Strategic voting, party activity, and candidate effects: testing explanations for split voting in New Zealand's new mixed system

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Abstract

Recent research on voting in Germany's mixed electoral system suggests that split voting has more to do with voter confusion than sophistication, although this remains a matter of debate. We examine this question in the context of New Zealand's new mixed system, which is modeled after Germany's. We focus on alternative explanations for split voting. One is derived from theories of strategic voting, which hypothesizes that voters will split their votes when their preferred party's candidate is not viable in single member district (SMD) contests. We also consider the influence of party attachments and candidate preference. We examine these explanations using both aggregate and individual level data. The assumption that split voting in mixed systems is largely due to confusion is not supported in New Zealand as split voters cast votes in predictable patterns. In particular, we find that strategic defections are more likely to occur when the preferred candidate is not viable. Those with higher levels of political knowledge are more likely to defect from nonviable candidates. Partisan attachments and candidate effects also help to explain split voting. © 2001 Elsevier Science Ltd. All rights reserved.

Mixed electoral systems combine plurality election for single member districts

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(SMDs) with a proportional representation (PR) component. They have become increasingly popular as means of election to legislative assemblies. Generally, voters in these mixed systems cast two votes: one for the party and another for the electorate contest. For much of the postwar era, this type of system was almost entirely unique to Germany. Yet in recent years, sixteen countries, including New Zealand, Italy, Japan, South Korea, Mexico, Hungary, Russia and the Ukraine have adopted versions of this model (Lancaster, 1997; Elklit and Roberts, 1996). Mixed systems have also been adopted for the Scottish Parliament and the National Assembly of Wales and reformers have suggested adopting a mixed electoral system for Britain (see Report of the Independent Commission on the Voting System, 1998).

These mixed systems are attractive because they combine the advantages of both electoral systems–single member district representation together with an element of proportional representation, and help to offset some of the disadvantages associated with each type of system (Bawn, 1999, pp. 490–491). In some "compensatory" mixed systems, as in Germany and New Zealand, the PR or "party vote" is used to compensate for disproportionate outcomes in the SMD contests. The system is proportional because seats in the legislature are ultimately determined by the distribution of the party vote nationwide, and is referred to as "Mixed Member Proportional" (MMP). In other "parallel" mixed systems, as in Japan and Russia, seats are allocated independently in SMD and PR sections (Blais and Massicote, 1996). Some critics claim there is a disadvantage in mixed systems of either kind. Voters may be confused by the existence of two sets of rules which translate their votes into seats, and such confusion can discourage participation, produce results that are not consistent with voters' preferences, and undermine system legitimacy (see, for example, Schoen, 1999; Cox and Schoppa, 1998; Jesse, 1988). This may be a particular problem in cases where a new electoral system has been introduced. Such concerns were raised by opponents of the mixed system adopted in New Zealand and were taken seriously by the Electoral Commission who launched an education programme that provided voters with the basic facts needed to cast an effective vote (Banducci et al., 1998a, p. 103).

The claim that split-ticket voting results from such misunderstanding of mixed electoral systems has recently been described as the 'conventional interpretation' (Bawn, 1999, p. 502). Split-ticket voting occurs in a variety of systems where voters can choose to simultaneously support different parties with each of their votes. In a classic 1950s study of ticket splitting in the US, Campbell and Miller (1957) found that ticket splitting occurred disproportionately among the least educated voters. What little research has been conducted on mixed systems has largely been restricted to Germany, which has had a two-vote system since 1953. Surveys following the 1987 election indicated that just 45% of German voters identified the party vote, labeled the "second vote" in Germany, as the most important vote while 20% thought it was the electorate vote (Jesse, 1988, p. 119). In Germany, small parties encourage split voting by relying upon the ignorance among voters of the relative importance of the two votes (Roberts, 1988). An analysis of the combinations of the first and second votes between 1953 and 1990 indicates that less than half of the tickets were split in a completely rational manner (Schoen, 1999, p. 492).

In New Zealand's first election under MMP in 1996, 37% of the electorate split their vote by casting their party vote for one party and an electorate vote for a candidate of a different party. This is substantially higher than Germany, where split voting has increased from 4.3% in 1961 to 16% in 1990 (Jesse, 1988, pp. 114–115; Dalton, 1996, p. 211). Critics of such mixed systems might argue that many New Zealand voters were confused. However, research examining the influence of electoral laws on voting behavior suggests that split voting could be the result of sophisticated behavior (see, for example, Cox, 1997; Lijphart, 1994; Taagepera and Shugart, 1989; Lakeman, 1974; Rae, 1967; Downs, 1957; Duverger, 1954). In this paper we draw on theories of strategic voting to explain New Zealand's comparatively high level of split voting in its first election held under MMP. We begin by reviewing theories of strategic voting in the context of mixed systems. We then test these theories against alternative explanations for split voting using both aggregate and individual level data.

1. Theories of strategic voting

Theories of rational or strategic voting assume that voters are motivated by a desire to affect the outcome of an election and thus will only support candidates who have a reasonable chance of winning (Cox, 1997). Rational voters whose first preference is for a party or candidate they know has little or no chance of winning in their local electorate will defect and support a more viable alternative to avoid "wasting" their vote. According to Duverger, in plurality systems, where only one candidate may be elected, the *psychological* effect discourages voters from supporting candidates other than the two top contenders. The *mechanical* effects of a single member electorate vote will also lift the seats won by the two main parties and depress those for minor parties (Duverger, 1954, p. 126; Blais and Carty, 1991, pp. 89–91). In contrast, in PR systems, voters have less of an incentive to defect from their first preference because the threshold for gaining representation is significantly reduced. Although greatly minimized, the potential for strategic voting in PR systems still exists to the extent that the system departs from pure proportionality (Sartori, 1968; Cox, 1997). Thus when electoral rules vary, as they do in mixed systems, theories of strategic voting predict that rational voters will not necessarily support the same party with each of their votes. Where the election of a candidate is determined by plurality rules, rational voters who favor candidates for nonviable parties will defect and vote for a more viable alternative. Where the outcome of an election is determined by proportional representation, rational voters are free to cast a sincere vote without fear of it being wasted.

A number of scholars have found empirical evidence to support Duverger's propositions in SMD single ballot systems (see, for example, Cox, 1997; Ordeshook and Zeng, 1997; Blais and Nadeau, 1996; Lijphart, 1994; Bowler and Lanoue, 1992; Taagepera and Shugart, 1989; Galbraith and Rae, 1989; Lakeman, 1974; Rae, 1967). However, the simple application of Duvergerian logic to mixed systems has been recently challenged by Cox and Schoppa (1998). They contend that the complexity

of the two-vote system leads to "sticky voting" where voters who are confused will choose to vote for the same party on both ballots even when strategic incentives would suggest they should split their votes. Their assumption is a voter's decision is likely to be affected by the appearance of their favorite party on the other side of the ballot. Confused voters who think in terms of the PR vote will not defect from a nonviable candidate in the SMD contest because they see the party competing successfully on the PR side of the ballot. Based on this line of reasoning, confusion over the rules does not contribute to an increase in split ticket voting but instead to an increase in straight ticket voting. The result is that strategic voting is greatly reduced in mixed systems.

There are further grounds for skepticism about whether rational voters tend to defect in significant numbers from a less viable to a more viable party or candidate, regardless of electoral system. Critics of the rational model contend that voting is not merely instrumental behaviour, intended to get a candidate elected; it is also expressive behaviour, a way for electors to psychologically identify themselves with a preferred party, an admired party leader or a general approach to politics. Equally, perhaps, voting may also be used to make a point in protest against current policies or leadership. These different kinds of psychological effects are more in line with those identified by Campbell et al. (1960). An alternative party identification, affective, or expressive model of voting choice claims that where electoral systems allow multiple votes, those who have weak attachments to political parties and weak interest in politics will be more likely to split their votes (Campbell, 1960; Stanley and Neimi, 1991).[1] Weak partisans or non-identifiers can split between contending parties due to short term candidate appeals, longer-term candidate incumbency effects, polling place decisions, and passions of the day. Research on split ticket voting has identified weak partisan attachments in the United States (Beck et al., 1992; Maddox and Nimmo, 1981) and Australia (Bowler and Denemark, 1993) as a source of split ticket voting.

2. Expectations for New Zealand

Emerging multi-party politics under New Zealand's previous FPP system made a significant number of voters familiar with strategic dilemmas. Although the center-right National and the center-left Labour parties have dominated the political scene since the 1930s, growing support for small ("third") parties means that there are a significant number of electorates where these small parties are locally viable. These small parties include the Alliance, a party to the left of Labour, New Zealand First, a centrist party, and the neo-liberal Association of Consumers and Taxpayers (ACT), which is to the right of National. In 1996 these nationally 'minor' parties won nine out of 65 electorates and placed second to either National or Labour in 14 electorates

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[1] We label the psychological or, as it is more widely known, the party identification model, as the "affective model", to avoid confusion with Duverger's "psychological effect".

as shown in Table 1.[2] Depending on the electorate, therefore, voters are faced with the prospect that a vote for either a major or minor party will not translate into a seat. Voters may consider defecting from the party they prefer to another party's candidate if their party's candidate has little chance of being first past the post.

In contrast, the risk is minimal that a vote under PR rules will be wasted so voters are better able to cast a sincere vote. New Zealand's MMP system has a threshold for representation through the party vote, which requires a party to win either an electorate seat or at least five per cent of the party vote. This means there may be a small Duvergerian psychological effect discouraging party votes for parties expected to fall below the threshold.[3] In New Zealand in 1996, there were two parties in this position: ACT and the Christian Coalition. ACT crossed the threshold: the Christian Coalition did not. Overall, based on data collected by the New Zealand Election Study in a post-election survey, 89% of the voters who expressed a single preference for a party, measured by a likes and dislikes scale, cast a party vote consistent with that preference.[4] This provides empirical support for our assumption that the party vote is a sincere vote. In contrast, the relationship between party preference and electorate votes is not quite as strong for those expressing a single preference for Labour or National and weakens considerably for the minor parties, confirming the influence of Duverger's psychological effect (Vowles et al., 1998, pp. 196–197).[5] While those who may have used the party vote strategically can be marginally significant in terms of election outcomes, their numerical insignificance makes them peripheral to the questions we presently address.

Table 1
Placement of parties in the electorates (1996)[a]

	First place	Second place	Third and beyond
National	30	27	7
Labour	26	24	15
NZ First	6	6	53
Alliance	1	6	58
ACT	1	1	60

[a] National stood candidates in 64 electorates and ACT stood candidates in 62 of the 65 electorates.

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[2] This includes the United party, which won one electorate seat and placed second in one electorate. Since the United party stood candidates in less than half the electorates we exclude the party from subsequent analysis. Party voters for all parties that did not secure seats are also excluded.

[3] For the party vote, the entire country is effectively a single electoral district, making Duverger's district-level hypothesis also applicable.

[4] The party rankings measure has the advantage of identifying the party preferences of more respondents than party identification as most of the respondents who express a preference for small parties do not identify with any party.

[5] Specifically, about three quarters of those expressing a single preference for Labour or National cast an electorate vote those parties, while half voted for Alliance and about a third who expressed a single preference for ACT cast an electorate vote for that party.

We have conceived of partisan defection as if the choice of the electorate vote in a mixed system applies in the same way as in a simple plurality system where a vote for a candidate in a single member district ultimately affects party representation. However, in compensatory systems such as MMP, the electorate vote does not normally determine the overall partisan composition of parliament, nor normally contribute toward the selection of a government, the prime focus of voting in parliamentary democracies like New Zealand or Germany. As Cox asks, 'why would German voters care who won in their district?' (Cox, 1997, p. 81).

Under MMP, electoral outcomes in the SMD contests can influence the partisan composition of parliament if a party wins more electorate seats than it would be entitled to based on its party vote. In these circumstances, the party keeps all of its electorate seats, creating an "overhang". Although this would be unlikely, or at least rare, according to Cox the possibility of such an overhang is a factor that could make the outcome of an SMD contest important to voters. Such thinking is unlikely to influence the behaviour of more than an insignificant minority of voters.

Cox does suggest another reason for strategic defection that he considers more persuasive. The identity of the local representative is valued in itself, above and beyond the balance of party forces in the legislature (Cox, 1997, p. 81). For these reasons, Cox concludes that strategic voting in MMP electorates should be similar to that in English constituencies (Cox, 1997, p. 81). Cox does not explore specific reasons why the identity of the representative should be important to voters, but we suggest two. Either voters simply value the personal identity of the candidate, for affective or instrumental reasons or, in the absence of preference for a candidate as such, they may wish to have a local representative that shares their ideological beliefs. Party activity may also cause voters to take the electorate contests seriously. Parties wish to win electorates, giving their candidates a higher local profile and their party a more solid local organizational base.

If none of these explanations for strategic defection are persuasive, there is another. Conservative interpretation of the survey evidence indicates that the compensatory nature of the system may have only been fully understood by about half of the voters (Harris, 1998). This suggests that as many as half the voters may continue to place importance on the outcome of electorate contests in anticipation that their electorate vote will affect the distribution of power in parliament, as it would in a parallel or non-compensatory mixed system.[6] This presents the possibility of a mixture of misunderstanding and sophistication among some people. Voters sophisticated about how their votes can be made more effective under first past the post may not yet have learnt enough about the new system to take into account the lesser importance of the electorate vote under MMP. If this lack of understanding were strongly associated with split voting, the confusion hypothesis would have some support.

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[6] Because capture of an electorate seat can take a small party across the threshold, voters may also reasonably ascribe considerable importance to an electorate vote if they cast it for an SMD-viable candidate for a nationally marginal or 'threshold' party.

To summarize, even in New Zealand's compensatory system, we can expect voters to care enough about the outcome of an SMD contest to consider defecting from a primary to a secondary preference for four sets of reasons, not all of which are mutually exclusive.

1. voters take seriously the possibility of an overhang; or
2. voters value the personal identity and/or past behaviour of the candidate; or
3. voters value the party ideology of the candidate because she is the most ideologically proximate viable alternative; or
4. voters unfamiliar with the new system may expect the SMD contests to influence the partisan distribution of parliament as they have in the past.

3. Measuring strategic voting

Duverger writes, "In cases where there are three parties operating under the simple-majority, single-ballot system, the electors soon realize that their votes are wasted if they continue to give them to the third party; whence their natural tendency to transfer their vote to the less evil of its two adversaries in order to prevent the success of the greater evil" (Duverger, 1954). A voter who prefers a minor party is more likely to defect from that preference and support a major party when she can help defeat the least preferred of the major party contenders. When the outcome of an election is more certain, there is little reason for voters to transfer their votes from one hopeless candidate or party to another. In some studies of strategic voting this situation has been operationalized by calculating the closeness of the race between the two major parties (Spafford, 1972; Johnston and Pattie, 1991; Cox, 1997).

In his analysis of German elections Cox (1997, p. 83) finds evidence of strategic voting using a measure of competitiveness between the two dominant parties as the explanatory variable. To measure defection, Cox uses the difference between the electorate vote (EV) and the party vote (PV) for two small parties, the Greens and the FDP. Because these parties have little chance of winning an electorate seat, Cox hypothesizes that their supporters will transfer their electorate votes to either the CDU or SPD when the race between the these two major parties is close. Thus as the margin between the top two contenders in the electorate contests decreases the difference between a small party's party vote and its electorate vote increases. This suggests that voters defect from non-viable parties to support a viable party in closely fought contests where the risk of failing to influence the outcome by supporting a non-viable party is greatest. Given the similarity between the German and New Zealand electoral systems, we might anticipate finding similar evidence of strategic voting. Yet it turns out that such competitiveness does not predict defections in the New Zealand context, either calculated as between the two largest parties nationally, or between the two main contenders in each electorate (Banducci et al., 1998b). There is a major difference between the German and New Zealand experiences that may help to explain why.

In Germany, only the two major parties have realistic chances of winning an electorate seat. No party other than the two largest won a constituency seat between the end of the 1950s and 1994, when the former Communist PDS won four electorate seats (Poguntke, 1995, p. 350). Compared to Germany, where the party system has been relatively stable and MMP has been in place over many elections, the more competitive party system in New Zealand changes the balance between major and minor parties: indeed, it calls the very distinction into doubt.[7] A key element implicit in the Duvergerian hypothesis necessary to apply to the New Zealand situation is absent from Cox's formulation: the extent of minor party candidate viability. Competition could be high between first and second place candidates, but if a candidate in third place vote was just behind, one would not expect defection from her supporters.

An alternative variable is needed that takes into account the perceived viability of each of the parties in the SMD contest. The wasted vote margin — the vote difference between a person's preferred party and the candidate she perceives as likely to come second in the race — provides the most precise estimate of the incentive to defect (Banducci et al., 1998b; Alvarez and Nagler, 1997). Estimating this margin for each voter presents some problems. Lacking subjective perceptions from each respondent, an objective estimate of a candidate's viability is required, plus an assumption that voters' perceptions will correspond to that estimate, if our hypothesis is sustained. For example, a candidate's share of the vote could be used as an indicator of viability. However, use of the results from one election at time t to calculate both a dependent and an independent variable puts the cart before the horse by assuming that voters base their decision on information that is not available to them. Technically, it creates a problem of endogenity, because it would use results from the same election on both sides of the equation of cause and effect. If voters are behaving strategically by defecting from nonviable parties to more viable parties then the ultimate results are not likely to be an accurate indicator of pre-election viability. Some parties will have their vote share lifted by strategic defections while other parties will see their vote share reduced.

A more conservative indicator of local party or candidate strength is the wasted vote margin between voters' preferred party and the second-placed party's candidate derived from election results at the previous election ($t-1$). Past performance helps parties decide where to concentrate their resources. It also provides an independent cue to voters who fear wasting their votes. However, making estimation more difficult, both electoral boundaries and the electoral system itself changed between 1993 and 1996. However, votes cast at polling places in 1993 were reallocated into the new electorate boundaries, published, and made available to political parties, the media, and therefore indirectly to voters (McRobie, 1995). No other information was available to parties or voters to estimate candidate viability in all electorates. Pre-election polls were published for only a very few contests (one of which, however, was critical). More generally, voters were familiar with most of the small parties

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[7] Particularly given almost even polling support for Labour and two other 'minor' parties at the outset of the 1996 election campaign (Vowles et al., 1998, p. 67).

that had previously contested seats. Although together these small parties were successful in attracting 30% of the vote in 1993, they gained only 4% of the seats. However, supporters of small parties would not expect their votes to be wasted in those electorates where these parties were either represented or previously did well. Empirical evidence supports these expectations. The vote waste margins for 1993 figures redistributed into 1996 electorates and the margins based on 1996 votes in those electorates correlate at $r=0.74$. Despite electoral system change, electorate votes cast in both elections indicate considerable continuity in the relevant margins between the various parties.

It could be argued that use of an objective estimate of the incentive to defect begs the question of where voters get the information necessary to make strategic decisions. Doubts may remain about the use of previous vote shares to compute the wasted vote margin and, in particular, about the extent to which it is reasonable to expect such information to find its way into the heads of a significant number of voters. However, the investment that parties make in contesting the election is another measure of party viability. Spending by political parties gives voters a sense of their local strength providing a basis for tactical or strategic voting (Fieldhouse et al., 1996). In US congressional elections, parties that have a reasonable chance of winning will devote more resources to contesting the campaign while hopeless parties will choose to invest their resources elsewhere (Jacobson 1978, 1990). Denemark (1998, pp. 96–97) finds evidence to suggest that party activity in New Zealand's 1996 campaign reflected this strategy. Of course, spending by parties is not always entirely rational, as parties may over invest in safe seats and under invest in seats that may be more competitive. If this is the case then it might give a false impression that the seat is either more or less vulnerable than it is. Campaign spending is also designed to persuade voters to support the party nationally. Either way, strategic decisions by voters will be indirectly affected by party activity. This is the conclusion reached by researchers in the US who demonstrate that elite decisions over campaign spending in congressional races drive voters to split their ballots (Burden and Kimball, 1998). By employing measures of the incentive to defect derived from previous vote share as well from as campaign expenditures, we can test how well each of these measures can predict defection.

Aggregate-level measurement of the dependent variable — defections from a voter's preferred party — has been measured in Germany by taking the difference between a party i's vote total in district j (PV_{ij}) and the vote total for party i's candidate in district j (EV_{ij}) (Fisher, 1973; Jesse, 1988; Bawn, 1993; Cox, 1997, p. 82).[8] There are, however, at least two drawbacks to using this indicator. First, this measure can produce negative values in cases where a candidate outperforms her party ($EV_{ij}>PV_{ij}$). Second, this standard measure overestimates straight voters by counting straight voting as the overlap between aggregate electorate and party votes. For example, a voter who splits her vote and gives her party vote to Party A and her electorate vote to Party B overlaps with another split voter who gives his party

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[8] For an explanation of Cox's measurement of split voting and marginality see Cox (1997, pp. 81–84).

vote to Party B and his electorate vote to Party C. These two splitters are counted as one pair of straight votes for Party B. Therefore the total number of straight voters is overestimated, and the number of defectors underestimated.[9] Of course, more precise estimates of split voting can be obtained by cross tabulating party and candidate votes at the individual level. Unfortunately the best individual-level German data are reported only at the state and national levels, precluding an analysis of the classical Duvergerian psychological effects at the district level at which they are supposed to work (Schoen, 1999, p. 478).[10]

Our alternative and more precise aggregate-level dependent variable uses unique New Zealand data on the number of voters who cast a party and electorate vote for the same party — straight voters (StV_{ij}). Each ballot is examined and the number of ballots where the party vote and the electorate vote are for the same party is recorded for each electorate. These data are released by the Chief Electoral Office (CEO) of New Zealand. Therefore, we need not rely on the aggregate difference between PV_{ij} and EV_{ij} to estimate the number of voters who defected from their party vote to vote for a candidate of a different party. Instead, we can calculate the number of split voters by subtracting the number of voters who cast a straight party ballot for party i in electorate j (StV_{ij}) from the party vote for party i in electorate j (PV)$_j$. This gives the actual number of voters in each electorate who gave party i their party vote but opted for another party with their electorate vote.

Following the literature, and supported by empirical evidence of a close link between preference and party vote among New Zealand voters in 1996, we assume that defection to a viable SMD candidate with the electorate vote represents a strategic vote. The party vote is cast for a preferred party which is not viable at the SMD level. Therefore, the number of strategic split voters is calculated by subtracting the number of straight votes cast for a party in an electorate from the party's party vote in the electorate ($PV_{ij} - StV_{ij}$). This gives the number of voters in an electorate who cast a party vote for one party but voted for another party with their electorate vote. It does not underestimate the number of split voters as the traditional measure does and it also avoids the problem of negative values.

4. Aggregate results

Table 2 presents the expected vote loss for each party, based on the assumption that vote loss will be greatest when the party's voters strategically defect from their least viable candidates. As discussed earlier, campaign spending is also used as an

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[9] While this is a measurement error, in models estimating strategic voting the estimates will nonetheless be conservative.

[10] In principle, any individual-level data with a district code can be used for this purpose. However not all survey data includes district codes, and if sampling is stratified for reasons of economical administration of personal interviews it may not include data from a sufficient variety of districts. Another difficulty is the proportion of defectors or vote-splitters. If it is small, normal sample sizes of 1–2000 may be insufficient to examine district-level vote splitting effectively.

Table 2
The effect of previous vote wastage and candidate expenditures on loss of vote[a]

	Alliance		ACT		NZ First		National		Labour	
Constant	31.30**	41.57**	50.91**	59.85**	18.34**	31.25**	25.05**	23.18**	26.00**	41.75**
	(2.36)	(3.51)	(6.58)	(6.37)	(3.05)	(4.15)	(1.40)	(5.59)	(1.97)	(4.44)
Candidate expenditures (in $1000)	–	–1.12**	–	–1.18**	–	–1.11**	–	0.12	–	–1.47**
	–	(0.30)	–	(0.31)	–	(0.27)	–	(0.36)	–	(0.38)
Previous vote wastage	1.26**	1.16**	1.11**	1.03**	1.03**	0.86**	1.23**	1.26**	3.08**	1.88**
	(0.18)	(0.16)	(0.23)	(0.21)	(0.13)	(0.13)	(0.22)	(0.25)	(0.91)	(0.88)
Adj. R^2	0.44	0.53	0.27	0.41	0.47	0.58	0.32	0.31	0.14	0.30
n	65	65	62	62	65	65	64	64	65	65

[a] Source: Chief Electoral Office. Dependent variable is percent who split ($PV_{ij}-StV_{ij}$). Standard errors are in parentheses. **$p<0.01$; *$p<0.05$.

indictor of viability. New Zealand's electoral laws provide for public funding for advertising and limit the amount of money that can be spent in each constituency to $20,000 (Section 214B(2) of the Electoral Act of 1993). Electorate candidates' election expenses are treated as totally distinct from party expenses and candidates must provide their own separate return (Electoral Commission, 1996, p. 7). Despite the ceiling on expenditures, parties varied substantially in how much they spent in each constituency (see Appendix A). The wasted vote margin based on previous vote share is also used as an indicator of viability for all of the parties. In the case of ACT, a newly-formed party, we take the margin between the second placed party and 0, except for the electorate of Wellington Central, where ACT was widely understood to be viable due to well-publicized pre-election polls. The other small parties, which include the Alliance and New Zealand First, had previously contested electorates but were only successful in winning a few seats. We hypothesize that the greater the spending and the lower the wasted vote margin, the lower the expected defection rate. Thus a negative coefficient for spending and a positive one for vote wastage would represent support for the strategic voting hypothesis. Because the previous vote waste margin is one of the key indicators parties would use to target their expenditure, we estimate the model in two steps, the first with only the vote waste margin, the second adding the candidate expenditure.

The results indicate that for the smaller parties both measures explain about half of the variation in defections from the party vote. For the two larger parties, the variance explained is significantly less. Exponents of the affective model might expect less defection among those giving their party votes to Labour and National, given higher levels of psychological attachment to these parties. For all parties, as the chances for an electorate win increase, the percentage of voters who split their vote decreases. For all but National, the lower the campaign expenditure, the higher the defection. The estimates reveal, for example, that the expected New Zealand First loss from the party vote decreases by 22% when New Zealand First spends the maximum amount of money on its candidate (20 times the coefficient of −1.11). The effect of spending is similar for ACT, though the intercept is higher indicating a higher defection rate on average. This reflects ACT's threshold status for the party vote.[11] For National alone, variation in campaign expenditure by electorate had no effect on defection. Comparing the major party votes, National voters were apparently under less pressure to defect than Labour's and National spent more on average in the electorates. Labour's voters were under greater pressure to defect, but that pressure was offset by Labour's campaign expenditures which may have been better targeted than National's.

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[11] Unlike the other parties, it was it was doubtful whether ACT would receive the necessary five percent to cross the threshold to gain parliamentary representation. In the end, ACT received 6% of the vote, New Zealand First (13%), Alliance (10%), Labour (28%) and National (34%).

5. Individual-level variables, measurement, and expectations

We hypothesize that strategic voters defect from a nonviable party candidate to a more viable alternative. We also hypothesize that, in most cases, strategic voters are likely to choose as their second choice an ideologically proximate party. For example, an Alliance voter who realizes that the Alliance candidate has little chance of defeating a National candidate will vote instead for the Labour candidate. But it would not be rational in Duvergerian terms for an Alliance voter to defect to another non-viable candidate. Survey data from the 1990 German elections indicate that just 61% of the electorate split in a strategic way.[12] Our aggregate-level estimates almost certainly overestimate the degree of strategic voting by not taking into account how voters split their votes. To address this issue, we must rely on individual level data.

Aside from being able to identify how voters split their votes, survey data provide a means of testing alternative hypotheses that could account for the pattern of defection evident in the aggregate analysis. Until now we have modeled party defections as being shaped entirely by instrumental Duvergerian rationality. But this explanation of vote splitting is not the only one which is relevant to the claim at issue. The willingness of voters to defect from their party when their party's candidate is nonviable might be the result of weak partisans being attracted to personally popular candidates, some of whom may be incumbents. These explanations have been found to be the prime determinants of split ticket voting in the US (Beck et al., 1992; Burden and Kimball, 1998). The potential for this personal vote increases under a system that distinguishes between a vote for a political party and a vote for a local MP. Because of the compensatory nature of MMP, voters aware of this may cast a vote for a candidate independent of their party preference. Even strong partisans may be tempted to defect in protest if they dislike their own party's candidate, knowing that their electorate vote is not likely to disadvantage their party's overall representation. In other words, defection from a party preference in the electorate vote may be rational in other terms than those defined in Duvergerian theory.

However, New Zealand voting choice is shaped much more by strong parties than by voter candidate preferences independent of party, but electoral districts are relatively small, with approx. 30,000 voters on average. Contact with members of Parliament is as high as that of congressmen in House districts in the United States in which electoral contests are highly candidate-centred (Vowles et al., 1995, p. 161). Although the influence of candidate preferences on vote choice under FPP was always overshadowed by partisan choice, there was some evidence of a personal vote (Cain et al., 1987). This seemed to be increasing prior to the adoption of MMP (Bean, 1992; Vowles et al., 1995). MMP can make possible a pure personal vote, because the party vote almost always determines the partisan composition of Parliament. Given this, voters have the luxury of expressing their preference for a candidate

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[12] Based on the authors analysis of data from the 1990 German Election Study. Voters who supported either the Christian Democrats or the Social Democrats in the electorate but choose to support another minor party with their second vote are assumed to have split in strategic way.

to represent them personally, regardless of their party. Such a choice could be exercised strategically, but according to the affective model, candidate-centred voting is expressive and non-strategic.[13] We base our subsequent analysis on this hypothesis.

6. Data and measures

We rely on data drawn from the 1996 New Zealand Election Study which administered a post-election mail survey conducted among a very large random sample of New Zealand citizens distributed across all 65 electoral districts (see Vowles et al., 1998).[14] This makes possible the use of survey data to address questions hitherto largely confined to aggregate data alone using ecological inference. Initially, we ran separate individual-level models by party vote for the five parties analysed above, modeling defection from the party vote as in the aggregate-level model. Campaign expenditures and vote waste margins were regressed against defection and non-defection (that is, a straight or a split vote). Parameter estimates for all five almost exactly paralleled those in the comparable aggregate data models. Similarity between the separate models indicates a model encompassing all voters for significant parties to be the optimal approach.

Party viability is measured by variables derived from the district-level data for the spending and the 1993 vote waste margin of the party for which a respondent cast their party vote.[15] Given the crowded fields in many New Zealand electorates, and the fact that multiple parties had credible candidates in numerous electorates, determining when to defect might depend on political awareness as well as a significant amount of cognitive skill. To measure cognitive resources we use an additive scale constructed from three political information items.[16] The scale ranges from zero to three, with the highest value indicating that a respondent answered all questions correctly. To test whether knowledgeable people are more likely to vote strategically we include an interaction term between political knowledge and candidate spending. If this interaction is significant, this may indicate that the transmission of information about the Duvergerian strategic situation in each electorate is through party expenditure and, perhaps, wider party activity. If splitting is the domain of the uninterested, confused, and politically ignorant, the main effects of political knowledge should be positive and significant. If the main effects are negative, then this

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[13] We note that Bawn interprets personal voting in Germany as rational (Bawn, 1999, pp. 491–497). In large part, this is because she defines strategic voting in non-Duvergerian terms (p. 488), whereas our definition is more strictly Duvergerian.

[14] Data from the electorate of Ohariu–Belmont was excluded as National did not run a candidate and advised its voters to support the United party candidate.

[15] As explained earlier, since ACT did not stand candidates in the previous election, the vote waste margin is calculated as the difference betwen zero and second place except for the electorate of Wellington Central, where several highly publicized pre-election polls indicated that the ACT candidate was viable. For that electorate, the ACT waste vote margin is entered as 0.

[16] These questions are "There are 99 members of parliament" (false), "Cabinet ministers must by MPs" (true), and "The New Zealand parliament has never had an upper house (false)."

would suggest that voters who are unsophisticated are more likely to cast a straight vote, supporting the "sticky voting" hypothesis. On the other hand, a positive coefficient on the interaction term would indicate that knowledgeable persons are more likely to vote strategically. We also test whether lack of knowledge about the compensatory nature of the system (or, less likely, perceptions about overhang) dispose people to split their votes. Those who think the electorate vote is most important in determining which party gets the largest number of voters, or think that the party and electorate votes are equally important, score one, and those who think that the party vote is most important score zero.

As tests of the affective model we rely on measures of partisan attachment and candidate preference. Whereas the strategic model assumes that partisanship should not affect strategic calculations, the affective model assumes that strong partisans are less likely to defect than weak partisans. Strength of partisanship is measured on a scale that ranges from zero to three, with the highest value indicating strong partisanship. We also use a dummy variable to take into account multiple party preferences, derived from scales measuring likes and dislikes by party. To measure candidate effects, we use the value of the most preferred candidate that ranges on a scale from one to five.[17] An interaction term takes into account whether the respondent expressed a stronger preference for a candidate of a party other than their preferred party, as represented by their party vote.

Using logistic regression, we estimate two models. The first model predicts the likelihood of defecting from the party vote by casting a split vote. Our other model excludes straight voters by focusing on how voters split their votes. In this model, we consider the likelihood of voters splitting their votes by defecting from a nonviable party to one of the two top vote getters in their electorate. Our expectation is that sophisticated voters are likely to behave strategically by defecting to a viable alternative. We have also narrowed our classification of strategic voting by seeking to explain only those voters who defected to a viable candidate that is closest to them on the ideological scale.[18] Thus a person who casts a party vote for Alliance (a smaller party on the left) and defects to Labour satisfies the more stringent criteria imposed in this model. If however the Alliance voter defects to the National candidate, which is to the right of Labour, that voter is assumed not to have acted strategically. Similarly, a person who gives their party vote to ACT (a smaller party on the right) but defects to Labour is assumed not to have behaved strategically. We also anticipate that persons who split their votes between ideologically compatible parties are likely to have a stronger attachment to political parties than persons who split between ideologically incompatible parties. Votes for smaller parties other than the five so far discussed are excluded from the analysis.

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[17] The question asked: "Regardless of the parties they were standing for, how did you feel about the personal qualities of the candidates who stood in your electorate?". Respondents were asked to rate the candidates of the seven most popular parties on a 5 point Likert scale ranging between "strongly like" and "strongly dislike".

[18] The scale assumes that voters place the parties from left to right in the following way: Alliance, Labour, New Zealand First, National, ACT.

7. Results

Table 3 displays the results of the split voting model. Education and the main effects of political knowledge are both positive and significant, indicating that sophisticated voters are more likely to split their votes or alternatively that unsophisticated voters are more likely to cast straight votes, consistent with the sticky voting hypothesis. Those who do not understand the compensatory nature of the system or who consider overhang or the importance of individual electorate contests in a threshold context are no more or less likely to split their votes than others.

After controlling for the effect of the individual-level variables, the vote waste margin remains significant and the probability estimates indicate a very large effect. Regardless of the degree of political sophistication, voters are more likely to desert their party when the party's candidate was not electorally viable in the previous election. While the main effects of campaign expenditure do not register as significant, there is a significant interaction between political knowledge and campaign expenditures. On the surface, the overall effect is small, but to more fully display it, Fig. 1 displays the derived probabilities for each level of political knowledge. The interaction is positive, indicating that voters with greater political knowledge are more likely to behave strategically by defecting from nonviable parties. The

Table 3
Estimating the likelihood of casting a split vote: logistic regression coefficients[a]

	Coefficient	s.e.	Probability of splitting	
			Minimum	Maximum
Strength of partisanship	−0.23**	(0.04)	0.31	0.19
Multiple preference	0.68**	(0.11)	0.26	0.40
Education	0.10**	(0.03)	0.20	0.32
Political knowledge	0.30*	(0.12)	0.18	0.35
Party vote is not the most important vote	−0.09	(0.10)	0.33	0.31
Candidate intensity for another party	0.57**	(0.03)	0.19	0.80
Candidate intensity	−0.22**	(0.04)	0.44	0.21
Party spending (in $1000)	0.02	(0.01)	0.28	0.24
Party spending×political knowledge	−0.02*	(0.01)	0.20	0.21
Previous vote wastage	0.05**	(0.00)	0.26	0.70
Constant	−1.36**	(0.29)		
Cases correctly classified	79.36%			
−2 Log Likelihood ratio	3912.613			
Nagelkerke pseudo R^2	0.35			
Number of cases	3159			

[a] Source: New Zealand Election Study (1996). Standard errors are in parentheses. Probability of splitting given minimum and maximum value of independent variable holding all other independent variables constant at their means. Dummy variables held constant at their mode. **$p<0.01$; *$p<0.05$.
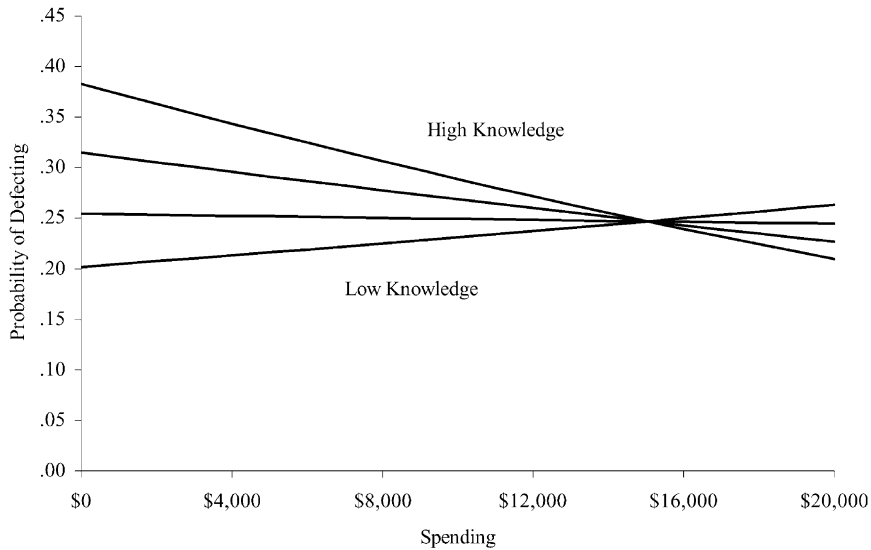
Fig. 1. Effects of political knowledge and candidate expenditures on defecting.

figure reveals that the effect is greatest at low levels of spending. Politically knowl-edgeable voters are more likely to defect from their party's candidate when the party does not invest resources into the campaign. Specifically, the probability of splitting for a voter with the highest level of political knowledge whose party candidate spends nothing on advertising is about twice as great as a voter whose party candidate is viable in the electorate. At low levels of political knowledge, campaign spending has virtually no effect on the probability of defecting. When parties invest the maximum amount of money in their candidates, the differences among those with various levels of political knowledge are not substantial, though the most sophisti-cated voters have the lowest level of defection.

We also find support for the affective model. Those expressing intense preferences for their preferred party candidates are more likely to stay with their party regardless of its electoral prospects, while those preferring a candidate of a different party are likely to be pulled away from their party. As the expected probabilities in Table 3 show, the effect of candidate appeal on defection is very strong and well exceeds that of partisanship. The willingness of voters not to vote for their preferred party's candidate if they favour another candidate more is consistent with the compensatory effects of MMP which allow voters to vote for any candidate with very little risk to their preferred party's success in gaining seats overall. Voters with equal prefer-ence for more than one party are about twice as likely to split as those with a single preference. As for party identification, strong partisans are less likely to desert their party than weak partisans, consistent with the research on ticket splitting in the US (Beck et al., 1992). We anticipated that weak partisans are likely to be more suscep-tible to candidate effects, but these interactions were not significant so we dropped them from the model.

So far these results suggest that voters defecting from their party vote did so for reasons consistent with both the strategic and affective models. An analysis of how voters split their votes suggests that most did so in ways that expressed their preferences. Two thirds of all split voters in the sample choose ideologically proximate parties as defined in the most restrictive sense possible. 39% were Duvergerian, in that they defected from a nonviable party to one of the two most competitive candidates in the electorate. A third of the split voters satisfied both of these criteria. Those who defected from a less viable party to the most competitive ideologically proximate party define the dependent variable used in the model in Table 4.

As one would expect, those with higher levels of education are more likely to split in a strategic way though the coefficient for political knowledge is not significant. Those who cast a party vote for the two small parties at either end of the ideological spectrum, ACT and the Alliance, have the highest probability of casting a strategic vote that is ideologically compatible with their party vote. In contrast, Labour voters were less likely than National voters to cast a vote in this way. Finally, split voters who expressed a strong candidate preference are also likely to behave in a strategic way. It is also worth noting that strength of partisanship and equal preference are not significant, indicating that persons with weak party ties or those with more for multiple parties than one single preference are no less likely to behave strategically.

Table 4
Likelihood of defecting to a competitive ideologically proximate party: logistic regression coefficients[a]

	Coefficient	s.e.	Probability	
			Minimum	Maximum
Strength of partisanship	−0.11	(0.07)	0.34	0.27
Multiple preference	−0.06	(0.16)	0.31	0.29
Education	0.09*	(0.04)	0.23	0.37
Political knowledge	−0.01	(0.08)	0.31	0.30
Candidate intensity for another party	−0.03	(0.04)	0.31	0.28
Candidate intensity	0.21**	(0.07)	0.17	0.37
Labour	−0.77**	(0.19)	0.31	0.17
New Zealand First	0.91**	(0.20)	0.31	0.52
Alliance	2.11**	(0.23)	0.31	0.78
ACT	2.49**	(0.25)	0.31	0.78
Constant	−1.79**	(0.35)		
Cases correctly classified	73.49%			
−2 Log Likelihood	1253.198			
Nagelkerke pseudo R^2	0.24			
Number of cases	1143			

[a] Source: New Zealand Election Study (1996). Standard errors are in parentheses. Probability of splitting given minimum and maximum value of independent variable holding all other independent variables constant at their means. Dummy variables held constant at their mode. **$p<0.01$; *$p<0.05$.

8. Discussion

Our results indicate that a simple assumption of voter confusion cannot account for the comparatively high level of split voting in New Zealand's first election under MMP. Rather than splitting for unknown reasons, voters were guided by the electoral prospects of their party's candidate and their preference for specific candidates. Both campaign expenditures and perceptions about which candidates were more viable provided cues to voters about the viability of their party's candidates. Defections from the party vote took place as sophisticated voters found their first preference for a party's candidate frustrated by the realization that their electorate vote would be wasted.

Voters who defected because their party's candidate was less viable were likely to choose more competitive candidates that were closest to them on an ideological scale. While voters with weak partisanship and multiple preferences were more likely to defect, they were just as likely to vote in a strategic way as those with strong party ties and single preferences.

The literature on mixed systems has not hitherto found great evidence for voter sophistication and high levels of informed strategic voting. Why do we find more evidence in New Zealand? Split voting reaches levels as high as those recorded in New Zealand in a few new democracies with non-compensatory systems, such as Russia where between four and five out of ten split their votes in the 1993 and 1995 Duma elections. Russia's high level of split voting, however, is attributed mainly to its emerging party system which remains in an embryonic state (McAllister and White, 1998). In contrast, New Zealand is a mature democracy, making comparisons with Germany more useful. We suggest that the substantially higher level of split voting in New Zealand can be attributed to strategic incentives and stronger voter perceptions of candidates. In Germany, the dominance of the two main parties in electorate contests offers voters relatively limited strategic opportunities. In comparison, New Zealand's more crowded electoral landscape produced incentives for more voters to behave strategically or, at least, to express preferences which, while affective, are not biased by confusion or misunderstanding. Lack of understanding of the compensatory nature of the system, if it had any effects at all, may have underpinned some Duvergerian strategic voting. But if voters misunderstood the system, in most cases this did not result in behaviour and outcomes inconsistent with their preferences. As for the future, if New Zealand's party system develops into a two-party dominance in the electorates like that of Germany, we might expect levels of vote splitting to be reduced. On the other hand, with the increasing importance of overhang in German federal elections, and the recent role of electorate victories allowing party representation via the threshold, it may be that the New Zealand experience could provide some food for thought in Germany.

Appendix A

Campaign expenditures by party (1996)

	Minimum	Maximum	Mean	SD	Total
National	$1152	$19,926	$14,730	$4286	$942,713
Labour	$679	$19,994	$10,242	$4872	$665,748
Alliance	$183	$18,363	$8286	$4609	$538,570
New Zealand First	$303	$19,864	$8514	$4965	$553,426
ACT	$0	$19,569	$5689	$4647	$352,735

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