

**On Horizontal Split Ticket Voting
in Parliamentary Systems**

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Introduction

Why does Sabine Mustermann split her ticket in a German Bundestag election? And why does John Q. Public, a typical voter in Wales, split his ticket at the parliamentary election? Split-ticket voting, i.e. voting for a party candidate but casting a party vote for a different party at the same time, can be observed across various electoral systems. Split-ticket voting exists in elections at the same level of government as in mixed member proportional systems where voters have a candidate vote and a list vote (horizontal split ticket voting). It also exists for elections for different levels of government (vertical split ticket voting). In this paper we focus at the individual and contextual determinants of horizontal split ticket voting in mixed member proportional systems.

Despite the very general notion throughout the literature in political science that horizontal split-ticket voting is a relevant phenomenon, we do not know much about it from a comparative point of view. The large body of evidence we have about split-ticket behavior is mainly albeit not exclusively based on (quantitative) case studies. These case studies vary a great deal with respect to the hypothesized underlying causal processes and with respect to the data used to study split ticket voting. These idiosyncrasies prohibit a simple meta-analysis of published case study results.

The goal of our study, thus, has to be less ambitious. We argue that split-ticket voting behavior - as any other type of behavior - is best understood as a combination of situational incentives and individual dispositions. Two different individuals facing the same situational incentives as well as similar individuals facing different situational incentives are generally predicted to behave differently. Can the same causal mechanisms be used to explain horizontal split ticket voting comparatively? We present a thin causal model predicting whether someone splits his or her ticket and replicate it for various elections (thus averaging over the election specific uncertainty in the coefficients) in mixed electoral systems of

Germany, New Zealand, Scotland and Wales. Thus we hold general institutional effects constant through focusing on electoral institutions that allow voters to split their ticket horizontally, i.e. between a candidate and a list vote within the same level of governance.

The determinants of split ticket voting

Why do voters split their ticket? In the various studies on horizontal split ticket voting, various explanations have been considered (Alvarez and Schousen 1993; Bawn 1999; Beck et al. 1992; Cox 1997; Cox 1996; Gschwend 2003; Gschwend, Johnston, and Pattie 2003; Jesse 1988; Johnston and Pattie 2002; Johnston and Pattie 1999; Karp et al. 2002; McAllister and White 2000; Moser and Scheiner 2005; Pappi and Thurner 2002; Schoen 1999). Those studies vary a great deal. The building blocks of a comprehensive explanation of why voters split their ticket can be picked out of those studies. Those suggested explanations do partly overlap across studies but are far from being repeatedly tested across elections and electoral systems. Moreover, those studies are sometimes based on the analysis of aggregate (district-level) data while some others are based on survey data. We propose that the individual level motives for split ticket voting and the contextual factors affecting these individual level motives can be summarized by four headings.

The first motive has to do with a *sincere expression of the voters' preferences*. We will call this type of vote-choice behavior 'sincere split ticket voting'. If a voter supports a political party but sincerely prefers the constituency candidate of another party (either for personal or for policy reasons), she might end up splitting her ballot. The extent to which sincere split ticket voting exists is a matter of debate. Jesse, for example, thinks this factor will hardly play a role: 'At present, the scarcely perceptible 'personal charisma' factor does not come to bear at all. Since the first vote (the candidate vote TG/HvdK) has as good as no significance' (Jesse, 1988, 121). Many authors have tried to assess the impact of the 'personal

charisma' factor in different ways. Some have focused on 'incumbency', assuming that only incumbents will be able 'to claim credit for ombudsmen-like activities and for bringing projects to the districts' (Bawn, 1999, 494; see also Moser & Scheiner 2005). Of course, if voters develop candidate preferences that override their preexisting party preferences than we would expect those voters to cast a straight ticket for the party of their most preferred candidate rather than to split their ticket. If this mechanism can be systematically observed for particular party candidates, say incumbents, than we would call it a contamination effect. Thus, sincere ticket-splitters need to have formed preferences about candidates that are independent from their partisan preferences. Our first hypothesis then is: *if the most preferred candidate is not of the same party as the most preferred party we expect such respondents to be more likely to split their ticket sincerely*. For all other voters it is quite likely that candidate preferences and partisan preferences coincide (at least for the most preferred one). Based on this assumption we turn to the next motives.

The second individual motive is strategic. A *strategic voter* is someone who votes for another party (on the list vote) or for another party candidate (on the constituency vote) than her most preferred party or candidate if she thus expects to better influence the outcome of the election than by casting a straight-ticket. There may be various incentives to split a ticket strategically. The main incentive is because the most preferred candidate is unlikely to win a constituency seat. In order to avoid wasting the constituency vote, some voters cast their constituency vote strategically for the most preferred *viable* candidate. Strategic split ticket splitting is possible only if voters can form expectations whether their most preferred party is expected to win a seat. Since polls are typically not representative of one particular constituency, voters have to refrain to other sources to form their expectations. Voters could infer from the electoral landscape of previous elections to the upcoming election. Given that candidates of small parties are less likely to win constituency seats, small party supporters will be generally more likely to cast a strategic candidate vote – particularly when the race is

expected to be close. Generally, strategic ticket-splitting will be more relevant the clearer the expectations in the electorate of who will be the viable candidates. In addition an intense campaign will produce this kind of information too, and campaign expenditures are taken in that regard as a proxy for the volume or the intensity of the local campaign (Johnston and Pattie 2002; Johnston and Pattie 1999; Karp et al, 2002). Strategic ticket splitters are more likely to cast a strategic candidate vote in the SMD-tier than in the PR-tier because they rather expected their candidate vote to be wasted than their party list vote. Ideally one would like to account for both. We, however, focus on strategic ticket splitting as a consequence of a strategic candidate vote. Voters are more likely to strategically split their ticket if they expect that the candidate of their most preferred party has no chance of winning the district. Such small party supporters are particularly motivated to split the ticket strategically the more competitive they expect the district race to be. Thus our second hypothesis is as follows: *If voters expect the district candidate of their most preferred party to be unable to win the district seat, those voters are a priori more likely to split their ticket. They are even more likely to do that the smaller the expected vote gap between the first and the second candidate.*

A third motive is to express multiple-party preferences or to signal support for the voters' most preferred coalition simultaneously (Pappi and Thurner 2002). Although this seems to be strategic, it is not. The important difference is that such voters do not form expectations as to whether they are more likely to influence the outcome of the election by deserting their most preferred option. For instance, small party supporters should not be more likely to desert their party candidate even if the district race is expected to be close. At the end such expressively motivated coalition voters are predicted to split their ticket among their two most preferred parties. They either vote for the party candidate of their most preferred party and cast their list vote for their second most preferred party or the other way around. The difference in how voters rank their two most preferred parties is crucial here. Our third hypothesis predicts that *the smaller this difference is the more likely is a voter to split the*

ticket. Particularly when voters do not have a clear first party preference and most prefer more than one party at the same time they are particularly likely to split their ticket among two of their most preferred parties (Pappi and Thurner 2002).

In addition to those three aforementioned motives for ticket-splitting (sincere, strategic and coalitional) split-ticket voting may arise just from voter ‘confusion’ or, rather, from other (still unidentified) ‘causes’ (Schoen 1999: 474). As long as those ‘causes’ are not correlated with the variables that operationalize the motives for sincere-, strategic- or coalitional split-ticket voting the estimated causal effects are not biased.

Independent from individual motives or contextual factors parties’ have their own interest in contesting particular districts or building common lists. One has to account for the voter’s choice set that might constrain or facilitate the likelihood of a split-ticket independent from individual motives. A universal characteristic of all two-ballot systems is that only if a party does compete in all electoral districts, their supporters will have everywhere the opportunity to cast a straight-ticket for their most preferred party. Sometimes political parties compete only in one tier, either the SMD or the PR tier. Their supporters are consequently forced to split their vote or have to desert their most preferred party in order to cast a ‘straight ticket’ for a less preferred party. This type of behaviour is called ‘necessary split-ticket voting’ (Johnston and Pattie, 2002, 596). The potential for this type of behaviour depends on the nature of voters’ choice set at the district level. We expect voters to split their ticket if their most preferred option is not represented on both ballots, the SMD as well as the PR ballot. Assuming that parties are at least competing at the PR race voters might not be able to cast a candidate vote for the party candidate of their most preferred party. Thus our fourth hypothesis is that, *if voters are unable to vote for a candidate of their most preferred party (because there is no such candidate contesting the seat), they are more likely to split the ticket than voters who can vote for a candidate of their most preferred party.*

Finally, the size of the voters menu does also facilitate opportunities for ticket-splitting. The more parties and party candidates are running on both ballots, the more potential combinations of ticket-splitting are possible (for whatever reason). Voters are more likely to split their votes among similar parties, i.e., parties that are close in an ideological space. We therefore expect more split ticket voting if the menu of candidates is larger (Elklit and Kjær 2005: 129) assuming that the number of party lists in the PR does not vary (a great deal) across SMD districts. Consequently our fifth hypothesis is as follows: *The larger the number of candidates competing in a district, the more likely are voters to split their ticket.*

In general we expect the incentives discussed to be more consequential for voters decision-making process the more likely they perceive them. What are the potential dispositional factors that lead voters facing the same situational incentives to behave differently and what are the underlying mechanism that are associated with ticket splitting?

Facing two ballots with a variety of options to choose from at the same time how do voters make up their mind in the booth? Casting a straight ticket is easy. Voters could rely solely on some heuristic, such as their partisanship, to most efficiently make up their choice. Instead of making two decisions straight-ticket voters only have to make one. Split ticket voting thus seems to require more effort in that regard. When decision makers are sufficiently motivated to switch into a different mode of thinking they might overcome the short cut that a partisan heuristic might provide. This hypothetical process is consistent with the most robust finding in the split-ticket literature that the likelihood to split one's ticket is negatively correlated with the strength of a voter's partisanship (Beck et al. 1992; Campbell and Miller 1957; Karp et al. 2002; Nie et al. 1976). Consequently our sixth hypothesis is: *the stronger voters' partisanship the less likely they are to split their ticket.* Given this individual disposition, the incentive to split a ticket - sincerely, strategically or to support a preferred coalition - should have a strong positive effect on the likelihood to split their ticket in the voting booth.

Data and Operationalization

The data used in this paper are from various election studies in Germany (1998 and 2002), Scotland (1999) and Wales (1999 and 2003), the contextual district level data were drawn from official statistics and election results and merged to the individual level data after identifying each respondent's electoral district.¹ We will also include in further iterations data from New Zealand election studies 1996, 1999 and 2002. All variables are coded from 0 (no, lowest level) to 1 (highest level, available), except size of the menu.

Our dependent variable 'split ticket voting' is dichotomous scoring 0 if respondents cast a straight ticket and 1 if they split their ticket. Non-voting on either the list vote or the candidate vote is coded as a split ticket vote. Missing values on one of the votes is coded as a missing value for this variable. Not all data files contain very exact information about minor parties or voting for independents, which limits the possibility to see whether respondents indeed split their ticket.

In order to test our first hypothesis about sincere ticket splitting we need to assess as to whether respondents have formed independent party and candidate preferences. With the exception of the election studies in New Zealand there are no appropriate items that allow us to assess whether respondents actually did that. An 'incumbency' effect could be identified as a potential proxy in future iterations of this work as a characteristic of the respondent's electoral district but the causal process behind such a variable is not at all clear. For now we cannot test this hypothesis comparatively.

Strategic ticket splitting requires voters to form an expectation that the party candidate does not win a district seat. Since we never will have available pre-election poll results in

¹ STUDY NO: 4180: Welsh Assembly Election Survey, 1999; SN:4346 Scottish Social Attitudes Survey 1999; 5052 - Wales Life and Time Study (Welsh Assembly Election Study) 2003; also the German 1998 CSES I and 2002 CSES II studies.

each electoral district we assume that the actual election results closely resembles those pre-election poll results. Furthermore we assume that voters form consistent expectations about who the viable and non-viable candidates are in their electoral district. We therefore construct a dummy variable ‘third’ scoring 1 if respondent most prefers a party whose candidate ends third or lower (this will be done more subtle in the next version of this paper) in the district race.²

Supporters of parties that are not expected to win a seat however expect competitive race they should be more likely to split their ticket strategically. The competitiveness of the electoral district is measured as usually by the (candidate) vote ‘margin’ (percentage points of total constituency votes) between the top two contenders (Black 1978, 1980; Cain 1978) in respondents’ electoral district. It is reasonable to assume a nonlinear relationship between the district margin and the likelihood to vote to split a ticket strategically because an additional increase of an already expected large margin should provide less extra incentives for small-party supporters to avoid wasting their candidate vote than in highly competitive races. Moreover, taking the square root of the actual margin also stabilizes the variances and makes the distribution of these values approximately symmetrical. Given that we expect that the competitiveness of the district is relevant for small party supporters we also include an interaction term of ‘third’ and ‘margin’ into our models.

In order to see whether coalition preferences are responsible for ticket splitting, we need items that ask respondents directly to evaluate several potential coalitions. Those items are not available, though. Given that with two votes not more than the two most preferred parties could be relevant in order to determine their most preferred coalition we could use party sympathy scores instead from which we could determine respondents’ party preference ranking. Since there are no party preference score items available in Scotland and Wales (but for Germany and New Zealand) we do not attempt to test our third hypothesis here.

² Voters without any most preferred party score 0 because they should not behave strategically.

In order to test our fourth hypothesis we need to assess the nature of the choice set at the district level. We construct a dummy variable ‘necessary’ to account for the possibility that voters might be forced to split their ticket scoring 1 if a party candidate of a respondent’s most preferred party does not contest the district seat.³ Our fifth hypothesis predicts more ticket-splitting with a larger menu to choose from. We operationalize the size of the menu as the number of ‘candidates’ in the respondent’s electoral district. Given the districted nature of the PR-tier in Scotland and Wales there is some variation across the list menus, too. Parties may compete in one region, but not in another. We ignore this added complication for now and focus solely on the variance in the number of candidates across the SMD-tier. Finally, our sixth hypothesis can be straightforwardly tested by including a standard item about a respondent’s strength of party identification.

Analysis and Results

Contrary to the dominant case study research design that characterizes the literature on ticket-splitting we propose to test our hypotheses comparatively across several elections in various countries with similar electoral systems. We try to explain horizontal split ticket at the individual level and not at the aggregate (district) level. There are several reasonable additional explanations of split ticket voting (a good constituency candidate, a strong coalitional incentive existing at the national level) we cannot account for. Although, we do *not* expect this model to draw a comprehensive picture of the split-ticket phenomena, we think, however, that those omitted factors will be independent from the ones we are testing.

Table 1 presents some descriptive overview about the basic coordinates of the electoral systems for which we have and going to compile even more data on the district-level and the individual-level.

³ Respondents who most prefer a party we have no party preference measure for (e.g., in the ‘other’ or ‘minor party’ category) are coded 1 (for Scotland and Wales).

Table 1: descriptive statistics: electoral system and ticket splitting

Election study	No. of SMD-districts	Av. Size of SMD-menu	% split ticket voting
Germany 1998	328	8.18	18%
Germany 2002	299	6.48	27%
New Zealand 1996	65	7.22	
New Zealand 1999	67	10.07	
New Zealand 2002	69	8.57	
Wales 1999	40	4.98	25%
Wales 2003	40	4.98	17%
Scotland 1999	73	4.59	20%
Scotland 2003	73	5.56	28%
...			

There are many more candidates on offer on the SMD menu in Germany and particularly in New Zealand than in Scotland and Wales. This might be a function of the higher effective thresholds for small parties to gain a PR seat in a multi-member districted PR tier in Wales and Scotland as compared to the nationwide threshold of 4 (New Zealand) and 5 (large PR district). The level of ticket-splitting across those elections is broadly comparable, ranging from as low as 17% (Wales 2003) to 28% (Scotland 2003).

Are those hypothesized effects comparable across elections and countries? In order to test our hypotheses simultaneously and given the dichotomous nature of our dependent variable we will estimate a series of logit models. The results are presented in table two. We estimate our models for all elections in every country separately and also present some pooled results.

[Table two about here]

The most consistent result seems to be that voters with weak partisan anchors are more likely to split their ticket. We find evidence for this effect in every single election study we looked at. And this result is not surprising since all other studies about ticket-splitting replicate this finding. Moreover, very consistent is also that the size of the menu does not seem to matter in determining an individual's likelihood to split their ticket.

Strategic ticket splitting can only be observed in Germany, but there it is consistent across both elections and the effects are comparable. Supporters of parties that expect their district candidate to have no chance in the district race are likely to split their ticket. The presumed logic is, however, not facilitated by the perceived competitiveness of the district race. The viable candidates in those district races belong typically to either of the two large parties (SPD or CDU). Thus, small party supporters might know that from the outset that their candidate will never have a chance to win a seat. What then drives such small party supporters to split their ticket? Potentially, and that will be tested in the next iteration of this paper, such voters are more likely to desert their party candidate the weaker their partisan anchors are.

Furthermore, with the exception of the election in Wales we find some menu effect nevertheless. Some voters systematically split their ticket if they cannot cast a straight ticket for their most preferred party. Can we distinguish those split ticket voters from the ones who rather cast a straight ticket for a less preferred party in those situations? Such findings could inform the literature on the micro-mechanism of contamination effects. Presumably the strength of a respondent's partisan anchor might also play a role here. Strong partisans that cannot cast a straight ticket are more likely to split their ticket than weak partisans facing the same decision problem.

Finally, we do not have measures to account for personal or coalitional motives that might lead voters to split their ticket those incentives are present to some degree. For instance

it is save to assume that coalitional incentives are absent in Wales and Scotland but present in Germany and New Zealand, while a personalistic tradition is everywhere present except for Germany. Although we have not controlled for them, the constants in our logit models represents the estimated average impact of all factors that are not modeled explicitly. Those are among other things the impact of coalitional and personal vote incentives. The constant of the pooled model for Germany (no personal but coalitional incentives) indicates higher odds 0.4 (= $\exp(-0.9)$) than the constant of the comparable pooled model 0.2 (= $\exp(-1.6)$) for Scotland and Wales (personal but no coalitional incentives). Thus if we are willing to assume holding everything else constant that the constant in Germany is essentially a function of coalitional incentives and the constant in the pooled model for Scotland and Wales is essentially a function of personal incentives and all other country specific factors are the same, than we would conclude that coalitional incentives are twice as important in determining ones likelihood to split a ticket than the incentives behind a personal vote.

Conclusions

What have we learned? Comparative politics is difficult. Trying to test comparable hypotheses on comparative data that was never meant to be comparative is a daunting task. Several strong assumptions have to be made before deriving at some conclusions. They can never be that precise and fine-grained in comparative secondary data-analysis projects where you have to go with what you get. The strength of quantitative case studies then is that you can keep many potential influences constant. Moreover, if you have influence on how those election studies are generated than we might be able to conduct more precise test of the causes and consequences of ticket splitting in the future. The strength of testing (albeit less) hypotheses comparatively is that we are replicate our models across different institutional settings. This will potentially broaden our theories and advance our knowledge about the institutional embeddedness of every type of political behavior. At the very least it will show

us that some mechanisms can be observed across different environments and institutional settings while others apparently interact with some features of the environment if they do not hold across the board. Thus we can ask under what conditions those mechanisms operate.

The preliminary results of this paper indicate that strength of partisanship seems to be a mechanism associated with ticket-splitting that holds across elections and countries. Thus the strength of ones partisan anchor seems to be a universal characteristic in that regard and given the current literature not only dependent on the selection of countries and elections we analyzed here. We need to analyze more elections to see whether and why voters who cannot cast a straight ticket for their most preferred party actually split their ticket. Based on the results we report here there is some evidence that this is actually going on. For the reasons as to why, we have only speculated so far and will analyze this further in future iterations of this work.

Strategic ticket splitting seems to be, at least based on our preliminary results as a rather context dependent effect. We find consistent effects only in the German elections we looked at. Apparently the context in question is not the perceived competitiveness of the district. Maybe potential strategic ticket splitters use very basic heuristics in order to determine whether the party candidate of their most preferred party does or does not win a seat. An electoral history heuristic might come in handy here. It is not terrible difficult for German voters to know that, as a supporter of a small party, their party candidate will not have chance to gain a district seat. Further research is also needed in order to find out under what conditions small party supporters should split their ticket strategically instead of wasting their candidate vote.

Finally, we would like to increase the number of elections in order to replicate our findings but particularly to average out the election and country specific uncertainty that is present in every type of systematic comparison of model coefficients.

Literature

- Alvarez, R. M., and M. M. Schousen. 1993. Policy Moderation or Conflicting Expectations - Testing the Intentional Models of Split-Ticket Voting. *American Politics Quarterly* 21 (4):410-438.
- Bawn, K. 1999. Voter responses to electoral complexity: Ticket splitting, rational voters and representation in the Federal Republic of Germany. *British Journal of Political Science* 29:487-505.
- Beck, P. A., L. Baum, A. R. Clausen, and C. E. Smith. 1992. Patterns and Sources of Ticket Splitting in Subpresidential Voting. *American Political Science Review* 86 (4):916-928.
- Cox, G.W. 1997. *Making Votes Count; Strategic Coordination in the World's Electoral Systems*. Cambridge: Cambridge University Press.
- Cox, G.W., Shugart, M.S. 1996. Strategic voting under proportional representation. *Journal of Law, Economic, and Organization* 12 (2):299-324.
- Gschwend, T. 2003. Comparative Politics of Strategic voting. Paper read at American Political Science Association meeting, August, 28-31 2003, at Philadelphia.
- Gschwend, T., R. Johnston, and C. Pattie. 2003. Split-ticket patterns in mixed-member proportional election systems: Estimates and analyses of their spatial variation at the German Federal Election, 1998. *British Journal of Political Science* 33:109-127.
- Jesse, E. 1988. Split-Voting in the Federal-Republic-of-Germany - an Analysis of the Federal-Elections from 1953 to 1987. *Electoral Studies* 7 (2):109-124.
- Johnston, R. J., and C. J. Pattie. 2002. Campaigning and split-ticket voting in new electoral systems: the first MMP elections in New Zealand, Scotland and Wales. *Electoral Studies* 21 (4):583-600.
- Johnston, R., and C. Pattie. 1999. Constituency campaign intensity and split-ticket voting: New Zealand's first election under MMP, 1996. *Political Science* 51 (2):164-181.

- Karp, J. A., J. Vowles, S. A. Banducci, and T. Donovan. 2002. Strategic voting, party activity, and candidate effects: testing explanations for split voting in New Zealand's new mixed system. *Electoral Studies* 21 (1):1-22.
- McAllister, I., and S. White. 2000. Split ticket voting in the 1995 Russian Duma elections. *Electoral Studies* 19 (4):563-576.
- Moser, Robert G., and E. Scheiner. 2005. Strategic Ticket Splitting and the Personal Vote in Mixed-Member Electoral Systems. *Legislative Studies Quarterly* XXX (2):259-276.
- Pappi, F. U., and P. W. Thurner. 2002. Electoral behaviour in a two-vote system: Incentives for ticket splitting in German Bundestag elections. *European Journal of Political Research* 41 (2):207-232.
- Schoen, H. 1999. Split-ticket voting in German Federal elections, 1953-90: an example of sophisticated balloting? *Electoral Studies* 18 (4):473-496.

Table 2: The determinants of ticket-splitting across elections and countries

<i>Independent variables</i>	Germany (1998, 2002)	Germany (1998)	Germany (2002)	Scotland and Wales, pooled	Scotland (1999)	Wales (1999, 2003)
<i>Strength of Partisanship</i>	-1.335** (0.114)	-1.828** (0.154)	-0.626** (0.179)	-1.061** (0.243)	-1.358** (0.348)	-0.809* (0.338)
<i>Margin</i>	0.152 (0.326)	0.324 (0.462)	0.061 (0.474)	0.500 (0.542)	-0.710 (0.854)	1.334 (0.716)
<i>Third party</i>	0.971** (0.195)	1.086** (0.262)	0.901** (0.296)	0.277 (0.367)	-0.193 (0.523)	0.609 (0.529)
<i>Margin * Third Party</i>	-0.386 (0.545)	-1.359 (0.748)	0.585 (0.800)	0.552 (0.897)	1.806 (1.377)	-0.227 (1.193)
<i>Size of menu</i>	0.025 (0.024)	0.011 (0.029)	0.081 (0.046)	0.076 (0.085)	0.043 (0.129)	0.057 (0.117)
<i>Necessary</i>	0.736* (0.308)	1.767** (0.630)	0.102 (0.425)	1.087** (0.385)	1.707** (0.551)	0.663 (0.540)
<i>Year (1= earlier year)</i>	0.323** (0.083)					0.416* (0.190)
<i>Constant</i>	-0.910** (0.211)	-0.299 (0.289)	-1.642** (0.369)	-1.569** (0.471)	-0.849 (0.681)	-2.122** (0.683)
<i>N</i>	3736	1973	1763	1823	1006	817

Robust standard errors in parentheses; * significant at 5%; ** significant at 1%