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Incumbent and challenger campaign spending effects in proportional electoral systems the Irish Elections of 2002

Kenneth BENOIT
Singapore Management University, kbenoit@smu.edu.sg

Michael MARSH

INCUMBENT AND CHALLENGER CAMPAIGN SPENDING EFFECTS IN PROPORTIONAL ELECTORAL SYSTEMS: THE IRISH ELECTIONS OF 2002 *

Kenneth Benoit
Trinity College, University of Dublin
kbenoit@tcd.ie

Michael Marsh
Trinity College, University of Dublin
mmarsh@tcd.ie

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Abstract

Positive effects of campaign spending on electoral outcomes have been found in several comparative, multiparty contexts (e.g. Britain, France, Japan, and Australia) but very few of these systems use proportional representation (PR). The handful of studies that have examined spending effects in multi-party elections (e.g. Brazil, Flanders) have found that incumbent spending is no less effective than challenger spending, a finding that runs contrary to the vast bulk of empirical literature drawn from single-member district contexts. Our study reexamines incumbent-challenger differences in spending effects under an intermediately proportional electoral system: the Single-Transferable Vote (STV) rules as used in Ireland. Using spending and electoral data from the Irish general elections of 2002 to test for both inter- and intra-party electoral gains from campaign spending, we find a positive and statistically significant relationship between spending and votes. Not only do candidates that spend more win more votes, but outspending one's rivals means winning more of the vote share. Spending more also directly increases a candidate's chance of winning a seat. Finally, contrary to previous results from preferential elections using PR, we find that incumbent spending is considerably less effective than spending by challengers from other parties, but no less effective than spending by challengers from within a candidate's own party.

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* Mailing address for both authors: Department of Political Science, Trinity College, Dublin. Kenneth Benoit (**corresponding author**) is Professor of Quantitative Social Sciences, tel. +353 1 896 2491. Michael Marsh is Professor of Comparative Electoral Behaviour, tel. +353 1 896 1070. We thank Matthew Kerby and Liam Weeks for research assistance. A full replication dataset is available from the authors. This one of several joint papers on campaign finance by the authors, and the ordering of their names reflects alphabetic convention. Kenneth Benoit thanks the Irish Research Council for Humanities and Social Sciences for support in 2006-2007 under the Government of Ireland Research Fellowship scheme.

INTRODUCTION

The relationship between campaign spending and electoral success has been the subject of much attention in political science, focusing mainly on studies of the US Congress (e.g., Erickson and Palfrey, 1996; Green and Krasno, 1988; Jacobson, 1980, 1985, 1990) but extending increasingly to other national contexts. While scholars continue to debate certain issues, such as whether differences exist in spending effects between incumbents and challengers (see Stratmann 2005), the question is no longer *whether* money matters, but only how *much* it matters (Cox and Thies 2000, 40). More specifically, previous research into campaign spending effects has yielded two main findings. First, spending is positively linked to the electoral success of candidates, although previous studies have investigated this effect predominantly in single-member district systems such as the United States, Britain (Johnston and Pattie 1995), Canada (Carty and Eagles 1999; Eagles 1993), Australia (Forrest 1997; Forrest, Johnston and Pattie 1999), and France (Palda and Palda 1998). Second, most studies have found that incumbent spending is less effective than challenger spending (Abramowitz 1988, 1991; Ansolabehere and Gerber 1994; Green and Krasno 1988; Jacobson 1990; Denver and Hands 1997), with some (e.g. Jacobson 1985, Ansolabehere and Gerber 1994) even documenting a zero return on incumbent spending. The argument, first elaborated by Jacobson (1978, 479), is that incumbents are already "saturated" with the sort of recognition brought about by campaign spending and hence additional spending adds little to the voters' knowledge or support. In addition, incumbents' past success at winning large vote shares makes it more difficult for their campaign activities to generate votes, something that does not hold for challengers who start with much lower levels of support (Denver and Hands 1997).

Recent extensions of campaign spending studies to multi-member district systems, however, have found no difference between spending effectiveness for challengers versus incumbents. In Brazil, where elections are held in large PR districts with open lists, Samuels (2001) found that incumbent spending was just as effective as challenger spending in yielding electoral gains. In legislative elections in Flanders using a preferential PR list system, furthermore, Maddens (2006) found a similar lack of difference, leading to the conclusion that equal incumbent and challenger spending effects are "typical" for open list PR systems. Finally, Cox and Thies's (2000) analysis of Japan's single-non-transferable vote elections in multi-member constituencies found no marked differences between challenger and incumbent effects. The puzzle, then, is why incumbent spending should be less effective in single-member district systems, but equally effective in preferential, multi-member settings. Incumbents in multi-member, preferential systems still benefit from name recognition, networks, political experience, and the momentum of past success that should give them more of an advantage to start with, while challengers can only purchase these benefits through hard, expensive campaigns. Voters considering supporting a challenger from list systems are presumably no less reluctant to cast their votes for candidates about whom they know little, and hence challenger campaign activities in proportional systems as well should be expected to show a much more direct and responsive relationship to electoral success. The question remains open then, as Samuels (2001, 572) puts it, as to whether (and how) the finding of less effective incumbent spending effectively "travels" from the United States to comparative contexts.

Our study directly picks up this question by comparing incumbent and challenger spending effects in an electoral context where no previous study has examined national elections: Ireland's STV-based system used to elect the *Dáil*, the 166-member Irish lower legislative chamber. The Irish setting provides an interesting intermediate case between

single-member district elections and larger multi-member systems (such as Flanders, with an average district magnitude of 17, and Brazil where district magnitude ranges from 8 to 70). Under the "semi-proportional" (Lijphart 1986) STV rules, parties organize the electoral contest yet voting is for candidates, making it possible to test for spending effects from both party and candidate perspectives. In addition, Irish constituency sizes – from three to five – are large enough to support a multiparty system yet small enough to make it possible to observe meaningful direct competition among multiple candidates. Finally, the factors which Samuels (2001, 574-5) attributes to the lack of challenger and incumbent differences in Brazil – namely the lack of incumbent access to campaign resources, the high number of strong challengers, and the presence of significant intra-party competition – both vary across constituencies and can be measured and controlled for in the Irish case, allowing for incumbent and challenger spending effects to be isolated and compared while controlling for confounding influences.

EXPECTATIONS FOR SPENDING EFFECTS IN STV

Our chief objective is to estimate the degree to which spending affects electoral success, and to determine whether these effects differ for incumbents. We expect for many reasons that the positive association between spending and votes found in other contests will also hold in Irish elections. Benoit and Marsh's (2003, 2004) work examining spending effects in STV elections to Irish city and county councils found that marginal increases in candidate spending were positively related to constituency vote share as well as to the probability of winning a seat. While the stakes of office were lower in that election and the sums spent commensurately smaller, their findings set a prior expectation that in STV, spending does matter. Our analysis seeks to confirm this relationship in national STV elections as well as to focus more precisely on the differences between incumbents and challengers.

Regarding STV elections, there are many sound reasons to expect, as Jacobson (1978) first found, that challengers might need to spend more to gain additional votes than will incumbents. Incumbent legislators will have used their time since the previous election (in the Irish case, in 1997) ensuring that their press releases and pictures appear regularly in local newspapers, something challengers will have found difficult to accomplish. Incumbent legislators, as well candidates serving on local councils (an office held by 42 candidates in 2002), will also have enjoyed numerous constituency contacts as part of their office duties. As widely documented in a number of other contexts, therefore, we might also expect in Ireland that incumbents enjoy certain fixed advantages from their positions, advantages and exposure that challengers will only be able to effect through campaigning. Success rates among incumbent candidates seeking re-election are typically 82% in Ireland (Gallagher 2005, 526), less than the US Congress where it has been estimated that incumbents gain at least a five percent average vote advantage just for being incumbents (Alford and Brady 1993; Erikson 1972; Gelman and King 1990), but considerable nonetheless. Incumbents control resources worth tens, if not hundreds, of thousands of euros every year, and these resources are inevitably used for purposes of re-election. In light of the enormous advantage enjoyed by incumbents in being able to use their offices for campaigning purposes, states Jacobson (1978, 470), it is not surprising that campaign spending should matter more to challengers than to incumbent candidates.

> Incumbents…saturate their districts with information about themselves, their virtues and services, before the formal campaign begins. Further campaigning thus produces, at best, very modest additional gains in support. Challengers, in contrast, typically begin the campaign in obscurity. Because voters are demonstrably reluctant to vote for candidates they know nothing about, challengers have a great deal to gain by making themselves better (and, of course, more favorably) known to the electorate. Their level of campaign activity…thus has a strong influence on how well they do at the polls. (Jacobson 1990, 334-5)

Nearly identical arguments have been advanced for why incumbent spending by British MPs appears less effective than spending by their challengers (Pattie, Johnston, and Fieldhouse 1995, 975). In the Irish context, it is perfectly reasonable to expect similar differences to hold between the effectiveness of incumbent and challenger spending.

We also expect that in STV elections, as found in numerous previous studies (e.g. Abramowitz 1991; Erikson and Palfrey 2000), levels of candidate spending should be driven at least partly by the perceived competitiveness of the contest. Particularly when they are incumbents, rational candidates tend to spend heavily in campaigns only when facing a threat to their seat from strong challengers, a phenomenon originally acknowledged by Jacobson (1978). This is something that we not only devote more attention to below, but also demonstrate precisely by linking spending to data on the *ex ante* marginality of Irish constituency contests.

The expectation that campaign spending is positively related to electoral success under the STV system gives rise to four observable implications. The first is the simplest: If spending positively affects a candidate's electoral result, then we expect that higher levels of absolute spending, as measured in euros, is associated with receiving more votes. Second, if spending brings electoral success, then we expect candidates who spend more than their rivals will also gain more votes than their rivals. Accordingly, we also examine the relationship between a candidate's percentage of total spending in the candidate's constituency and votes for the candidate, measured as both total votes and vote share. Third, to test whether spending affects votes in competition with candidates from one's own party, we examine the link between spending share within one's own party and share of the party vote. Examining spending's effect on the intra-party vote not only provides another observable implication of spending effectiveness, but it also allows us to test whether spending by one candidate does not also "contaminate" the electoral results by also boosting

the votes of his or own own-party running mates. To the extent that individual spending by candidates can be observed to increase the candidate's own share of the party vote—necessarily at the expense of his or her own-party running mates, since the focus is on own-party vote *share*—then we can conclude that the direct benefits of spending accrue to individual candidates and not their parties. Finally, if spending more has a positive electoral effect, it should also help candidates actually win seats. As a fourth test of spending effects under STV, therefore, we also examine the link between spending more and the probability that a candidate will be elected.

Before describing the data, model, and results from this analysis, we provide some brief background on the Irish STV electoral system and the Irish electoral context.

THE SINGLE-TRANSFERABLE VOTE SYSTEM AND IRISH DÁIL ELECTIONS

The 2002 elections to the Irish *Dáil*—the lower house of the Irish parliament which appoints the government—were the first to require election spending disclosure. The newly adopted regulations required candidates itemize all expenditures incurred in the three weeks between the government-issued polling day order on April 25 and Election Day on May 17, 2002. The regulations also imposed spending limits on candidates at the relatively paltry level – by international standards at least – of just over €38,800.[1]

Dáil Eireann consists of 166 *Teachtaí Dála* or "TDs", elected from 42 multimember constituencies of between three and five seats.[2] Ireland is one of only two states (the other is Malta) to use the system of the Single-Transferable Vote (STV) to elect its national parliament, an electoral system which involves voters ranking candidates on the ballot and these ranks being transferred from one candidate to another during the counting, as candidates are elected or dropped from successive counts.[3] Consequently, constituency election outcomes depend not just on first preference votes, but also frequently on second,

third, and lower-order preference votes. Indeed, very few candidates are elected on the first count – only 24 (out of 463) in 2002. In one constituency it took 16 counts to award all seats, although the median TD in 2002 was elected on the third count. In all, about one in three votes were transferred at some point, underscoring the importance of lower-order preferences (Gallagher 2003).

The larger parties typically field more than one candidate in each constituency; as a general rule, one more than the number of seats they expect to win. As a result, incumbents from the larger parties will normally face at least one challenger from their own party, as well as incumbents and challengers from other parties. In Irish elections, furthermore, it is not uncommon for incumbents to be unseated by competitors from their own parties, especially within the two largest parties where competition among candidates tends to be fierce. Within party, therefore, choice is necessarily candidate-centered, but even the competition between parties may be carried by strong individual candidates overcoming voters' partisan tendencies.

Campaign regulations require candidates and their agents to furnish all details of income and expenditure. However, a potentially significant loophole in the Irish campaign spending regulations is the limitation of expenditure controls (though not the scrutiny of income) to the relatively short official campaign period of three weeks. Spending between the elections, such as setting up a fully staffed constituency office, is also not subject to any controls. Parties and candidates can spend more or less as much as they like before the election is called, and they do. This gives an advantage to a party that sets the date of the election since it can time its pre-election spending to best effect.[4] If – as it has been argued for the U.S. Congress (Mayhew 1974) – that for most elected legislators the campaign never ends, then it is quite plausible that the real campaign occurs throughout the inter-election period by exploiting office benefits available to incumbent parties and legislators. It is also quite likely,

however, that spending recorded during the official campaign is a direct indicator of unrecorded spending that takes place before the campaign. In any case, current regulations allow us to observe only that which is spent and declared during the official campaign period – a situation shared by every other country where disclosure applies to a limited period.

Overall, we expect the study of Irish elections to provide a valuable ground for extending research into the political efficacy of campaign spending. First, STV as practiced in Ireland represents a highly competitive, multi-party, multimember context that can be considered fully or at least partly proportional, thus adding to our currently sparse knowledge of campaign spending effects in such systems. Second, because voting in STV remains fundamentally centered on candidates, rather than the second-degree candidate focus that comes from voter ranking of candidates on party-centered ballots in open list systems, it provides a better and more direct test of spending effects in preferential voting systems. Because STV allows voters to rank all candidates, for instance, it permits the observation of spending effects on lower-order preferences – something unavailable in the Japanese single-*non*-transferable vote – as well as inter-party differences in rankings from the same voters – something unavailable in open-list PR systems such as Brazil or Flanders. Finally, the availability of measures for candidate quality, incumbency advantages, and the closeness of constituency competition provides means to control for factors which should affect the difference in spending effects for incumbents and challengers. In short, a study of campaign spending in Ireland's STV legislative elections presents a rich potential contribution to the study of campaign effectiveness, as well fertile ground for adding to the ongoing debate about the differences between challenger and incumbent spending effects.

DATA

Our dataset of candidates elected to the 166-seat Irish lower chamber consists of electoral and demographic information gathered on 463 candidates competing.[5] Each constituency had a magnitude of between 3 and 5 seats, with a mean electorate of 73,506. The Appendix details the number of candidates by party, broken down into 138 incumbents and 326 challengers, also listing the number of seats won.[6] The previous elections had occurred in 1997. Going into the election *Fianna Fáil* held 76 seats (one lost in a by-election since 1997) and the PDs four, with their minority government securing support from four independents. In the 2002 election, the typical candidate received between just 8 and 9% of the first preference votes in his or her constituency. While first-round preference votes do not tell the whole story under STV, they do emerge as the single greatest predictor of whether a candidate won a seat, something accomplished by just over 35% of the candidates in 2002. These response variables are significant for two reasons. First, our primary measure of first-round preference votes is small in absolute terms, and we would expect therefore that small shifts in this outcome, even along the order of a few percentage points, to be quite significant in substantive terms. Second, with over a third of all candidates succeeding in their bid to be elected, we also expect the outcome variable of winning a seat to be potentially very responsive to changes in spending.

Our data on spending is provided by the Irish Standards in Public Office Commission, based on candidate declarations following the 2002 elections. Expenditure falls under eight headings: advertising, publicity, election posters, other election material, office and stationary, transport and travel, market research (which includes any poll within 60 days of an election), and hiring campaign workers.[7] The Appendix details spending by the average candidates from each party. Most thrifty from established parties were the candidates from the Greens who on average spent just under €7,000 each; most profligate were those from the

PDs who spent over €23,000 each. Candidates from the governing parties, FF and the PDs, spent much more than candidates from the opposition. Incumbents spent significantly more than challengers, almost twice as much on average. What is perhaps surprising in the Irish case is that even with the (by international standards) very low spending limits, most candidates spent well below the permitted limits. For most parties, spending by the median candidate was only about 50% of the legal limit (Labour and *Fine Gael*) or even less (*Sinn Fein*, the Greens, and Independents). Observed spending by candidates, in other words, varied significantly and was not censored by the legal spending caps, a healthy result from an analyst's point of view, as long as the causes of this variation are exogenous to the political outcomes we seek to attribute to spending. As shown in previous studies, however, not all of the determinants of spending are exogenous to political outcomes, and therefore it is necessary to control for this simultaneity between spending and electoral outcomes before we can adequately estimate how much impact the former has on the latter, a matter we discuss in the next section.

WHAT DRIVES VARIATION IN CANDIDATE SPENDING?

In Irish elections, individual candidates make spending decisions, and while legal maximums place a cap on total spending, these ceilings are seldom reached. As a result, spending patterns by candidates exhibit significant variation. Why might one candidate spend more than another?

The first reason relates to supply: candidates with access to more funds can be expected to spend more. Incumbents in particular are expected to spend more, especially given the fact that they must include the perquisites of their office in their declared expenditures. Accordingly, we would expect that incumbent candidates, as well as those occupying special offices, such as ministerial posts or additional extra-parliamentary positions such as

Senatorial or local council office, will exhibit higher rates of spending. Even for candidates who are not incumbents, furthermore, we expect that being a member of one of the two governing parties will also contribute positively to a candidate's ability to raise and spend money in the campaign.

A second set of explanatory factors pertains to demand: candidates will spend as the need arises. The general argument is that particularly for incumbents, the decision to spend is a response to challenger spending and to the perceived safeness of the seat. Evidence from many contexts supports the notion that candidates spend more when outcomes are more tightly contested. Studies of British (Johnston and Pattie 1995), Canadian (Carty and Eagles 1999; Eagles 1993) and Australian elections (Forrest 1997; Forrest, Johnston and Pattie 1999) all concluded that spending was targeted at marginal constituencies. The same strategic thinking might be expected of individual candidates under STV: those who feel safe and those who feel they have no chance will spend little, and those who think the marginal spending will make the difference to their election will spend most.

For the estimation of spending effects, this problem of reactive or *endogenous* spending creates a specific problem: that of biasing the estimates of the spending effects by attenuating its true magnitude. To avoid the problem of underestimating the true effect, the most common strategy has been to use instrumental variable to provide exogenous proxies for observed spending. Variables that have been applied as instruments include lagged spending (Green and Krasno 1988, 1990; Gerber 1998), previous political office held by challengers (Green and Krasno 1988), challenger wealth (Gerber 1998), state population (Gerber 1998), and independent forecasts of the expected closeness of the outcome (Abramowitz 1991; Erikson and Palfrey 2000). Other methods to avoid endogeneity bias include Erikson and Palfrey's (2000) tests of spending effects in only close races, where both incumbent and challenger are expected to spend heavily. In a different national context, Cox and Thies (2000) used various

district-level characteristics as exogenous determinants of candidate spending in a two-stage regression. In the Japanese context examined by Cox and Thies, median constituency magnitude was five, a threshold at which they found the problem of endogeneity bias to disappear, perhaps because in larger constituencies no candidates' seats could be seen as truly "safe." Median constituency size in Irish national elections, by contrast, is four, with some constituencies clearly marginal and some highly visible incumbents clearly occupying safe positions. This same quality, however, also means that information on marginality was available in the national election context that did not exist in the local context.

In this study we draw on such information, employing instruments for total spending in an attempt to represent the marginality of the contest that might have motivated candidates to spend in response to perceived electoral need, in particular incumbents threatened by strong challengers. Available exogenous instruments linked to spending are far from perfect, however, so we also reformulate the problem as one of relative spending, as we explain further below, in an attempt to mitigate the possible consequences of reactive spending. For our estimations that do use instruments, however, we draw on measures of party strength as well as some candidate characteristics to model spending decisions, and then use the predicted spending to estimate spending effects on the vote using two-stage least squares (2SLS).[8] Although campaigning in Ireland centers around candidates, voting remains highly structured by parties (Marsh 2007; Marsh et al 2008); for these reasons, a measure of party strength from the previous election should operate much as expected from the spending literature drawn from the US context. Previous party strength is calculated as the vote won by the *party* in the previous general election (1997). This is measured in terms of the number of quotas won by all of a party's candidates in a constituency, where the quota refers to the number of votes sufficient to win a seat.[9] Candidates may also spend proactively, of course, based on their overall quality as candidates and their ability to raise funds. This type of

spending, caused by high caliber candidates both attracting and spending more money and also winning more votes, has prompted several previous studies to control for "candidate quality" using factors such as the prior political experience, previous vote or vote margins, other measures of leadership or electoral prospects designed to measure this difficult quantity (e.g. Moon 2006, Cox and Thies 2000). Since these works and others have found that previous electoral results and previous office holding influence candidates' fund-raising ability, and hence spending, we have controlled for whether candidates also held separate offices such as Senatorial or local Councillor positions. Finally, Since candidates might also spend more in denser, larger constituencies, and hence we include as a dummy variable for the much denser constituencies in the Dublin area as well as a measure capturing constituency size, operationalized as the size of the electorate (in 1000s).

[Table 1 about here]

Table 1 indicates that these variables exert an effect on spending generally as expected, with candidates from parties who did well in the previous election spending more, and candidates who held office as local Councillors also spending significantly more. Although the coefficients for Senatorial office and Dublin constituencies were also positive, neither was statistically significant. Constituency size appears to have no effect in determining absolute spending levels. The main conclusions to be drawn are that spending can be explained by a series of variables that are arguably exogenous to the votes-spending relationship, at least where individual candidates are concerned. In the regressions of votes on total spending that follow, we use the variables in Table 1 as instruments for spending.

RESULTS: QUANTIFYING THE EFFECTS OF SPENDING

Our specification uses a combination of two-stage least squares (2SLS) model to control for endogenous spending, and a reformulation using relative spending designed to avoid the

problem of endogenous spending and permit estimation without instruments using OLS. For the 2SLS models, we estimate two structurally related equations:

$$VOTES_i = \beta 0 + \beta 1*(Spending) + \beta 2*(Incumbency)*(SPENDING_i) + \beta 3*Incumbency + \varepsilon_I \quad (1)$$

$$SPENDING_i = \gamma 0 + \gamma 1(previous\ party\ strength) + \gamma 2(size/electorate) + \gamma 3(Dublin) + \gamma 4(Senator) + \gamma 5(Councilor) + \nu_I \quad (2)$$

observed for each candidate *i*. Because each candidate competes against others in constituency contests, we also use a variant of the Huber-White correction for heteroskedasticity that relaxes the assumption of error independence within the 42 electoral constituencies where candidate data is observed.

Our key coefficients of interest are β1, which represents the average change in the vote expected from spending one euro more, controlling for all additional factors that might also affect the ability of spending to influence the vote; and β2, the additional amount of vote change from spending expected for incumbent candidates. If spending effects under STV are similar to most findings from single-member constituency contexts, then β2 will be negative and statistically significant; if on the other hand the results follow examples from other preferential, multi-member contexts such as Brazil, Flanders, or Japan, the estimates of β2 will be indistinguishable from zero.[11] In all analyses, votes are measured as first preference votes, and in the estimation that uses 2SLS, actual votes are instrumented using predicted votes, estimated as per Table 1 and using 2SLS to estimate the structural parameters of Equation 1. The γ parameters in Equation 2 simply represent the effects of the political factors explained in the previous section on levels of spending. Estimated in Table 1 as discussed above, the parameter estimates from Equation 2 showed that spending can indeed be explained as a function of incumbency and prior political party strength.[12]

Spending Effects on Inter-party votes

The first way to think of the relationship between spending and votes is the simplest: How many additional votes should a candidate receive by spending one additional euro in the campaign, *ceteris paribus*? If spending does affect electoral success in the way that we expect, then we should observe a statistically significant and positive relationship between spending and votes received.

[Table 2 about here]

Table 2 shows the results from several sets of estimates, with model (1) pertaining to the effect of spending in euros on total (inter-party) votes. The results are exactly as expected: Spending is positively related to votes won, and this relationship is significant both statistically and substantively. For challengers, spending one additional euro will result in an additional 0.28 votes on average, with all other factors being held constant. If we consider the inverse of this value as $.28^{-€1}$=€3.57, then our findings place the cost of one additional vote at a little over three and a half euros. As Table 3 indicates, this makes votes in Ireland quite inexpensive by comparative standards, where the prior estimates from the US Congressional case indicate it costs at least $24, or more than six times more than in Ireland, to "buy" an additional vote for a challenger.

For incumbents, spending is less efficient in winning additional votes, a finding indicated by the negative, statistically significant coefficient of -0.10 for the interaction term between incumbency and spending. Contrary to previous findings from Brazil and Flanders, we found direct evidence of less effective spending for incumbents, even when controlling for the effect of reactive spending. The instruments of electoral competitiveness (measured by party strength in the previous election), candidate quality (measured by previous political offices), and constituency size, furthermore, also directly control for the factors that Samuels (2001) speculated were the reasons why incumbent spending was no less effective than challenger

spending in Brazil. Holding constant all other factors deemed relevant to the spending-votes relationship, therefore, the results from Ireland's STV context indicate that challengers benefit only about two-thirds as much as incumbents from each euro of additional spending. (This comes from adding the estimates of β1 to β2, in this case 0.28 – 0.10, to yield 0.18 for the estimated marginal effect of incumbent spending, with a standard error of 0.042.[13])

[Figure 1 about here]

Figure 1 provides a graphical summary of the spending-votes relationship, plotting first preference votes against total spending. Incumbents are represented as "+" symbols and challengers as "o" symbols, and the linear relationship for both is shown as a line surrounded by a 95% confidence region. The slope for incumbents is about two-thirds as steep as that for challengers, echoing visually the finding from the 2SLS model in Table 2, without using instruments or model assumptions of any kind.

The Effects of Out-spending Rivals

All things considered, our results have thus far shown, spending more brings a candidate more votes, and about two-thirds more effectively for challengers versus incumbents. Votes only benefit a candidate insofar as they put him or her ahead of a rival, however, and this also implies that, especially in multi-candidate elections, it is relative and not only absolute spending that matters. Hence we also consider whether outspending one's rivals, measured in terms of spending share, also means winning a greater share of the vote. Not only does this formulation focus attention on a substantive quantity of interest – whether candidates who spent *more* also won more of the vote – but also it mitigates endogeneity problems caused by reactive spending. A strong incumbent who spends little in response to weak challengers will bias a regression linking her strong vote showing to low absolute spending, but this problem is greatly lessened or even eliminated by shifting the focus to relative spending, since a candidate can only increase spending share at the expense of the spending share of another

candidate. Even if spending margins were affected by vote margins – hence giving rise to the problem of endogenous spending – then this only sets a lower bound on spending effects estimated by direct methods such as OLS. If spending does have an effect, then spending more should be linked to winning more of the vote share, regardless of what factors influence a candidates' share of the spending in her constituency.

Models (2) and (3) from Table 2 show the OLS regression of total votes and vote share on the candidate's total spending as a share of the total spending by all candidates in the constituency.[14] Our expectation, in line with the findings thus far that spending is positively associated with winning votes, is that outspending other candidates means also out-performing candidates in terms of vote share.

The results from Model (2) show the relationship of relative spending to raw votes, indicating that for every additional 1% a candidate spent of the total in a constituency contest, challengers received an average of 340.45 more votes. For incumbents, however, this effect was only an additional 171.0 (s.e. 22.58) votes per additional 1% spent, indicating that incumbent spending in percentage terms only half as effective on the margin as challenger spending in winning votes. The results echo those from Model (1) where we investigated the relationship of absolute spending to absolute votes: Spending matters, although it brings far fewer marginal benefits for incumbents as it does for challengers.

Model (3) focuses on the vote *share* received by candidates, for each additional percentage of spending share. Since vote share is ultimately what matters to candidates, this measure is perhaps of greatest substantive interest. Finally, because the numbers of seats as well as spending limits vary across constituencies, the focus on spending share and vote share has the advantage of standardizing the spending-votes quantities to make them more directly comparable across constituencies. The results indicate very similar results to the findings for raw votes, with a strong and statistically significant result for challengers – indicating a

direct, statistically significant average gain in vote share of 0.76 for every percentage point increase in the share of total spending – as well as a smaller estimated effect of 0.58 (s.e. .059) for incumbents, indicating that relative spending is only about three-fourths (76%) as efficient at winning vote share for incumbents compared to challengers.

From the simple standpoint of measuring how much spending matters in elections, we note that the estimates of 0.76 (challengers) and 0.58 (incumbents) are striking results, indicating for challengers at least that outspending one's rivals by one percent will mean gaining over three-fourths of an additional percentage point of the vote, on average. Considering that the average vote share of all candidates in the 2002 election was just 9.1% (Table A1), this marginal effect should be regarded as highly significant in substantive political terms. In other words, outspending one's rival candidates even by a small margin could easily mean the difference between winning and losing a seat, especially for challengers.

Effects on Intra-party votes

In the Irish multi-party context candidates are also competing against other candidates from the same party. To model the *intra-party* effects of spending—a subset of the total effect wherein most competition takes place against candidates of other parties—we use the formulation of relative rather than absolute spending but in other respects the essentials of our approach are the same. Candidates that outspend rivals from their own party should receive a proportionally greater share of their party's first preference votes. Furthermore, the finding of an intra-party effect serves as direct evidence that spending benefits not parties as a whole, but rather the individual candidates incurring the costs of campaigning.

Model (4) of Table 2 shows the results on a candidate's share of the party vote in a constituency, as a function of the share of spending from the candidate's total own-party spending in the constituency. It directly answers the question, also examined separately by

Cox and Thies (2000) in the Japanese context, of whether outspending one's own party rivals will put a candidate ahead among voters supporting the candidate's own party. These results show that our positive findings also hold when looking at intra-party effects: those who spend more against own-party rivals win more of the vote than those who spend less. The estimate of 0.61 indicates that the average effect of spending an additional 1% of the share of all own-party spending is to gain 0.61% more of the own-party first-preference vote. In STV contexts where elections are won and coalitions formed by parties, but campaigning and voting takes place by and for candidates, these results are direct evidence that spending by individual candidates directly brings individual and not party-wide benefits.

Interestingly in contrast with previous ways of looking at the spending-votes relationship, the intra-party results show no difference for spending effects between incumbents and challengers, given the lack of statistical significance of the interactive coefficient. In the struggle to come out ahead of one's own party challengers, in other words, incumbents seem to enjoy no particular disadvantage relative to challengers in campaigning contest. The interesting question given our other results is why this should be so. The first possibility is substantive: It is quite plausible in the context of Irish STV elections that when it comes to winning seats for one's party, that incumbent candidates simply do not enjoy the comfortable margins of safety that are found in many other electoral contexts. Indeed, many candidates would readily agree that they have more cause to fear their from their so-called running mates than from rivals from other parties, as it is quite common for incumbents to lose to challengers from their own party—particularly within *Fianna Fáil*, the governing party since 1997. In addition to the substantive possibility that intense competition within parties may simply erase incumbent-challenger differences when it comes to the intra-party vote, two caveats should also be considered. The first is that when looking only at intra-party votes where more than one candidate from a party is running in a given constituency, the

sample is restricted to less than half (207 of 463) of the total sample of candidates. Since almost all cases of intra-party contestation are within FF and FG, furthermore, and since these two parties entered the election with by far the greatest proportion of incumbent candidates, the variation on the incumbency variable is much more restricted in the intra-party subsample relative to the sample of all candidates. With significantly less variation on incumbency, it is correspondingly more difficult to discern separate effects for incumbent spending.

A second consideration concerns the extent to which parties succeed in managing the vote for their candidates to maximize seat share. In Irish elections, parties will often try to spread their vote across their candidate slate to maximize the number of seats they win. This is done by 'bailiwicking' – giving each candidate his or her own area of the constituency to campaign in, and by asking supporters to vote No 1 for one candidate in one area and for another candidate elsewhere. To the extent that this vote management strategy works – and much evidence suggests it does (e.g Marsh 2000) – it will reduce intra-party vote variances, at the same time that it transfers "excess" votes away from the strongest candidates (most likely incumbents) towards the weaker candidates (most likely challengers). Bailiwicking therefore may therefore dampen differences between incumbents and challengers and thereby make them harder to observe when focusing only on intra-party competition. We would still expect the "stronger" candidates to win more votes, however, and to have a better chance of election (winning also more lower preferences), but margins may be smaller than they would be without party management of their candidates' first preference votes. Indeed, because bailiwicking introduces additional noise not directly related to spending, it should have the effect of biasing our estimates downward. In other words, we should regard the estimate of .81 as probably an under-estimate of the true intra-party effect of spending, which is likely greater in reality than we are able to observe in the presence of bailiwicking strategies.

Effects on the Probability of Winning

A final way in which the efficacy of spending can be assessed in the STV context is by examining how spending affects a candidate's probability of winning a seat. Under STV, spending has even more potential to contribute to a candidate's chances of winning a seat, because a positive campaign may contribute to the lower-order preference votes that a candidate can receive during transfers. With a median constituency magnitude of 4, this means that in the median constituency where 10 candidates compete, almost half of all candidates win seats, making the winning of a seat an extremely responsive outcome measure in our dataset. If campaign spending matters for influencing not just first preference votes but also lower-order preferences, then we should observe a clear positive relationship between spending and a candidate's chances of being elected.

[Table 4 about here]

Table 4 shows the impact of spending on a candidate's chances of winning a seat. As the dependent variable is now binary, we have used a dichotomous probit model, predicting the probability of winning a seat as a function of spending share. The estimates show that increasing one's share of spending in the constituency has a very significant effect on a candidate's chances of success. As per previous results, furthermore, there is a statistically significant difference between marginal spending effects for incumbents versus for challengers, with the effect being smaller for incumbents. However, probit coefficients are not simple to interpret in this context, and we turn to additional methods to evaluate the impact of spending on a candidate's probability of winning a seat. Table 5 shows first differences calculated for changes in spending for challengers and incumbents. For the change from 5 to 15 percent, a shift which represented an increase from about the 20th to the 80th percentile of spending share, the probability of winning a seat increased a dramatic 0.41 for challengers, but only 0.34 for incumbents. Changes in the probability of winning for other

values show similar differences, although these first differences belie the plain fact that incumbents start with a much higher baseline probability of being (re)elected.

[Table 5 about here]

The overall pattern is seen in Figure 2, which plots the predicted probability of winning a seat from candidate spending share for both incumbents and challengers. The shaded regions show the 95% confidence intervals from parametric bootstrapping (using CLARIFY, see King, Tomz, and Wittenberg 2000). The steeper curve for challengers clearly indicates that spending increases across most of the meaningful range – from around 5% to 20% -- is on average more effective for challengers than for incumbents, although incumbents have a generally higher overall probability of winning. The dashed line at the .50 probability shows the point at which spending returns a better than even chance of being elected. For incumbents, this figure is about 5% of the spending share, while for challengers it is closer to 15%. For challengers, however, a change from 10% to 15% means a much greater increase in the chances of winning a seat than for incumbents. Overall, the conclusion is a resounding affirmation of our earlier findings: spending has a strong effect on candidate electoral success, and the marginal effect is about twice as strong for challengers as for incumbents. All things considered, the candidates that outspend others are much more likely to be winners.

[Figure 2 about here]

CONCLUSIONS

The chief implication from our results is that in Ireland's STV context, spending clearly matters. Candidates who spend more receive more votes and are more likely to be elected, both in competition with all other candidates and in competition with candidates from their own parties. While both challengers and incumbents can increase their probability of winning

a seat through spending more, incumbent spending is only about 50-70% as efficient as challenger spending on the margin. This finding, furthermore, runs directly counter to previous research from multimember, PR systems in Flanders and Brazil that showed no differences between spending effectiveness for challengers versus incumbents. Only in competition with a candidate's own-party competitors did we fail to observe differences in challenger and incumbent spending effectiveness, suggesting that the normal operation of incumbency effects do not apply when it comes to campaigning against own-party challengers in preferential elections. With this interesting exception, which we have already discussed at length, in comparative terms Irish elections reinforce previous findings of less effective challenger spending from the United States, Britain, Australia, and France.

Set in the context of the ongoing debate over campaign finance reform, especially the possible impact of spending limits, these findings have important policy implications. The argument from previous findings of less effective incumbent spending is that spending limits would hinder competition by disadvantaging challengers (e.g. Palda 1993; Jacobson 1978). Challengers would be less able to win votes through (more effective) campaigning, and incumbents would benefit even more from their incumbency advantages, such as name recognition and free public exposure, further consolidating their already well-entrenched positions. Our findings that in multi-member, PR-based elections, less effective incumbent spending also holds true supports the further generalization of the conclusion that spending limits would disproportionately hinder challengers. In the Irish case, however, two mitigating factors should be acknowledged in considering this conclusion. First, the fact that few candidates – especially challengers – ever reach the spending ceilings means that for most candidates, these limits are more theoretical than real. It is no surprise, however, that the move to increase spending limits following the 2002 election was led by *Fianna Fail*, the incumbent party and biggest spender from the 2002 elections. Second, the regulations in

Ireland require incumbent candidates to apply expenditure regulations to their use of their office for campaign purposes, requiring these benefits to be declared and limited in the same manner as non-office derived expenditures. While this still only applies to the three-week official campaign period, it does place incumbents and challengers on a more level playing field during the official campaign.

As a final matter, of course, our investigation of Ireland has added yet another finding to the growing set of studies showing that campaigns and money matter, as well adding new evidence to the ongoing debate about the difference in spending effects between challengers and incumbents. In multi-candidate, multi-party elections with more than one seat at stake in a constituency, incumbent spending is still less effective on the margin than challenger spending at winning votes, vote share, or increasing one's chance of winning a seat. Only in competition for first preference votes with other candidates from one's own party is challenger spending no more effective than spending by incumbents. Even to win the party vote, however, spending still improves a candidate's chances of success in a significant way. Extensions to other contexts with preferential, proportional electoral rules should be conducted in order to further test the generalizability of our findings, but the results here unequivocally suggest that when all other things are equal, in Single-Transferable Vote elections as elsewhere, the most successful candidates are the ones who spend the most.

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Table 1. Factors influencing total candidate spending (€).
Robust standard errors in parentheses, clustered by constituency. Bold coefficients significant at p<=.05, two-tailed tests.

Variable	**Estimate (S.E.)**
Party strength in previous election	**6,440.1**
	(653.2)
Constituency electorate size (1000s)	-2.0
	(24.7)
Dublin (0/1)	751.5
	(937.4)
Candidate office: Senator (0/1)	1,987.1
	(4,490.3)
Candidate office: Councillor (0/1)	**4,869.5**
	(1,109.6)
Constant	**8,013.4**
	(1,979.8)
Observations	450
Adjusted R-squared	0.35
Root MSE	7956.27

Table 2. Spending Effects on Votes.
Robust std. errors with clustering in constituencies. Bold coefficients significant at p<=.05 level for one-tailed tests. Column 1 uses instruments for spending from Table 1.

	Dependent Variable			
	(1)	**(2)**	**(3)**	**(4)**
	2SLS	**OLS**	**OLS**	**OLS**
Independent variable	**Total Votes**	**Total Votes**	**% Vote**	**% Party Vote**
Total Spending (€)	**0.28**			
	(0.02)			
Incumbency x Total Spending	**-0.10**			
	(0.05)			
% of Total Spending in Constituency		**340.45**	**0.76**	
		(21.38)	(0.04)	
Incumbency x % of Total Spending		**-169.45**	**-0.18**	
		(31.53)	(0.07)	
% of Party Spending in Constituency				**0.61**
				(0.07)
Incumbency x % of Party Spending				0.19
				(0.13)
Incumbency status	**4,406.95**	**4,297.75**	**6.89**	-0.93
	(875.16)	(388.78)	(0.87)	(4.66)
Constant	**-695.31**	**-2,013.50**	**3.97**	**19.89**
	(247.19)	(449.95)	(0.57)	(4.42)
Observations	450	463	463	207
R-squared	0.59	0.70	0.76	0.48
Root MSE	1,981.01	1,705.36	3.55	11.09

Table 3. An Irish Bargain: The cost of a vote compared.
Sources for dollar figures: Gerber (2004), based on 1998 dollars, 190,000 votes cast in a typical U.S. House constituency. Irish figures based on Model (1) from Table 2.

Source	Incumbents	Challengers	Ratio
Jacobson (1985), US Congress	$188	$12	15.7
Levitt (1994), US Congress	$367	$110	3.3
Gerber (2004) U.S. state and local elections	$200	$30	6.7
Erikson and Palfrey (2000), US Congress	$46	$24	1.9
Green and Krasno (1988), US Congress	$15	$13	1.2
Irish Dail election 2002	**€5.56**	**€3.57**	**1.6**

Table 4. Probit regression of Winning a Seat on % Spending and Incumbency.
Coefficients in bold are statistically significant at the p<=.05 level.

Indep. Variable	**Dependent variable: Candidate Won a Seat**
% Total Spending in Constituency	**0.15**
	(0.020)
% Total spending x Incumbency	**-0.07**
	(0.029)
Incumbency status	**1.98**
	(0.349)
Constituency size	**0.33**
	(0.060)
Constant	**-3.65**
	(0.401)
Observations	463
Log-likelihood	-180.51

Table 5. First Differences in Spending Level Changes on Probability of Winning a Seat.
Computed from Table 4; standard errors based on parametric bootstrapping using CLARIFY (King, Tomz and Wittenberg 2000).

		Increase in Probability of Winning a Seat			
Change in % Spending (€)		**Challengers**		**Incumbents**	
From:	**To:**	**Mean**	**S.E.**	**Mean**	**S.E.**
0	5	**0.05**	(0.008)	**0.05**	(0.049)
5	10	**0.14**	(0.018)	**0.12**	(0.065)
10	15	**0.26**	(0.042)	**0.22**	(0.055)
5	15	**0.41**	(0.058)	**0.34**	(0.112)

Figure 1. First preference votes by total candidate spending.
Circles represent challengers, pluses incumbents.

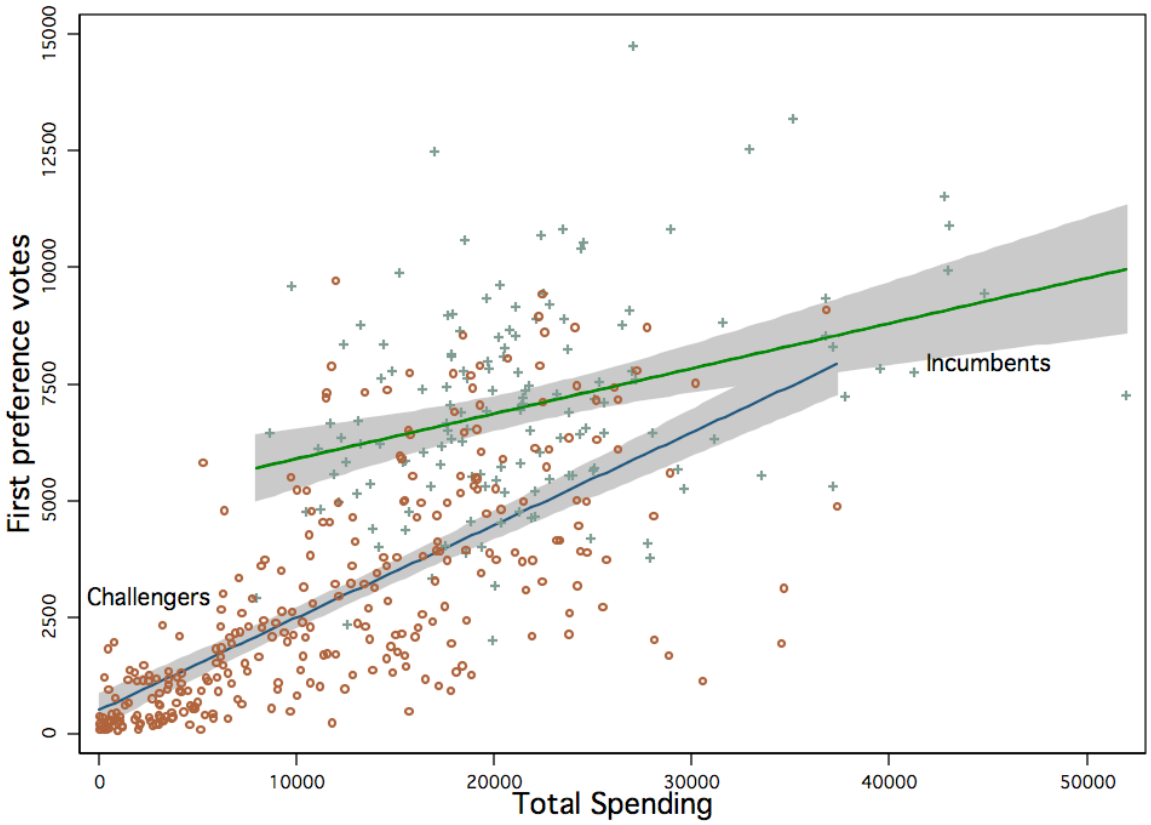
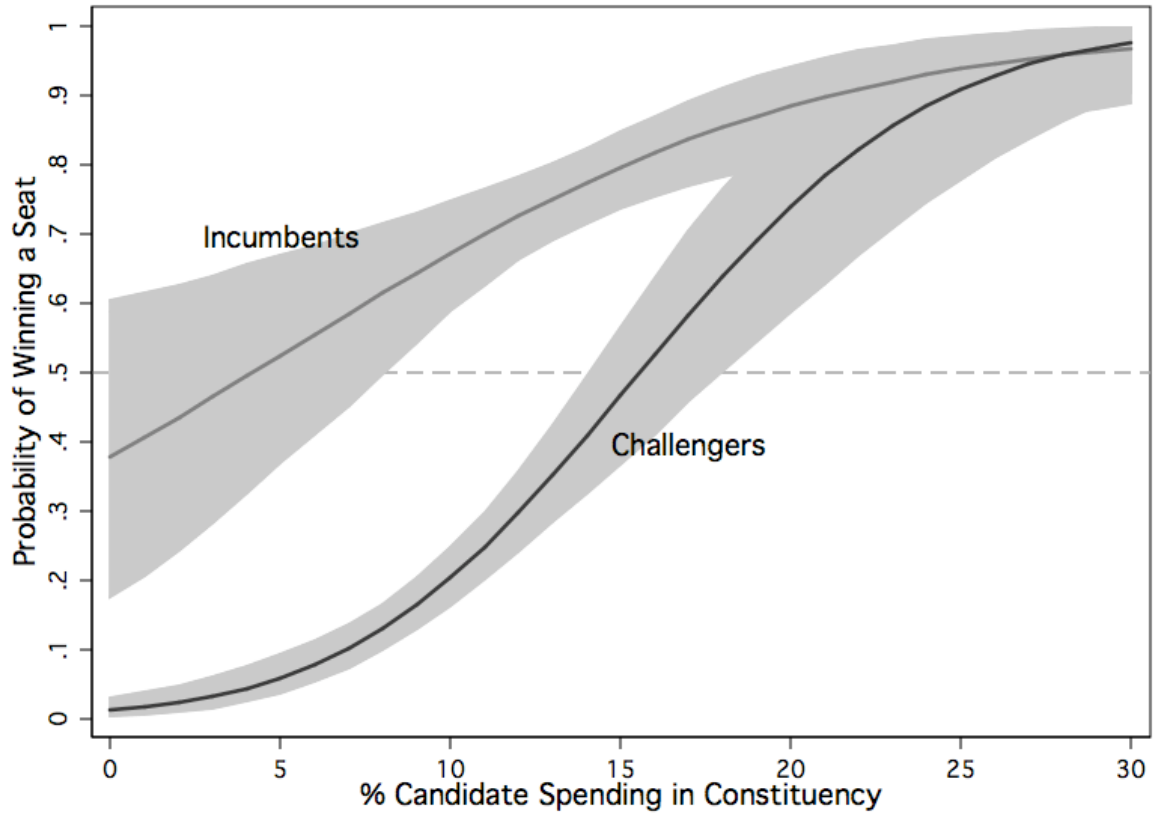


Figure 2. Effect of spending on probability of winning a seat, comparing Challengers and Incumbents. Dashed lines indicates two standard errors. Predicted probabilities and standard errors estimated using CLARIFY, based on probit regression in Table 4.



APPENDIX: DATA DESCRIPTIVES

Table A1. Descriptive data on party votes, candidacies, and spending at constituency level, by incumbency status.

		Constituency Vote %		All Candidates			Challenger Candidates			Incumbent Candidates		
Party	Median Cands Per Constituency	Mean	SD	Total	Mean Spending	SD Spending	Total	Mean Spending	SD Spending	Total	Mean Spending	SD Spending
Fianna Fáil	3	16.4	5.8	106	22,814	8,159	38	19,103	4,587	68	24,888	8,974
Fine Gael	2	10.8	4.9	85	16,798	4,467	42	16,077	4,648	43	17,503	4,219
Labour	1	10.1	5.9	47	16,530	5,472	30	15,434	5,916	17	18,586	3,907
PDs	1	8.5	5.7	20	23,479	9,259	18	22,629	9,158	2	31,124	8,556
Sinn Féin	1	7.6	5.6	37	11,675	7,314	36	11,195	6,801	1	28,953	
Greens	1	5.2	4.1	31	6,729	7,300	29	5,374	5,185	2	26,376	4,555
Independent	3	4.1	5.4	95	8,351	8,729	91	7,630	8,073	4	24,757	7,580
Other	1	1.6	3.6	43	2,022	2,265	42	1,860	2,034	1	8,650	
Overall	2	9.1	7.2	464	14,275	9,813	326	11,080	8,693	138	21,854	8,008

NOTES

[*1] Spending limits are set according to constituency size. In 2002 these had been fixed by the 2001 act at €25,394, €31,743, and €38,092 per candidate, in three-, four-, and five-seat constituencies respectively. (The odd figures are the result of Irish pounds to euro conversions, since the legislation predated the introduction of the euro.) Total election expenses for a party and all of its candidates are limited to the total expenses allowed for all of the candidates of the party in question. For more details see Marsh (2005).

[2] Constituencies are established by an independent commission that is constrained to ensure the ratio of seats to votes does not vary much across the country and to draw boundaries that reflect, as far as possible, traditional allegiances. Outside Dublin, districts generally follow the boundaries of counties that predate the foundation of the state and are important foci of sporting and other loyalties.

[3] Voters are provided with a ballot paper in which all candidates are listed in alphabetic order, along with their picture and their party's logo. Voters are asked to indicate their most preferred candidate by indicating the number '1' next to that candidate's name. While only this first preference is required for a valid vote, voters may also go on to indicate their second, third, and subsequent preferences. Counting begins by validating ballots and setting the quota needed to guarantee election, calculated as 1+(valid votes/(seats+1)). First preferences are then counted. If any candidate exceeds the quota, his or her surplus votes (the excess over the quota) are redistributed according to the second preferences of those who voted for them, and a second count then takes place with each candidate's tally augmented by a portion of those surplus votes. If no candidate exceeds the quota, then the candidate with the fewest votes is eliminated and his or her votes transferred according to the second preference marked on each of that candidate's ballots. The count proceeds in

this fashion until the appropriate number of candidates have reached the quota. In the event that the count is concluded without that happening, the remaining candidates are declared elected.

[4] The Standards in Public Office Commission, which is charged with overseeing party spending, argued in a recent report that consideration should be given to extending the period to 2/3 months within which expenditure was recorded as 'campaign expenditure' and therefore capped. See its Presentation to Joint Committee on the Environment, Heritage and Local Government - 18 December 2007 (http://www.sipo.gov.ie/)

[5] In fact there were only 165 open seats, since the 464th "candidate" was elected without votes: Séamus Pattison, the incumbent *Ceann Comhairle*, or speaker of the *Dáil*, reelected automatically according to the Election Act, a measure designed to protect the neutrality of the position.

[6] Of these, 138 were elected in the 1997 general election, and 6 in by-elections between election terms.

[7] The legislation requires that candidates record and declare all campaign expenditures incurred between the government polling day order and the actual polling day. It also required that certain other expenditures incurred outside the campaign period—notably commissioning an opinion poll within sixty days of the election—must also be declared. Expenditures by the national agent of the candidate's party that were incurred on behalf of the candidate also had to be allocated to candidates. For full details, see "Report by the Standards in Public Office Commission to the Chairman of *Dáil Éireann* (*Ceann Comhairle*) regarding Election Expenses Statements and Statutory Declarations received from election agents of candidates, national agents of political parties and other persons at the Dáil General Election of 2002", 11 June 2003, available from http://www.sipo.ie. In our

analysis of spending effects, we count the value of spending authorized by individual candidates and their agents, as well as the money spent on candidate's behalf in their constituency by their party's national agent. There are two reasons for this. First, it would be discarding valuable information on expenditure to ignore the total amount spent, since spending by a party on behalf of a candidate is usually quite clearly aimed at directly benefiting the individual candidate. Second, the distinction between party spending on a candidates behalf and candidate spending may in many cases be an accounting device, rooted not in who authorised the spending or on how candidate specific the spending was but on the need to ensure that overall spending remained within the legal limits. Certainly, it is hard to separate the types of spending in the accounts furnished by parties and candidates.

[8] Two-stage least squares (2SLS) is a special case of the instrumental variables approach used to produce a consistent estimates when an explanatory variable is correlated with the error terms. In 2SLS, each endogenous covariate is regressed on all valid instruments in a first stage regression, and then the fitted values for each endogenous covariate are used instead of the covariate in a second stage regression. Because the instruments are exogenous, the predicted values of the endogenous covariates provide approximations that are uncorrelated with the error term.

[9] The quota in the Irish STV system is defined as the valid vote divided by one more than the number of seats, plus 1. Hence, in a four seat constituency, a vote share of 20 percent would amount to (almost) one quota.

[11] We do not log either spending or votes in our model, as have a few previous studies. The reasons are several. First—most likely caused by the leveling effect of legal spending limits—the distribution of spending by candidates is single-peaked and approximately

symmetric, making a logarithmic transformation of spending unnecessary. Second, using un-logged votes produces an outcome variable whose metric is more easily interpreted. Finally, our tests showed that using a log specification did not change any of the substantive results. We also tested for curvature in the spending-votes relationship by including a quadratic term for spending, and this also showed no significant difference.

[12] In the regressions that follow, in order to control for possible correlations between residuals within constituencies we used the robust cluster variance estimator, defined as for j=1…J clusters as $V_{\text{cluster}} = (X'X)^{-1} * \Sigma_{j=1} u_j' u_j * (X'X)^{-1}$, where $u_j = \Sigma_{c=1} e_j x_j$ and where (in our application) j were constituencies.

[13] The standard error for the marginal effect of incumbency is calculated (per Equation 1) as var(β1) + var(β3) + 2cov(β1∗β3), following Aiken and West (1991).

[14] Here the sample size changes to include all 463 candidates that competed, because the OLS models are not restricted to the 450 candidates for whom data on all instrumental variables for spending (Table 1) were available.