the big party dummy and a negative coefficient for the small party dummy. The omitted category consists of other partisans or of respondents who do not identify themselves with any party. To account for the impact of a changing political environment, the weakening of partisan attachments and especially the rise of floating voters I use a loyalty dummy (X_8), scoring 1 if respondents recall casting a vote for the same party in previous elections as compared to 1998. Thus, I expect the coefficients to be negative.

Since I assumed throughout this paper that casting a straight ticket should be the baseline behavior I expect people with higher education, higher level of political knowledge and voters who are interested in politics to be more likely to split their ticket. These people, presumably, do not solely rely on party labels as a cognitive shortcut to make their vote decision and are more likely to vote strategically. I use an education scale (X_9) ranging from 1 (= no high school degree) to 9 (= university degree). It is well known, that in the U.S.,

[2]The data has sympathy scores, a 11-point scale, for eight parties. Since the survey asked for sympathy scores for both, CDU and CSU, I constructed a CDU/CSU sympathy score such that only CSU scores of respondents from Bavaria and CDU scores for everyone else have been used.

a factual knowledge scale taps the effect of voter sophistication much better (Zaller 1992) than education. There are only three factual knowledge questions in the survey but they do not scale together (highest inter-item correlation is less than .25). Thus I constructed a knowledge scale (X_{10}) counting the times where respondents placed parties correctly on the left right dimension (e.g. the Greens to the left of the CDU). After rescaling it ranges from 0 to 1 and has an alpha coefficient of .69. As a last voter sophistication measure I use single item measure of respondent's interest in politics (X_{11}) ranging from 0 (= not at all) to 3 (= very much). Thus I expect the coefficients to be positive since higher sophistication facilitates a deeper understanding of the electoral rules.

According to more refined social class conceptualization (Müller 1999) the role and character of the working relationship for self-employed citizens can be described by the exercise of 'specialized knowledge' and higher levels of autonomy. Presumably, this has an impact on political preferences (especially for FDP- partisanship) and on the awareness of the voting rules to support these preferences as well. Thus, I include a dummy scoring 1 for respondents who are self-employed (X_{12}) to account for the fact that members of this particular social class are more likely to split their tickets as a means to support their preferences. Hence, I expect a positive coefficient for the self-employed dummy.

Finally I include three often used control variables in the context of German voting behavior studies which underline the existing cleavage of the German society. I include an urbanization dummy (X_{13}) scoring one if the respondents report living in a big city or suburbs of a big city and a trade union dummy (X_{14}) scoring 1 if at least one member of the respondent's household is a union member. Finally, I account for frequency of church attendance. This measure ranges from 1 (= never) to 4 (= more than once a week). I have no theoretical expectations for them but I do not confound other measures with the impact of these cleavages.

5 Hypotheses Tests and Results

To get on overview about the covariates and their correlations among them I present descriptive statistics and the correlation matrix of the covariates and the depend variable in table 1 and 2.

[Table 1 and 2 about here]

The functional form of the probit model is non-additive and non- linear. Thus, in order to gauge the substantive impact of a coefficient one has to compute predicted values or 'first differences'. This is left for the next step on this project. Nevertheless, the significance of the coefficients can be assessed, keeping in mind that they depend on the other covariates in the models. The model is as follows:

$$P(Y = 1) \; = \; \Phi(\sum \beta_k X_k)$$

The underlying assumption for probit is that the error term is distributed standard normal. Φ is the standard cumulative normal distribution. To facilitate a comparison of West and East Germany I present the probit estimates together in table 3.

[Table 3 about here]

The overall performance of the models for East and West Germany can be assessed by comparing various goodness-of-fit measures in the first and the third column. Both models perform reasonably well predicting more than two out of three cases correct whereby the model for the West (69% correctly predicted) has a slide edge over the East Germany model (68% correctly predicted).

Generally, the hypotheses I put forward are supported. Interestingly, however, neither the factual knowledge nor interest in politics measure seems to perform very well in West

9

or East Germany. Also, the standard cleavage measures have no significant influence on the probability to split a ticket, although urbanization comes close in East Germany. This might be a regional specialty that voters seem to support the PDS, the former communists, in urban regions in the East with at least one vote. Note the PDS won four out of five district races in East Berlin.

Comparing the estimates of the full models in the first and the third column, respectively, we see interesting differences. In the West ticket splitters are clearly younger than straight ticket voters are and the relationship is curvilinear as expected. On cannot find the same relationship in the East. As I already stated age is an ambiguous concept. It might well be that the effect of age on ticket splitting could be attributed to a cohort effect. In East Germany they are collectively born into the political system of the West in 1990 after the fall of the Berlin Wall. In West Germany, however, older voters had 40 years more to get exercised in voting under the existing voting rules and they - as a cohort - cast more frequently straight tickets as opposed to people who were politically socialized in the last 10 to 20 years. However, this hypothesis needs clearly closer examination.

The preference dummy and various partisan measures are significant and the coefficients are in the expected directions. A partly unexpected result is obtained as far as the coefficients of the self- employed dummy are concerned. While in West Germany self employed people are, as expected, more likely to split their ticket because their 'specialized knowledge' which characterizes their working environment makes them more likely to make use of the voting rules as a means to support their preferences more effective. In the East, though, there is no significant effect of this covariate. This might be because self-employed voters have not got enough time to make use of their specialized knowledge relative to other voters.

I dropped the cleavage control variable and two of the three sophistication measures keeping education because it seems to tap the underlying concept of sophistication best. Then, I restimated the models in order to reassure myself that this has no substantive impact.

10

The estimates should stay nearly the same. Since I am more interested in disentangling non-strategic ticket splitting from strategic voting I use the more parsimonious specification later to estimate a three-choice MNP model. Since estimating a MNP is very difficult, this is certainly an appropriate research strategy.

As it can be seen in column two and four of table 3 the estimates stay nearly the same. Comparing the $p-$values between the full and the restricted models within West and East Germany provide the same story, although education in the restricted East model is only significant at the .1 level. The goodness-of-fit provide further evidence that the exclusion of these variables has no effect on the overall performance of the restricted models compared to the full models.

In order to disentangle non-strategic ticket splitters from strategic voters I use a different dependent variable. My new dependent variable has 3 different outcomes. It scores 1 for a respondent recalling casting a straight ticket, 2 for strategic ticket splitters and 3 for a non-strategic ticket splitter. Particularly, a strategic ticket splitter is defined as above. These are respondents who recall voting for either the local CDU candidate with their first vote and for the FDP with their second vote or the local SPD candidate and the Greens. The observed distribution of the new dependent variable can be identified as the row marginals of the contingency tables in table 4.

[Table 4 about here]

At first I estimated a much simpler multinomial logit (MNL) model. Unfortunately, employing a Hausman-Test provided by STATA6.0 I was not able to reassure myself that the implied assumption of 'independence of irrelevant alternatives' (IIA) holds with the data I got.[3] Thus, I choose MNP to model my new dependent variable since this model does not

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[3]For a detailed discussion of the IIA assumption and a slightly different implementation of MNP see Alvarez et al. (2000).

11

assume IIA. The implementation is similar to Lacy and Burden (1999). I used a mainframe version of LIMDEP to estimate the models for East and West Germany. Thus, the i's respondents utility for either straight ticket, strategic vote or split ticket is a function of X, the covariates I used in the restricted models above. Thus, for respondent $i \in \{1, ..., N\}$ and choice alternative of the new dependent variable $j \in \{1, 2, 3\}$ one gets:

$$U_{ij} = \beta_j X_i + \epsilon_{ij}$$

A voter is predicted to choose one of the three choice alternatives (straight, strategic or split) which has the highest utility, i.e. the highest value for $U_{\cot j}$. By stacking all individual's utilities for the three choices yields the model:

$$U_i = \beta X_i + \epsilon_i, \quad \epsilon_i = \begin{pmatrix} \epsilon_{i1} \\ \epsilon_{i2} \\ \epsilon_{i3} \end{pmatrix} \sim N_3(0, \Sigma),$$

IID is assumed across observations. Correlations across choices can theoretically be estimated, although most of them have to be fixed in order to identify the model. I estimate one error standard deviation ($\hat{\sigma}_{straight}$) for the first choice and one error correlation ($\hat{\rho}_{straight,strategic}$) for choice one or two. If the estimates for $\hat{\sigma}$ and $\hat{\rho}$ are statistically different from 1 and 0, respectively, IIA is rejected. Moreover, as in the case for MNL, one choice alternative has to be set to zero as a baseline. I use the third category of non-strategic ticket splitters as my baseline. Then, I estimate the difference of choices 1 vs. 3 and choices 2 vs. 1. Identification is by far the major drawback of estimating MNP's. The model seems very flexible at first, but in order to avoid 'fragile identification' (Keane 1992) some coefficients of β have to be fixed also. It is a crucial decision for every research design what coefficients get fixed. Theory should closely guide these decisions.

I specified the same models for West and East Germany. For the age variables I have no specific expectations. However, the coefficient should not be significant in the second comparison between strategic and non-strategic ticket splitters. Refining my previous expectations I anticipate additionally that respondents who paid so much attention to the

local race that he or she knows at least the name of the local candidate are less likely to cast a non-strategic vote than everything else is. Hereby I assume also, that the frequency of possible personal votes among the non-strategic voters is not high enough that it matters systematically. Thus, the coefficient of the personal dummy should positive for both comparisons, straight ticket voters vs. ticket splitters and strategic voter vs. ticket splitters, in the models for West and East Germany alike. Similarly I also expect that strong partisans either cast a straight ticket or vote strategically in order act efficiently given their preferences and contextual constraints. Thus, the coefficient for both comparisons should be positive. Further, as it can be seen from the probit result in table 3, voters with a clear party preferences are more likely to cast a straight ticket than a to split their ticket. However, to refine my expectation, strategic voters should also have a clear party preference in order to facilitate the strategic decision calculus.

While I have no further refinement concerning my hypothesis for big party identifier I assume that there is no influence for small party identifier for straight ticket voters vs. ticket splitters but I expect these identifiers to be more likely to vote strategically. It is in the core of my theory about strategic voting that these people are typical suspects of strategic voters. Another crucial decision was to fix the coefficient of the loyalty dummy for the second comparison at 0. I assume that a tendency of voting for the same party should not distinguish between strategic splitters and non-strategic splitter but I expect as in the probit case that ticket splitters are less loyal, hence the coefficient should be positive for the assessment of straight ticket voters versus ticket splitters. Finally, while higher education and being self-employed have been factors predicting whether a voter split his or her ticket, I refine now my previous expectation and argue that these factors should specifically facilitate strategic voting. Thus, I expect the coefficients to be positive for comparison of strategic voters to the baseline of ticket splitters. The MNP estimates are presented separately for West and East Germany in table 5.

As it can be seen, the model performs better for West Germany than for East Germany. The percentage of correctly classified voters (PCC) is slightly higher for the West German model. In general, the estimates provide support for the refined and more specified hypotheses. If we focus for a moment only on the second comparison it gets obvious how much more information is extracted from the lump sum of all ticket splitters by refining and including more theory to the typical ticket splitting discussion. As a common result for East and West Germany, identifier of the FDP or the Greens are more likely strategic voters as opposed to non-strategic ticket splitters. Moreover, voters who know at least the name of the local candidate they voted for, such that they sufficiently comprehend the election rules and pay attention to the local race as well, are either straight ticket voters or strategic voters but are less likely to split their ticket in a non-strategic fashion.

It is in the nature of the beast that the extremity of partisan attachments takes on a specific role in East Germany. Until the election in 1998 the former citizens of the GDR had only twice the possibility to vote in Federal elections and only eight years of political live to develop a party identification. Strong partisans in the East more likely to be either a straight ticket voter or a strategic voter but less likely to be a non-strategic ticket splitter. Strong feelings towards one party facilitates strategic voting in East Germany, not so in West Germany, instead of non-strategic ticket splitting. It also favors straight over non-strategic ticket splitting.

In West Germany, most people have developed a party identification and some even feel very close to the party. But they might have conflicting attitudes or unclear preferences towards the political parties. Having a clear first preference is decisive for distinguishing between straight ticket or strategic voting on the one hand and non- strategic ticket splitting on the other hand. Thus, it takes on for West Germany what is the role of strength of partisanship in East Germany. Furthermore, high education and being self-employed facilitates

14

strategic voting as opposed to ticket splitting only in West Germany.

6   Conclusion

The paper is an example of how much more can be learned if we reconsider and refine our theories. I included a theory about strategic voting into the typical ticket splitting discussion. From that I derived more specific hypotheses. By using appropriate methods to test these hypotheses I was able to extract more information from the lump sum of all ticket splitters as before. The paper makes more transparent the relationship between strategic voting and non-strategic voting behavior. It also makes more transparent the process that underlies the decision to cast a strategic vote. Strategic voting in Germany comes in two types. Voter do employ two different strategies which are observationally equivalent (Gschwend 1999).

A common result for East and West Germany in this paper is that identifier of the FDP or the Greens are more likely strategic voters as opposed to non-strategic ticket splitters. There are also differences between the two parts of Germany. Non-strategic ticket splitters in East Germany do not feel close to any political party. In West Germany non-strategic ticket splitters have conflicting party preferences.

Improvements can be made along several directions. First, I could include better measures for political awareness or sophistication. Also interesting would be to examine the impact of coalition preferences, personal votes and the perceived closeness of the small parties to the 5% threshold. This would require searching more for appropriate questions and impute them into this data set. Second, it would be useful to combine aggregate data and individual-level data in order to account more realistically for social context, the strength of local part platforms and the like. Third, using this research design, clearly, predicted values have to be computed in order to assess the impact of several covariates or the relevance of the restricted coefficients on substantive conclusions. As it can be seen in table 5, the estimates of the error covariances do not reject IIA. Thus, from this result it follows that I may use MNL

15

instead, which is easier to estimate and I could easy get simulate predicted probabilities and uncertainty measures for them.

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Table 1. Descriptive Statistics of the Model Variables

Variables	West Germany					East Germany				
	N	Mean	Std.Dev.	Min	Max	N	Mean	Std.Dev.	Min	Max
Ticket Splitting	978	0.36	0.48	0	1	1041	0.43	0.49	0	1
Age	971	44.29	16.08	18	97	1039	44.94	15.84	18	87
Age^2	971	2219.88	1588.04	324	9409	1039	2270.20	1524.56	324	7569
Personal	978	0.20	0.40	0	1	1041	0.19	0.39	0	1
Preference	978	0.81	0.39	0	1	1041	0.77	0.42	0	1
Strength of PID	978	1.14	1.00	0	3	1041	0.97	1.01	0	3
PID big parties	978	0.31	0.46	0	1	1041	0.20	0.40	0	1
PID small parties	978	0.29	1.28	0	1	1041	0.14	0.92	0	1
Loyalty	978	0.42	0.49	0	1	1041	0.47	0.50	0	1
Education	966	3.80	2.18	1	9	1027	4.30	2.21	1	9
Knowledge	978	0.67	0.33	0	1	1041	0.73	0.33	0	1
Interest in Politics	976	1.53	0.74	0	3	1041	1.51	0.77	0	3
Self-employed	978	0.06	0.25	0	1	1041	0.07	0.26	0	1
Urbanization	978	0.42	0.49	0	1	1041	0.35	0.48	0	1
Trade Union	978	0.21	0.41	0	1	1041	0.21	0.41	0	1
Church attendance	958	2.44	1.13	1	4	1031	1.67	1.00	1	4

Table 2. Correlation Matrix for East and West German Voters

Correlation Matrix	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}
Y Ticket Splitting	1.00														
X_1 Age	-0.11	1.00													
X_2 Age^2	-0.09	0.98	1.00				West Germany								
X_3 Personal	-0.22	0.03	0.03	1.00											
X_4 Preference	-0.20	0.02	0.02	0.05	1.00										
X_5 Strength of PID	-0.31	0.06	0.05	0.21	0.21	1.00									
X_6 PID big parties	-0.31	0.17	0.15	0.19	0.15	0.59	1.00								
X_7 PID small parties	0.09	-0.08	-0.08	-0.01	0.07	0.19	-0.15	1.00							
X_8 Loyalty	-0.19	0.02	0.04	0.05	0.04	0.17	0.16	-0.03	1.00						
X_9 Education	0.09	-0.20	-0.19	0.06	0.01	0.11	0.07	0.20	-0.16	1.00					
X_{10} Knowledge	-0.05	-0.10	-0.10	0.09	0.01	0.23	0.17	0.15	-0.05	0.38	1.00				
X_{11} Interest in Politics	-0.09	0.08	0.08	0.16	0.09	0.34	0.33	0.11	-0.04	0.27	0.34	1.00			
X_{12} Self-employed	0.05	0.05	0.04	0.11	-0.02	0.05	0.04	0.04	-0.01	0.06	0.06	0.09	1.00		
X_{13} Urbanization	-0.04	0.02	0.03	-0.02	-0.02	0.04	0.03	0.06	0.00	0.13	0.09	0.05	-0.05	1.00	
X_{14} Trade Union	-0.10	-0.04	-0.06	0.06	0.08	0.10	0.04	0.06	0.07	-0.08	-0.04	0.04	-0.10	0.04	1.00
X_{15} Church attendance	-0.06	0.13	0.14	0.01	-0.01	0.00	0.09	-0.10	0.04	-0.06	-0.04	0.03	-0.07	-0.13	-0.04

Correlation Matrix	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}
Y Ticket Splitting	1.00														
X_1 Age	-0.10	1.00													
X_2 Age^2	-0.09	0.98	1.00				East Germany								
X_3 Personal	-0.15	0.00	-0.01	1.00											
X_4 Preference	-0.20	0.06	0.05	0.04	1.00										
X_5 Strength of PID	-0.27	0.06	0.05	0.14	0.23	1.00									
X_6 PID big parties	-0.23	0.18	0.18	0.11	0.15	0.49	1.00								
X_7 PID small parties	0.03	-0.05	-0.05	0.01	0.01	0.16	-0.08	1.00							
X_8 Loyalty	-0.21	0.02	0.03	0.06	0.09	0.24	0.18	0.04	1.00						
X_9 Education	0.01	-0.09	-0.11	0.13	-0.01	0.19	0.02	0.18	0.02	1.00					
X_{10} Knowledge	-0.08	-0.16	-0.17	0.14	0.09	0.23	0.04	0.11	0.04	0.30	1.00				
X_{11} Interest in Politics	-0.16	0.15	0.13	0.20	0.07	0.38	0.24	0.08	0.12	0.33	0.32	1.00			
X_{12} Self-employed	-0.03	0.01	0.00	0.01	0.01	0.01	0.04	0.03	0.02	0.05	0.03	0.06	1.00		
X_{13} Urbanization	0.04	-0.05	-0.05	0.03	-0.01	0.01	0.02	0.04	0.06	0.07	0.05	0.06	0.07	1.00	
X_{14} Trade Union	-0.08	-0.05	-0.08	0.10	0.01	0.07	0.05	0.00	0.01	0.03	0.01	0.11	-0.08	-0.02	1.00
X_{15} Church attendance	-0.05	0.10	0.10	0.09	0.10	0.09	0.17	-0.04	0.05	0.02	0.01	0.04	0.05	-0.03	-0.10

Table 3 . Probit Estimates of Ticket Splitting for East and West German Voters

Independent Variables	Dependent Variable: Ticket Splitting											
	West Germany						East Germany					
	Coeff.	Std.Err.	p	Coeff.	Std.Err.	p	Coeff.	Std.Err.	p	Coeff.	Std.Err.	p
Age	-0.053	0.016	0.001	-0.059	0.016	0.000	-0.009	0.015	0.540	-0.014	0.015	0.344
Age^2	0.001	0.000	0.003	0.001	0.000	0.001	0.000	0.000	0.798	0.000	0.000	0.532
Personal	-0.698	0.136	0.000	-0.710	0.134	0.000	-0.395	0.115	0.001	-0.437	0.113	0.000
Preference	-0.514	0.117	0.000	-0.501	0.115	0.000	-0.416	0.100	0.000	-0.418	0.099	0.000
Strength of PID	-0.280	0.067	0.000	-0.282	0.065	0.000	-0.197	0.053	0.000	-0.231	0.050	0.000
PID big parties	-0.423	0.148	0.004	-0.414	0.143	0.004	-0.332	0.133	0.012	-0.336	0.129	0.009
PID small parties	0.110	0.036	0.002	0.106	0.036	0.003	0.067	0.048	0.163	0.069	0.047	0.143
Loyalty	-0.403	0.097	0.000	-0.442	0.096	0.000	-0.408	0.086	0.000	-0.386	0.085	0.000
Education	0.059	0.023	0.012	0.050	0.022	0.020	0.043	0.021	0.039	0.032	0.019	0.098
Knowledge	-0.173	0.159	0.278	----			-0.170	0.142	0.233	----		
Interest in Politics	0.046	0.070	0.513	----			-0.070	0.066	0.289	----		
Self-employed	0.422	0.183	0.021	0.474	0.180	0.008	-0.151	0.157	0.337	-0.119	0.156	0.444
Urbanization	-0.137	0.095	0.149	----			0.145	0.088	0.100	----		
Trade Union	-0.150	0.118	0.202	----			-0.170	0.107	0.112	----		
Church attendance	-0.045	0.042	0.287	----			0.010	0.043	0.819	----		
Constant	1.923	0.435	0.000	1.841	0.398	0.000	0.950	0.356	0.008	0.917	0.342	0.007
N	950			950			1018			1026		
PCP	68.902			68.310			67.530			67.706		
ePCP	61.857			61.790			59.645			59.623		
PMC	62.043			61.419			62.043			61.419		
PRE	18.072			17.862			14.458			16.297		

Note. *p* values are for two-tailed tests.

Table 4 . Cross tabulation of actual vs. predicted choices

West Germany	1 straight	2 strategic	3 split	*Actual* Total
1 straight	441	39	131	612
2 strategic	40	15	20	75
3 split	130	21	112	263
Predicted Total	611	75	264	N=950

East Germany	1 straight	2 strategic	3 split	*Actual* Total
1 straight	373	24	188	585
2 strategic	24	5	13	42
3 split	188	14	189	391
Predicted Total	586	43	390	N=1018

Note. Row indicator is actual, column is predicted. Column totals may be subject to rounding error.

Table 5 . MNP Estimates for Three-Choice Ticket Splitting Model

	WEST GERMANY					
	Straight Ticket/Ticket Splitting			Strategic Voting/Ticket Splitting		
Independent Variables	Coeff.	Std.Err.	*p*	Coeff.	Std.Err.	*p*
Age	0.577	0.326	0.076	-0.370	0.379	0.329
Age^2	-0.053	0.031	0.089	0.038	0.038	0.308
Personal	1.037	0.339	0.002	0.698	0.277	0.012
Preference	0.641	0.240	0.007	0.180	0.052	0.001
Strength of PID	0.371	0.117	0.002	0.302	0.258	0.241
PID big parties	0.529	0.267	0.048	0.065	0.283	0.819
PID small parties	0	fixed		1.171	0.406	0.004
Loyalty	0.482	0.212	0.023	0	fixed	
Education	-0.013	0.038	0.728	0.180	0.052	0.001
Self-employed	-0.318	0.330	0.335	0.712	0.341	0.037
Constant	-2.037	0.940	0.030	-1.815	0.824	0.028
N	950					
PCC	59.789					
σ (straight)	0.652	0.679	0.337			
ρ(straight,strategic)	-0.370	0.379	0.329			

Note. *p* values are for two-tailed tests.

	EAST GERMANY					
	Straight Ticket/Ticket Splitting			Strategic Voting/Ticket Splitting		
Independent Variables	Coeff.	Std.Err.	*p*	Coeff.	Std.Err.	*p*
Age	0.004	0.016	0.810	-0.049	0.034	0.146
Age^2	0.000	0.000	0.944	0.001	0.000	0.130
Personal	0.603	0.199	0.003	0.886	0.262	0.001
Preference	0.447	0.163	0.006	0.396	0.264	0.133
Strength of PID	0.269	0.085	0.002	0.297	0.124	0.016
PID big parties	0.341	0.176	0.053	0.229	0.254	0.367
PID small parties	0	fixed		0.222	0.082	0.007
Loyalty	0.355	0.152	0.020	0	fixed	
Education	-0.021	0.024	0.373	0.050	0.054	0.348
Self-employed	0.118	0.184	0.523	0.059	0.361	0.870
Constant	-0.728	0.446	0.102	-1.489	0.715	0.037
N	1018					
PCC	55.697					
σ (straight)	0.197	1.457	0.892			
ρ(straight,strategic)	-0.049	0.034	0.146			

Note. *p* values are for two-tailed tests.