Ballot order effects: an analysis of Irish general elections

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Abstract: This paper presents evidence of ballot order effects in Irish General Elections, where candidates are listed in alphabetical order. Data relating to elections from 1977 to 2011 suggest the effect is significant in a statistical sense and in magnitude. The nature of the Irish electoral system sees voters cast preferences for candidates, and as a result a greater level of information regarding voters becomes available. Various fixed effects are added to control for constituencies, candidates and political parties.

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INTRODUCTION

The slim margin of victory in the U.S. Presidential election between Al Gore and George Bush Jr. in November 2000 focused media attention on ballot paper design and whether better voting technologies and methods could be adopted to improve accuracy. The same is true of Ireland, where the Commission on Electronic Voting was established in 2004 to determine whether electronic voting would improve accuracy. Large sums of money have been spent by various governments to improve the accuracy of elections, through electronic voting and voting reform. Yet, there remains one significant problem that continues to bias election results - the order in which candidate names appear on a ballot paper.

Politicians have a long-held belief that ballot ordering can influence the outcome of an election. Social scientists have studied this effect and made conclusions about its impact, yet courts of law have rarely acted to remove such a bias. Extensive academic research has explored the characteristics and dynamics of ballot order effects in the U.S., finding that a "primacy effect" (being listed first) can have a significant impact on election outcomes (Miller & Krosnick (1998), Koppell & Steen (2004), Ho & Imai (2008)). When a ballot paper is complex or when many candidates are competing for the same position, voters may not be well informed about each candidate and can therefore make decisions that have been influenced by the ballot paper in front of them.

Irish elections are conducted through Proportional Representation using a Single Transferable Vote (PR-STV). Previous research on Irish elections has addressed some aspects of ballot order effects, but has not sought to analyse the full extent of such an effect (Robson & Walsh (1974) and Bowler & Farrell (1991a)).

Under the PR-STV system, voters may indicate their first, second and subsequent preferences among the list of candidates. The candidates on the ballot paper are usually presented in one column[1]. Only when an unusually large number of candidates are declared will the candidates be presented in two columns[2].

[1] A sample ballot paper can be found in Appendix G
[2] For a detailed analysis of voting in Ireland, see Coakley and Gallagher (2009).

Candidates are placed on the ballot paper in alphabetical order according to their surname, so a “primacy effect” would suggest a greater number of elected politicians (TD's - Members of the Irish Parliament) would have surnames near the beginning of the alphabet.

The purpose of this paper is to assess whether ballot ordering influences constituency results. Specifically, this paper asks whether occupying the first ballot position has a significant advantage (in both the statistical and magnitude sense) over other ballot positions. This paper will add to the existing literature on alphabetical voting by examining a much larger sample of Irish elections than has previously been undertaken. Using the summary constituency results from the 11 General Elections between 1977 and 2011 to the Irish Parliament (Dáil Éireann), this paper will analyse first preference votes and subsequent preferences (transfer votes). The subsequent preferences of voters are an important but often ignored part of the PR-STV system.

Voter apathy is a potential reason why ballot-ordering effects exist. Voter turnout and adult education levels have changed significantly over the period covered in this dataset and this could impact on the number of votes cast that were influenced by ballot ordering. This paper will examine whether ballot order effects have changed over time in line with changes in voter turnout and education levels.

The multi-seat nature of constituencies in Irish elections often results in political parties running more than one candidate to maximize the political party's total vote. This paper will examine intra-party and inter-party voting bias to assess how “party voters” are influenced by ballot order. Ireland is one of two countries to use PR-STV for elections to its primary legislative assembly. The Maltese system of PR-STV is quite similar to Ireland and is used in this paper to provide supportive evidence that ballot order effects transcend Irish elections.

THEORY OF BALLOT ORDER EFFECTS

Cognitive Costs and Bounded Rationality

Simon (1957) puts forward the idea that decision-making by individuals is limited by the level of information available to them, the cognitive resources, and the amount of time available to them to make a decision. He states "boundedly rational agents experience limits in formulating and solving complex problems and in processing (receiving, storing, retrieving, transmitting) information". Simon suggests that individuals use heuristic methods to help make decisions quickly rather than using a strict rule of optimization. Examples of heuristic methods include a “rule of thumb”, an educated guess or common sense. They do this because of the complexity of the situation, and their inability to process and compute the expected utility of every alternative action. Deliberation or cognitive costs might be high and there may be economic activities also requiring consideration and decision (Simon, 1957).

The theory of cognitive costs is analysed in a number of experiments where people are asked to choose between various alternatives. Students who are presented with multiple choice exams are biased towards choosing answers near the top of the list (Cronbach, 1950). When people were asked to choose between food or drinks they had just tasted they were biased towards choosing the first one they had tasted (Dean, 1980). Simon (1957) suggests people will often choose the first reasonable option, especially if they consider the consequences of such a mistake to be small.

In an election, voters will incur some nonzero cost while reading and processing the information presented to them during the course of the election campaign and on the ballot paper. When voters are faced with a list of election candidates they will search their memories to find reasons to vote for each candidate[3]. Voters think less and less about each subsequent alternative, and as they work through the list of candidates their short-term memory can become congested

[3] Rabin and Schrag (1999) suggest that people evaluate lists with a confirmatory bias. It suggests that people tend to notice and look for information that confirms their existing beliefs, whilst ignoring anything that contradicts those beliefs.

with thoughts. Therefore, they may be more likely to generate favourable thoughts about candidates listed initially, biasing them toward voting for them.

Based on this cognitive cost of voting idea, it would be expected that voters are thinking less and less about each alternative when considering who to vote for. If voters are asked to rank candidates according to their preferences in an alternative vote or transferable vote electoral system then it is likely that these effects are exacerbated. As a result, the magnitude of ballot order effects can differ depending on the electoral system and whether the voter can rank candidates in order of preference. The Irish electoral system analysed here uses a proportional representation system where voters rank candidates to outline their preferences.

Name and Alphabetical Effects

Nuttin (1985) and Johnson (1986) suggest people tend to have preferences for names that share initials with their own name or "name letter effect". Nuttin (1985) presents experimental evidence which shows that letters belonging to an individual's own first or family name are preferred above other letters. Hooren et al. (1990) find that when participants were asked to choose between random letters, they chose the group that contained letters found in their own name. Hooren et al (1990) find that letters belonging to the participants' own names were preferred to all other letters. Byrne (1971) suggests people have a positive regard for political candidates who share their own initials, because similarity enhances attraction. Zajonc (1968) notes that the greater prevalence of such names in the general public results in an increased exposure to such candidates, and this exposure enhances liking. Pelham, et al. (2005) suggests that this effect arises out of "implicit egotism", whereby people gravitate towards places, people and situations that reflect themselves, including perhaps similarities with their own name.

Mackerras (1970), Trench (1987) and Orr (2002) noted that political parties are aware of ballot order effects and will often use it to maximize the party's vote by choosing candidates who would take advantage of a predetermined ordering

(alphabetical etc.). Many governments have used randomisations of the ordering of names, or rotations in the printing of ballot papers to counteract ballot-ordering bias. The California Alphabet Lottery (Ho and Imai, 2008) is an example where both a randomisation and rotation are used. The letters of the alphabet are drawn at random to form a randomized ordering, which is used in the first electoral district. This randomised ordering is then rotated through the electoral districts by moving the candidate at the top of one district to the bottom of the next district.

The ordering of candidate names, whether alphabetic or randomised, may induce behavioural changes in candidates, making it difficult to estimate the direct effects of ballot order. Candidates who discover they are not placed in an optimal position after a randomisation may decide to canvass more aggressively in that district. The same is true of rotations within the electoral area. Depending on the timing of a randomisation, candidates can still be chosen or substituted by political parties to exploit the randomisation or the alphabet.

Some countries, including Ireland, use alphabetical ordering for simplicity and try to counteract any cognitive costs or ballot order effects by providing detailed information on the candidates on the ballot paper.

In Ireland, election candidates must use the name they are commonly known by when determining the ordering of names on the ballot paper, but deed polls may be used as a way of legally declaring a name change[4]. Changing a surname to its equivalent in the Irish language can often reward a candidate. Many surnames in Irish begin with "Ó" and "Mac" and candidates may sometimes drop the "Ó" altogether, or place it after their first name if doing so would be advantageous, examples of this include "Cuiv, Éamon Ó". Candidates have also used marriage and maiden names if it might help them to move closer to the top of the ballot paper.

In *O'Reilly versus Minister for Environment (1986 - I.R. 143)* the Irish High Court declared that alphabetical order on ballot papers was constitutional and rejected

[4] E.g. Independent candidate "Seán D. Christian Democrat Dublin Bay Loftus" prior to the 1973 General Election

the idea that it created inequality between candidates. The High Court found that the alphabetical nature of the ballot paper made voting a simpler affair for the public. In an attempt to counteract these effects, political party logos and candidate photographs were added in 1999 and 2000 respectively to aid voters and reduce the cognitive costs associated with voting.

EMPIRICAL EVIDENCE OF BALLOT ORDER EFFECTS

Several studies have found large and statistically significant ballot order effects. These studies have focused largely on the U.S., with some others looking at Australia, Malta and Ireland. Research can be broken down depending on the ordering method used on the ballot paper (Alphabetical, Rotation and Randomisation). U.S research tends to be on going, with new papers published after each set of state and Congressional elections. Research outside the US is relatively rare, with little substantive research on-going in any one country.

Research relating to alphabetical ordering has focused on Ireland and Malta; both use alphabetical voting and proportional representation systems. Robson and Walsh (1974) examine the 1973 General Election in Ireland. They find strong support that alphabetical factors are important in Irish elections; it particularly favours the first candidate of a political party where they run more than one candidate in a constituency. Bowler & Farrell (1991a) briefly estimate ballot position effects for the 1989 Irish General Election, finding some evidence of such effects. Ortega-Villodres (2008) uses longitudinal data to research ballot ordering in Malta, finding that ballot ordering can increase a candidate's vote share by 8.22% vis-à-vis the rest of the party's candidates. Ortega-Villodres (2008) suggests that compulsory voting and a two party system might be its causes. Ortega-Villodres and De laPuerta (2004) offer a brief analysis of the 2002 Irish election in a paper comparing Ireland and Malta, both of whom use PR-STV as the electoral system. This paper will add to the existing literature by fully examining the PR-STV electoral system, using the constituency results from eleven Irish General Elections between 1977 and 2011.

Rotating names on the ballot paper by district or within bundles of ballot papers offers a simple alternative to alphabetic ordering. "Robson rotations" were first introduced in Tasmania in 1979 by the Tasmanian Member of Parliament Neil Robson and are now used in elections throughout the world (Ho and Imai, 2008). Under a "Robson rotation" names would be rotated on the ballot paper, where the number of rotations would be equal to the number of candidates, therefore "distributing" the effects amongst all the candidates.

Rotations are rather common across the US. Miller and Krosnick (1998) analyse vote returns from the 1992 Ohio state elections. Miller and Krosnick (1998) showed that name order effects increased a candidate's percentage of votes by 2.33 per cent compared to when listed last. They conclude that even though the effect they find is statistically significant, it is not substantively significant and likely has no impact on electoral outcomes. Koppell and Steen (2004) disagree with the Miller and Krosnick analysis of ballot ordering effects. They examine elections in New York City where rotations are also used, finding that positional bias ranges from 2 per cent to 4 per cent depending on the seniority of the public office.

Despite attempts to remove ballot order effects, they remain present, even when the names are randomised. Ho and Imai (2008), analysing the 2003 Californian Recall elections, find minor party candidates can increase their share of the votes by between 2 and 4 percentage points when listed first on the ballot paper, with no effects for major party candidates. King and Leigh (2009) examine the randomised ballot order used in Australia where voting is compulsory. Compulsory voting is likely to exacerbate the ballot order effect (as well as increasing the number of invalid ballots) as people who typically don't vote or don't care about politics are in some way “forced” to come out and mark the ballot paper[5]. They note that ballot order is orthogonal to all candidate characteristics due to the randomization of names. They estimate a statistically significant effect of 1% for the average candidate, with larger effects for smaller parties and independent candidates.

[5] In the 2004 election the fine for failing to vote was Aus. $20, or approximately the average hourly wage

DATA & METHODOLOGY

The data used in this paper has been sourced from the Franchise Section of the Department of the Environment, Community & Local Government in Ireland. It covers the 457 separate constituency elections to Dáil Éireann that took place during the 11 General Elections between 1977 and 2011.

In total there are 4,807 election candidate observations and 2,249 different individuals contested these elections during this period, 879 running more than once. Information regarding constituencies, the number of seats to be won in each constituency, the names of candidates as they appeared on the ballot paper and the votes received by each candidate are contained within the dataset.

Table 1 details some summary statistics regarding elections to Dáil Éireann between 1977 and 2011. Irish politics is dominated by three political parties (Fianna Fáil, Fine Gael and Labour), while other parties and independents struggle to have a significant impact. On average, incumbents receive 2.5 times the number of votes a challenger can expect to receive.

Table 2 contains information regarding number of candidates, constituencies and quota sizes in the 11 elections covered in the dataset. Turnout varies over the 11 elections, ranging from 62% in 2002 to 77% in 1977. The number of candidates has changed significantly over time, ranging from 364 in 1982 to 568 in 2011. This may also have influenced ballot order effects as greater competition means longer ballot papers. As a result, controls have been added to account for the number of candidates on a ballot paper.

Table 1 - Descriptive Statistics

	Mean	SD	Min	Max
No. of Candidates	11.53	3.33	4	24
- Fianna Fáil (N=1291)	3.05	0.78	1	5
- Fine Gael (N=1115)	2.69	0.8	1	5
- Labour (N=517)	1.47	0.62	1	3
- Independents (N=1025)	3.95	2.36	1	14
1st Preference Votes	4,112	3,176	13	20,079
- Incumbents (N=1594)	7,046	2,370	1,096	20,079
- Challengers (N=3213)	2,656	2,430	13	17,256
- Fianna Fáil	6,235	2,700	447	20,079
- Fine Gael	5,450	2,578	549	17,472
- Labour	4,434	2,951	183	17,256
- Independents	1,223	1,967	13	17,075
Quota	8,827	1,352	5,859	13,864
Total Valid Poll	45,176	10,476	23,434	75,539
No. of Seats	4.13	0.8	3	5
Total Number of Observations - 4807				

Table 2 - Descriptive Statistics

Election	No. of Seats	No. of Constituencies	Average Quota	Number of Candidates	Turnout
1977	148	42	8466	374	77.0%
1981	166	41	8327	402	76.5%
Feb-82	166	41	8084	364	73.5%
Nov-82	166	41	8185	364	72.5%
1987	166	41	8613	466	73.0%
1989	166	41	8018	370	68.0%
1992	166	41	8351	481	68.5%
1997	166	41	8551	483	66.0%
2002	166	42	8956	463	62.0%
2007	166	43	9865	470	67.0%
2011	166	43	10698	568	70.1%

To capture ballot order effects we use the votes received by each candidate in the baseline specification:

$$Votes_{ijt} = \beta_0 + \beta_1(BallotPosition_{ijt}) + \beta_2(Incumbency_{ijt}) + Controls + \varepsilon_{ijt}$$

Where i, j and t index candidates, constituencies and elections.

Three variations of the dependent variable are used: the number of first preference votes, the share of total votes in the constituency and Log(Share of Votes).

$BallotPosition_{ijt}$ is a dummy variable for each ballot position. The fourteenth and subsequent ballot positions have been grouped together as frequency gets smaller. $Incumbency_{ijt}$ is a set of dummies for candidate incumbency, being a sitting TD; being a Government Minister; being a leader of a political party and being a party member of the outgoing government. These are included to proxy for how large a profile the candidate may have in their constituency.

The following set of controls and fixed effects are used throughout: total candidates in the constituency (to control for the length of the ballot paper and for the level of competition), constituency fixed effects, political party fixed effects and election fixed effects.

As ballot papers use alphabetic ordering, it is possible that a candidate with an "advantageous" surname might occupy the top ballot position in numerous elections. If such a candidate were to be successful in a number of elections, the building up of a loyal support base would bias any estimates of ballot order. The cumulative impact of ballot ordering over successive elections may lead to a serious distortion of the composition of Dáil Éireann. To control for this, individual candidate fixed effects will also be used.

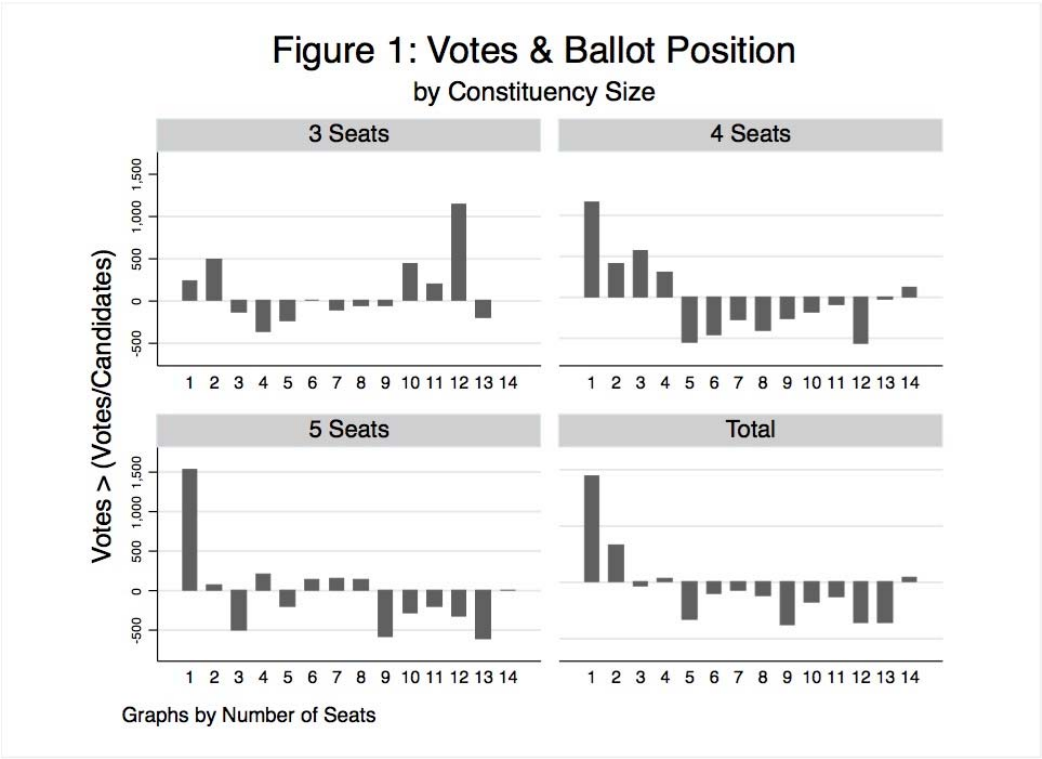
There exists the possibility that the error terms are non-independent of each other (clustered) as candidates are running against each other at a constituency level. Failure to account for error clustering leads to under-estimated standard errors and consequently the over-rejection of hypothesis tests. This paper uses

the multi-way clustering (Cameron, Gelbach, and Miller, 2006) for estimating robust standard errors. Standard errors are clustered at the constituency level because ballot order varies at that level, but also at the individual level as there are repeated observations for individual candidates throughout the dataset.

RESULTS

1st Preference Votes

Figure 1 presents a preliminary examination of the share of first preference votes received by various ballot positions. The graphs show the average number of first preference votes candidates receive over and above the expected vote (the expected vote here is the total valid poll divided by the number of candidates), arranged from ballot position 1 to 14+. The marked difference between the first few ballot positions and the remaining ballot positions would suggest there is a significant advantage to be located near the top of the ballot paper. As a result, having a surname that would potentially "guarantee" such a position would give a significant electoral advantage. This bias is clearly visible in four and five seat constituencies but not as obvious in three seat constituencies.



Tables IV and V present results of the baseline specification, using Share of Total Votes as the dependent variable. Appendix A contains results using the Number of 1st Preference Votes and Log(Share of Votes) as the dependent variables. Table IV & V contain the results from five regressions, one OLS, three fixed-effects panel models and a Logit model. Table IV uses the first position on the ballot paper as a dummy variable to capture the effect of being at the top of the ballot paper. Table V uses the first position on the ballot paper as the base line (excluded) category and so estimates for the subsequent ballot positions are relative to being first on the ballot.

The OLS specification is provided to allow comparisons between OLS and fixed effects. The OLS specification over estimates the effects of ballot ordering, compared to the fixed effects models.

The fixed effects estimates in Table IV suggest a positive and statistically significant ballot ordering effect of 1.16 percentage points. Referring to the fixed effects models in Table V, the effect of being on a subsequent ballot position ranges from -0.8 to -1.79 percentage points compared to being first on the ballot. These numbers are rather large, considering the share of votes a candidate

requires to win a seat ranges from 16.66% to 25%. Most of the estimates are significant at the 1 per cent level. These results are broadly in-line with the existing ballot order literature. Figure 2 presents a graphical analysis of these fixed effects regressions and includes the 95% confidence intervals, using the two different error-clustering methods.

These results are echoed in the fixed effects regressions in Appendix A and B. The fixed effects estimates in Appendix A suggest a ballot ordering effect of 508 first preference votes compared to other ballot positions. Referring to the fixed effects models in Appendix B, the effect of being on a subsequent ballot position ranges from 393 to 783 first preference votes compared to being first on the ballot. These effects are surprisingly large given the average quota is 8,827 votes. Appendix B also presents estimates that being on a subsequent ballot position decreases a candidate's share of the vote, with the effect ranging from 13.8% to 31.3% depending the ballot position.

As ballot papers are ordered alphabetically, it is possible that a candidate with an "advantageous" surname might occupy the top ballot position in numerous elections. Specification (D) in Tables IV and V includes individual candidate fixed effects to account for such "advantageous" surnames and popularity. This specification is identified only from within candidate variation, using the 879 candidates who ran in more than one election. The results are broadly similar to those from the other fixed effects regressions.

Appendix C divides constituencies up by the number of seats to be filled in the election. The results for being first on the ballot paper suggest that ballot ordering effects are to be found in 4 and 5 seat constituencies only.

The final specification in Table IV and V presents a logit model using the winning of a seat in Dáil Éireann as the dependent variable. Being the first candidate on the ballot paper has a positive effect on winning a seat. This result is significant at the 5% level. This has been explored further in Appendix C by dividing constituencies up by the number of seats to be won at each election. The logit results in Appendix C suggest ballot order effects only matter in 5 seat constituencies.

Table 4

	A OLS	B Fixed Effects	C Fixed Effects	D Fixed Effects	E Fixed Effects Logit
1ST BALLOT POSITION	0.0152***	0.0116***	0.0116***	0.0117**	0.320**
	(0.00293)	(0.00275)	(0.00432)	(0.00576)	(0.133)
INCUMBENT TD	0.0890***	0.0679***	0.0679***	0.0203***	2.921***
	(0.00172)	(0.00205)	(0.00308)	(0.00347)	(0.0872)
GOVERNMENT PARTY	0.00608***	-0.0192***	-0.0192***	-0.0110***	-0.00581
	(0.00193)	(0.00198)	(0.00229)	(0.00224)	(0.0910)
GOVERNMENT MINISTER	0.0276***	0.0364***	0.0364***	0.0168**	0.838***
	(0.00521)	(0.00569)	(0.00706)	(0.00708)	(0.302)
POLITICAL PARTY LEADER	0.0652***	0.0781***	0.0781***	0.0367**	1.869***
	(0.0108)	(0.0108)	(0.0153)	(0.0147)	(0.628)
CONSTANT	0.176***	0.155***	0.155***	0.238***	-1.751***
	(0.00274)	(0.0143)	(0.0230)	(0.0262)	(0.0867)
Observations	4807	4807	4807	4807	4807
R-squared	0.542	0.671	0.671	0.881	0.3148 (Pseudo)

Columns B, C and E use Constituency, Election, No. of Candidates and Political Party fixed effects.
Column D adds Individual Candidate fixed effects to Column C
Columns A, B and E cluster at the Constituency Election level. C and D cluster at the constituency election and candidate level
Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Table 5

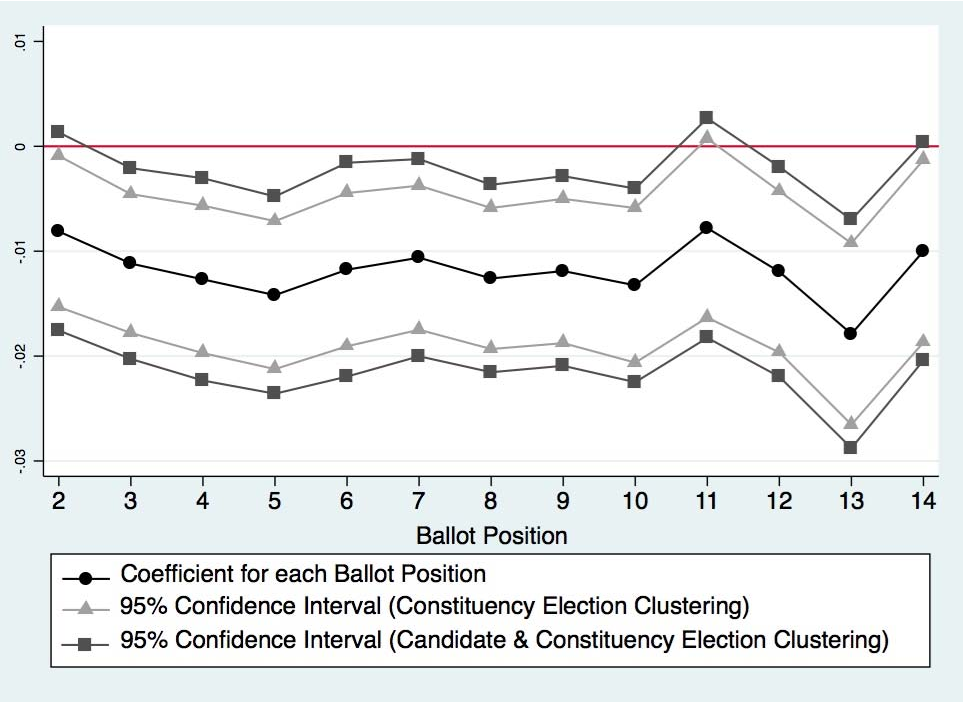
	A OLS	B Fixed Effects	C Fixed Effects	D Fixed Effects	E Fixed Effects Logit
POSITION 2	-0.00819**	-0.00812**	-0.00812*	-0.0120**	-0.228
	(0.00402)	(0.00366)	(0.00482)	(0.00587)	(0.196)
POSITION 3	-0.0138***	-0.0112***	-0.0112**	-0.0107	-0.240
	(0.00362)	(0.00337)	(0.00464)	(0.00713)	(0.189)
POSITION 4	-0.0144***	-0.0127***	-0.0127***	-0.0131*	-0.252
	(0.00383)	(0.00358)	(0.00492)	(0.00785)	(0.191)
POSITION 5	-0.0181***	-0.0142***	-0.0142***	-0.0165**	-0.216
	(0.00388)	(0.00359)	(0.00480)	(0.00837)	(0.199)
POSITION 6	-0.0169***	-0.0118***	-0.0118**	-0.0197**	-0.218
	(0.00392)	(0.00372)	(0.00520)	(0.00912)	(0.194)
POSITION 7	-0.0176***	-0.0106***	-0.0106**	-0.0164*	-0.0759
	(0.00382)	(0.00349)	(0.00480)	(0.00942)	(0.199)
POSITION 8	-0.0158***	-0.0126***	-0.0126***	-0.0229**	-0.189
	(0.00375)	(0.00342)	(0.00456)	(0.00978)	(0.201)
POSITION 9	-0.0167***	-0.0119***	-0.0119***	-0.0233**	-0.689***
	(0.00387)	(0.00350)	(0.00461)	(0.0104)	(0.229)
POSITION 10	-0.0153***	-0.0133***	-0.0133***	-0.0192*	-0.385*
	(0.00410)	(0.00375)	(0.00471)	(0.0110)	(0.226)
POSITION 11	-0.0143***	-0.00780*	-0.00780	-0.0116	-0.0251
	(0.00467)	(0.00434)	(0.00534)	(0.0114)	(0.270)
POSITION 12	-0.0186***	-0.0120***	-0.0120**	-0.0233*	-0.347
	(0.00450)	(0.00391)	(0.00511)	(0.0125)	(0.263)
POSITION 13	-0.0220***	-0.0179***	-0.0179***	-0.0273**	-0.639**
	(0.00484)	(0.00440)	(0.00555)	(0.0130)	(0.311)
POSITION 14+	-0.0140***	-0.01000**	-0.01000*	-0.0153	-0.0928
	(0.00459)	(0.00442)	(0.00531)	(0.0138)	(0.295)
INCUMBENT TD	0.0888***	0.0679***	0.0679***	0.0202***	2.495***
	(0.00173)	(0.00205)	(0.00309)	(0.00347)	(0.0998)
GOV PARTY	0.00595***	-0.0193***	-0.0193***	-0.0111***	-0.692***
	(0.00193)	(0.00197)	(0.00229)	(0.00223)	(0.0930)
GOV MINISTER	0.0276***	0.0362***	0.0362***	0.0168**	0.965***
	(0.00521)	(0.00568)	(0.00703)	(0.00710)	(0.306)
PARTY LEADER	0.0660***	0.0785***	0.0785***	0.0369**	2.611***
	(0.0108)	(0.0108)	(0.0154)	(0.0149)	(0.712)
CONSTANT	0.189***	0.165***	0.165***	0.242***	-0.211
	(0.00350)	(0.0148)	(0.0240)	(0.0260)	(0.248)
Observations	4807	4807	4807	4807	4807
R-squared	0.544	0.672	0.672	0.882	0.3869 (Pseudo)

Columns B, C and E use Constituency, Election, No. of Candidates and Political Party fixed effects.
Column D adds Individual Candidate fixed effects to Column C

Columns A, B and E cluster at the Constituency Election level. Columns C and D cluster at the constituency election and candidate level

Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Figure 2



Transfer Votes

An analysis of transfer votes is required to fully understand the nature of elections in Ireland. Transfers are an important part of voting under the PR-STV system. When a candidate has been elected, or eliminated, their votes are transferred according to the second and subsequent preferences marked on individual ballot papers. Eliminated candidates have all their votes transferred, while elected candidates have their surplus votes transferred (total votes received over and above the quota to be deemed elected).

With the election and elimination of candidates, the first candidate can change at each count. If the person at the top of the ballot paper is elected on the first count and has a surplus to distribute, then in the second count the person who was second on the ballot paper becomes the first. The same idea applies to candidates who have been eliminated. Arranging the data this way ensures that there is always a candidate described as first in each count.

A specification similar to the baseline specification is applied, however instead of looking at the total number of votes a candidate has in each count, the change in total votes a candidate receives (i.e. the transfer votes) is used as the dependent variable. The number of votes being transferred is typically small, so the regressions using raw votes as the dependent variable have been dropped in favour of share of the transfers and log(Share of Transfers).

I_{jt}^{Count} is a set of dummy variables for each count[6], added to account for the different rounds of transfer votes. The modified model is as follows:

$$Vote_{ijt} = \beta_0 + \beta_1(Ballot\ Position)_{ijt} + \beta_2(Incumbency)_{ijt} + I_{jt}^{Count} + Controls + \varepsilon_{ijt}$$

Table VI presents the fixed effects estimates. Being first on the ballot paper increases a candidate's share of the transfer votes by 1.2 percentage points. However, this number hides a significant portion of the variation between ballot positions and the lower panel of Table VI shows significant variation between ballot positions (relative to being first). Being second, third or fourth on the ballot paper has a statistically significant (negative) effect compared to being first. Using Log(Share of Transfer Votes) as the dependent variable in specification 2 produces similar results. Being first candidate on the ballot paper increases a candidate's share of the transfers by 6.4 per cent. Again, the second panel of Table VI unmasks significant variation in this number. Being second and third on the ballot paper has a statistically significant (negative) effect compared to being first.

[6] excludes the 1st count

Table 6

Dependent Var	**Share of Votes**	**Share of Votes**	**LogShare**	**LogShare**
Clustering	Election Count	Election Count & Candidate	Election Count	Election Count & Candidate
1st POSITION	1.231***	1.231**	0.0636***	0.0636**
	(0.430)	(0.483)	(0.0223)	(0.0273)
INCUMBENT TD	3.288***	3.288***	0.327***	0.327***
	(0.273)	(0.340)	(0.0177)	(0.0228)
GOV PARTY	-1.709***	-1.709***	-0.0943***	-0.0943***
	(0.375)	(0.370)	(0.0263)	(0.0282)
GOV MINISTER	-0.326	-0.326	0.00504	0.00504
	(0.819)	(0.733)	(0.0455)	(0.0473)
PARTY LEADER	6.481***	6.481***	0.541***	0.541***
	(1.634)	(2.249)	(0.0853)	(0.152)
Constant	37.51***	37.51***	-1.727***	-1.727***
	(0.478)	(0.737)	(0.0802)	(0.0940)
R-squared	0.235	0.235	0.237	0.237

Dependent Var	**Share of Votes**	**Share of Votes**	**LogShare**	**LogShare**
Clustering	Election Count	Election Count & Candidate	Election Count	Election Count & Candidate
POSITION 2	-1.196**	-1.196*	-0.0705***	-0.0705**
	(0.567)	(0.633)	(0.0272)	(0.0322)
POSITION 3	-2.109***	-2.109***	-0.102***	-0.102***
	(0.538)	(0.592)	(0.0287)	(0.0327)
POSITION 4	-1.250**	-1.250**	-0.0539*	-0.0539
	(0.522)	(0.571)	(0.0299)	(0.0361)
POSITION 5	-0.508	-0.508	-0.00528	-0.00528
	(0.540)	(0.592)	(0.0328)	(0.0382)
POSITION 6	-0.624	-0.624	-0.0245	-0.0245
	(0.528)	(0.589)	(0.0351)	(0.0410)
POSITION 7	-0.925*	-0.925	-0.0659*	-0.0659
	(0.539)	(0.582)	(0.0379)	(0.0453)
POSITION 8	-1.100**	-1.100*	-0.0768*	-0.0768
	(0.549)	(0.602)	(0.0440)	(0.0522)
POSITION 9	-0.548	-0.548	-0.0333	-0.0333
	(0.587)	(0.633)	(0.0502)	(0.0596)
POSITION 10	-1.329**	-1.329*	-0.0851	-0.0851
	(0.608)	(0.691)	(0.0578)	(0.0666)
POSITION 11	-1.431**	-1.431**	-0.161**	-0.161**
	(0.702)	(0.716)	(0.0708)	(0.0790)
POSITION 12	-0.805	-0.805	-0.0517	-0.0517
	(0.783)	(0.847)	(0.0883)	(0.103)
POSITION 13	-0.918	-0.918	-0.0493	-0.0493
	(0.964)	(0.983)	(0.118)	(0.122)
POSITION 14+	-1.560**	-1.560*	-0.196**	-0.196*
	(0.714)	(0.816)	(0.0863)	(0.106)
INCUMBENT TD	3.323***	3.323***	0.329***	0.329***
	(0.273)	(0.339)	(0.0177)	(0.0226)
GOV PARTY	-1.697***	-1.697***	-0.0935***	-0.0935***
	(0.375)	(0.370)	(0.0263)	(0.0282)
GOV MINISTER	-0.398	-0.398	0.00116	0.00116
	(0.818)	(0.731)	(0.0455)	(0.0471)
PARTY LEADER	6.530***	6.530***	0.543***	0.543***
	(1.629)	(2.185)	(0.0850)	(0.149)
Constant	38.92***	38.92***	-1.653***	-1.653***
	(0.564)	(0.806)	(0.0810)	(0.0950)
R-squared	0.236	0.236	0.237	0.237

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Number of Observations - 18,692

The following fixed effects are used throughout: Election Count, Total Candidates in that count, Political Party, Election, Constituency & No. of Seats

Time Variation

Voter turnout varies significantly over the 11 elections covered in the data. If ballot ordering effects come about because of voter apathy then we would expect ballot order effects have changed along with voter turnout over the past thirty years. Ballot order effects may also come about because of a lack of information about elections, voting or politics. If this is true, then changing education levels over the past thirty years would suggest ballot order effects would fluctuate over time.

To test whether this is the case, an interact term is created between the ballot position dummy variable and each election in the sample. The interacted coefficients show the magnitude of ballot order effects in that election.

$$Vote_{ijt} = \sum_{t=1}^{K}\left((\beta_k Ballot\ Position_{ijt})(I_t^{Election})\right)_{ijt} + \beta_2(Incumbency)_{ijt} + Controls + \varepsilon_{ijt}$$

The results from this specification are contained in Appendix D. Regardless of which dependent variable is used, the first position is positive (but not always significant) in all but the Feb. 1982 and 2011 General Elections. Ballot ordering appears to have had little or no impact on elections during the 1980's. This was a time of significant instability in Irish politics overall, and this may have resulted in the effect being non-existent or more difficult to quantify.

To test the hypothesis that ballot position effects do not change over time, an F test is conducted to test whether the 11 coefficients are equal. The F tests fail to reject the hypothesis that the first position effect is the same in all eleven elections.

Inter and Intra Political Party effects

The prominence of the large political parties in Irish elections cannot be underestimated. Voters are better informed about larger party candidates than smaller party candidates. One reason why ballot order effects might differ is the high visibility of large political parties during election campaigns; they distribute more literature, spend more money and receive more media coverage.

Political parties can be described as "mainstream" and "marginal" parties, each having different types of voters and political views. Irish politics is dominated by three large political parties, Fianna Fáil, Fine Gael and the Labour Party. Their voters are often described as "party voters". "Party voters" are indifferent between candidates of their favoured political party, and so could be biased towards voting for the first party candidate on the ballot paper if ballot ordering effects exist between candidates.

To formally test whether ballot order effects differ for each political party an interaction term is created between the ballot position dummy variable and each political party. The interacted coefficients show the magnitude of ballot order effects for candidates of that political party. The smaller political parties have been grouped together for simplicity. An F test is also undertaken, which tests whether the political party coefficients are equal. The results of these regressions are contained in Appendix E using the same dependent variables as before. Smaller political parties have been grouped together[7].

$$Vote_{ijt} = \sum_{t=1}^{K} \left((\beta_k Ballot\ Position_{ijt})(I_i^{Party}) \right)_{ijt} + \beta_2 (Incumbency)_{ijt} + Controls + \varepsilon_{ijt}$$

Regardless of which dependent variable is used, the results suggest that ballot order effects vary greatly between political parties. The effects are positive (but not always significant) for all of the party groupings, with the exception of the Labour Party. The difference between Fianna Fáil and Fine Gael candidates is

[7] The smaller political parties include the Green Party, Progressive Democrats, Democratic Left, Socialist Party, Socialist Workers Party, Workers party, Sinn Fein, Fathers Rights and Responsibilities, H-Block Candidates and the Christian Solidarity Party

striking, despite both political parties being similar in ideology. This could be due to candidate selection procedures within the two parties, with Fianna Fail selecting candidates to take advantage of ballot ordering. Independent candidates may also be influenced by ballot ordering. The F tests reject the hypothesis that ballot ordering effects are the same for each of the political parties.

The larger political parties often aim to win at least one seat in a constituency (or two in a larger constituency) and may run more than one candidate each to achieve this goal. It is likely therefore that a ballot ordering effect will exist between candidates of the same political party. There is often more than one independent candidate running in a constituency. To test this intra-party ballot ordering hypothesis the sample is restricted to the two main political parties, Fianna Fáil and Fine Gael, and Independent candidates to determine whether ballot ordering exists within political parties and groups of independents.

Regressions for the three sub-samples are performed in a similar method to the original model. Errors are clustered at the individual candidate and constituency level. In doing so, the resulting estimates are relative to other candidates in that political party or independent grouping, rather than all candidates. The results are contained in Appendix F. The regressions confirm that intra party ballot ordering exists for Fianna Fail candidates, but not for Fine Gael or independent candidates. Being the first Fianna Fáil candidate on the ballot paper can increase a candidates vote by 580 1st preference votes (or 11.5%) above that of the other Fianna Fáil candidates.

PR-STV in Malta

In order to test whether these effects are unique to Irish elections, an analysis of Maltese elections is undertaken below. This paper will attempt to exploit the fact that both countries have used a similar electoral system in order to establish whether these effects transcend Ireland.

The Maltese PR-STV rules were broadly similar to Ireland prior to 1971. From 1921 to 1971, all candidates were listed on the ballot alphabetically, regardless of their party. Since 1976, they have been grouped by party and listed alphabetically within their party group. For the purposes of this paper, only those elections from 1921 to 1971 have been examined[8]. Ballot order effects for these elections have been analysed by Ortega-Villodres (2008), finding significant effects which are then attributed to compulsory voting and a two-party system.

Table VII details summary statistics for Maltese elections. The summary statistics reflect the fact that the population of Malta is much smaller than Ireland. The average first preference vote is significantly smaller in Malta than in Ireland (642 and 4,137 respectively). This is also reflected in the quota size in the two countries (2,132 votes for Malta and 8,583 for Ireland).

Table 7 - Summary Statistics

	Mean	SD	Min	Max
No. of Candidates (N=1,889)	21.05	8	7	38
1st Preference Votes	642	766	1	6,137
- Incumbents (N=491)	1,291	1,011	14	6,137
- Challengers (N=1,398)	414	484	1	3,786
Quota	2,132	6,767	372	3,182
Constituency Total poll	12,792	4,431	1,857	19,357
No. of Seats in the Constituency	5	0.465	4	6

Source: Declarations of Results published by Electoral Commission

The methodology used to analyse Irish elections is used here to allow for easy comparisons between Irish and Maltese elections. The following set of controls and fixed effects have also been added: total candidates in the constituency, no.

[8] This data has been sourced from the Declarations of Results of Poll published by the Electoral Commission in the Government Gazette

of seats in the constituency, constituency fixed effects and election fixed effects. Multi-way clustering has been used in the same way as before, clustering by individual election level and at the individual candidate level. The results of the regression using 1st preference votes and the share of the 1st preference votes as the dependent variables are contained below.

Based on the results in Table 8, a significant ballot order effect appears in Maltese General Elections. These effects are surprisingly large given the average quota is just 2,132 votes. Using Log(Share of 1st Preference Votes) as the dependent variable suggests the effect of being on a subsequent ballot position decreases a candidate's share of the vote by between 24% and 63% depending the ballot position.

These effects are much larger in magnitude than the effects present in Irish elections. Ortega-Villodres (2008) suggests this is potentially due to compulsory voting in Malta or a largely two party system (Malta Labour Party and the Nationalist Party). Ireland has a largely two party system also, but no compulsory voting. Given the compulsory nature of voting in Malta and the cognitive costs associated with voting, it is likely that ballot order effects are exacerbated.

Table 8

	Share of Votes				**Log(Share of Votes)**		
	Coeff	SE (A)	SE (B)		Coeff	SE (A)	SE (B)
Position 2	-229.5	(76.29)***	(72.96)***	Position 2	-0.441	(0.136)***	(0.136)***
Position 3	-160.1	(76.75)**	(71.37)**	Position 3	-0.296	(0.121)**	(0.129)**
Position 4	-193.2	(75.45)**	(84.09)**	Position 4	-0.366	(0.128)***	(0.134)***
Position 5	-193	(89.51)**	(102.3)*	Position 5	-0.423	(0.136)***	(0.144)***
Position 6	-153.8	(81.66)*	(87.02)*	Position 6	-0.243	(0.139)*	(0.146)*
Position 7	-257.5	(67.95)***	(74.15)***	Position 7	-0.558	(0.149)***	(0.152)***
Position 8	-158.6	(73.20)**	(82.75)*	Position 8	-0.474	(0.147)***	(0.155)***
Position 9	-208	(71.95)***	(81.60)**	Position 9	-0.498	(0.145)***	(0.153)***
Position 10	-114.3	-84.25	-102.5	Position 10	-0.462	(0.156)***	(0.166)***
Position 11	-68.09	-99.34	-124.5	Position 11	-0.448	(0.158)***	(0.165)***
Position 12	-174.6	(90.85)*	(99.73)*	Position 12	-0.544	(0.179)***	(0.183)***
Position 13	-223.8	(107.7)**	-137.1	Position 13	-0.637	(0.201)***	(0.216)***
Position 14+	-185	(61.05)***	(85.30)**	Position 14+	-0.635	(0.116)***	(0.143)***
Incumbent	876.8	(54.81)***	(114.6)***	Incumbent	1.38	(0.0667)***	(0.0982)***
Constant	382.2	(64.89)***	(76.76)***	Constant	-2.985	(0.160)***	(0.173)***
R Squared		0.359	0.359	R Squared		0.326	0.326

Number of observations :1889 , Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

SE (A) means Stand Errors are clustered at constituency level

SE (A) means Stand Errors use multi-way clustering at constituency and ID Code levels

The following fixed effects are used: Election Count, Total Candidates, Election, Constituency & No. of Seats

Conclusions

This paper demonstrates that alphabetic ordering effects exist in the 1977 - 2011 Irish general elections. The effect is significant, in both a statistical and substantive sense. The estimated effect of being listed first on an alphabetical ballot paper in an Irish general election is approximately 544 first preference votes or 1.27 percentage points for the average candidate. This estimate is broadly in-line with Robson and Walsh (1974) who found the effect slightly higher, ranging from 784 to 968 first preference votes during the 1973 General Election. Evidence is also found that subsequent preferences are biased by the alphabetical ballot paper. This paper also suggests that ballot order effects exist at the intra and inter party level.

In general, the estimates of ballot order effects found in Irish elections are smaller than those found in the United States by Miller and Krosnick (1998) (2.3 percentage points) and Ho Imai (2008) (2 to 4 percentage points). The estimates are similar to those found in Australia by King and Leigh (2009) (1 percentage point) and in Malta by Villodres (2008) (0.74 percentage points).

Ballot order effects of the magnitudes outlined in this paper could have potentially serious implications for the Irish political system. The idea of an incumbency advantage in a subsequent election has been well documented and researched (Lee, 2008). This advantage has been explained by a number of factors, such as ability to fundraise, access to hired help or larger media profile. Ballot order effects may also matter in getting a challenger elected initially, and thus an incumbency advantage may be conferred upon this candidate. Additional research is required to investigate the relationship between ballot ordering and the incumbency advantage.

Beyond the direct effects of ballot ordering, significant indirect effects could potentially exist. The number of votes a candidate receives is often interpreted as the mandate of that politician or the ideas they support. Ballot ordering effects might suggest that this mandate or the ideas of this politician may get greater attention at a national level as their “mandate” is increased.

The results of this paper also have implications for the democracy of the electoral system. The presence of ballot order effects could be taken to suggest that the election outcomes are not the true will of the people. If this is the case, voter information and voter education campaigns are required. Elections must be conducted in a way that is seen as fair, democratic and understandable. If the public are influenced or their preferences are distorted by the electoral system, then the electoral system itself gets called into question. These effects have been the subject of many legal proceedings and several famous court cases exist in the U.S. surrounding the Gore v. Bush Presidential election in 2000. In O'Reilly versus Minister for Environment (1986 - I.R. 143) the Irish High Court declared that alphabetical order on ballot papers was constitutional and rejected the idea that it created inequality between candidates. The High Court found that the alphabetical nature of the ballot paper made voting a simpler affair for the public.

The presence of a statistically significant ballot order effect should be of concern to policy makers. Rational voter models suggest voters will reward those candidates who reflect their own political views and have performed well in the past. Rational voters should not be influenced by the design of the ballot paper. Redesigning of the ballot paper from alphabetical ordering would therefore be a desirable policy recommendation.

However, a redesigning of the ballot paper would at best reduce the ordering effects, but not eliminate them. A simple randomization of the names before the ballot papers were printed would not remove ballot order effects, but rather continue to benefit the candidate who was placed at the top of the ballot paper. Alternatively, a “Robson rotation” system could be introduced where names are rotated on the ballot paper, distributing the effects amongst all candidates.

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Appendix A

Dependent Var: 1st Preference Votes

	A	B	C	D
	OLS	**Fixed Effects**	**Fixed Effects**	**Fixed Effects**
1st POSITION	655.0***	507.9***	507.9***	498.4**
	(120.5)	(112.5)	(166.8)	(252.2)
INCUMBENT TD	3955***	2870***	2870***	774.3***
	(68.85)	(79.51)	(123.9)	(151.2)
GOV PARTY TD	318.9***	-833.4***	-833.4***	-465.5***
	(84.94)	(85.09)	(95.00)	(97.86)
GOV MINISTER	1030***	1521***	1521***	743.0**
	(242.0)	(250.1)	(305.6)	(324.1)
POLITICAL PARTY LEADER	2963***	3640***	3640***	1701**
	(525.3)	(497.9)	(657.9)	(749.5)
Constant	4496***	3621***	3621***	6986***
	(209.8)	(677.1)	(977.5)	(1732)
Observations	4807	4807	4807	4807
R-squared	0.462	0.651	0.651	0.868

Dependent Var: Log(Share of 1st Preference Votes)

	A	B	C	D
VARIABLES	**OLS**	**Fixed Effects**	**Fixed Effects**	**Fixed Effects**
1st POSITION	0.228***	0.175***	0.175***	0.0789
	(0.0428)	(0.0370)	(0.0542)	(0.0550)
INCUMBENT TD	1.300***	0.795***	0.795***	0.180***
	(0.0221)	(0.0251)	(0.0426)	(0.0315)
GOV PARTY TD	0.391***	-0.235***	-0.235***	-0.0986***
	(0.0283)	(0.0246)	(0.0275)	(0.0225)
GOV MINISTER	-0.0390	0.212***	0.212***	0.109**
	(0.0369)	(0.0403)	(0.0494)	(0.0503)
POLITICAL PARTY LEADER	0.636***	0.720***	0.720***	0.271**
	(0.0778)	(0.0859)	(0.112)	(0.120)
Constant	-2.631***	-3.166***	-3.166***	-1.482***
	(0.0603)	(0.322)	(0.463)	(0.540)
Observations	4807	4807	4807	4807
R-squared	0.389	0.663	0.663	0.955

Columns B and C use Constituency, Election, No. of Candidates and Political Party fixed effects.

Column D adds Individual Candidate fixed effects to Column C

Columns A and B cluster at the Constituency Election level. C and D cluster at the constituency election and candidate level

Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Appendix B

	1st Preference Votes				Log(Share of 1st Preference Votes)			
	A	B	C	D	A	B	C	D
	OLS	FE	FE	Fe	OLS	FE	FE	FE
Position 2	-382.7**	-393.3***	-393.3**	-516.4**	-0.120*	-0.138***	-0.138**	-0.0831
	(166.4)	(151.4)	(185.5)	(259.8)	(0.0628)	(0.0505)	(0.0612)	(0.0553)
Position 3	-611.0***	-507.6***	-507.6***	-466.1	-0.191***	-0.153***	-0.153**	-0.0802
	(149.6)	(137.9)	(183.6)	(308.1)	(0.0606)	(0.0508)	(0.0663)	(0.0712)
Position 4	-567.8***	-508.1***	-508.1***	-538.5	-0.169***	-0.160***	-0.160**	-0.0658
	(161.2)	(147.1)	(192.0)	(342.3)	(0.0642)	(0.0515)	(0.0673)	(0.0762)
Position 5	-773.2***	-613.2***	-613.2***	-732.3**	-0.220***	-0.168***	-0.168**	-0.139
	(162.0)	(147.4)	(187.1)	(360.0)	(0.0641)	(0.0543)	(0.0697)	(0.0857)
Position 6	-722.3***	-498.6***	-498.6**	-880.2**	-0.201***	-0.114**	-0.114	-0.163*
	(160.3)	(150.0)	(203.3)	(407.8)	(0.0597)	(0.0530)	(0.0710)	(0.0903)
Position 7	-763.1***	-451.7***	-451.7**	-755.2*	-0.295***	-0.150***	-0.150**	-0.133
	(160.1)	(144.8)	(190.6)	(418.7)	(0.0689)	(0.0570)	(0.0753)	(0.0978)
Position 8	-655.5***	-523.4***	-523.4***	-993.8**	-0.256***	-0.206***	-0.206***	-0.206*
	(162.1)	(146.6)	(193.0)	(432.8)	(0.0678)	(0.0563)	(0.0697)	(0.106)
Position 9	-756.6***	-554.7***	-554.7***	-1114**	-0.283***	-0.211***	-0.211***	-0.220**
	(169.1)	(152.0)	(197.1)	(468.0)	(0.0732)	(0.0597)	(0.0730)	(0.110)
Position 10	-695.9***	-624.1***	-624.1***	-995.2*	-0.262***	-0.256***	-0.256***	-0.166
	(179.7)	(164.8)	(201.4)	(510.8)	(0.0795)	(0.0657)	(0.0776)	(0.117)
Position 11	-605.2***	-319.2	-319.2	-619.1	-0.376***	-0.264***	-0.264***	-0.122
	(216.8)	(200.1)	(234.4)	(524.1)	(0.0999)	(0.0802)	(0.0931)	(0.128)
Position 12	-822.6***	-548.5***	-548.5**	-1162**	-0.322***	-0.261***	-0.261***	-0.256*
	(212.1)	(182.6)	(224.6)	(562.9)	(0.104)	(0.0783)	(0.0912)	(0.139)
Position 13	-964.6***	-783.1***	-783.1***	-1286**	-0.382***	-0.313***	-0.313***	-0.262*
	(228.7)	(203.7)	(244.2)	(585.3)	(0.116)	(0.0928)	(0.103)	(0.156)
Position 14+	-608.5***	-456.5**	-456.5*	-739.4	-0.288**	-0.217**	-0.217**	-0.222
	(226.2)	(214.5)	(245.8)	(641.6)	(0.115)	(0.0958)	(0.110)	(0.165)
Incumbent TD	3947***	2867***	2867***	772.9***	1.297***	0.793***	0.793***	0.181***
	(69.22)	(79.65)	(124.0)	(151.1)	(0.0224)	(0.0251)	(0.0426)	(0.0314)
Gov Party	311.5***	-836.0***	-836.0***	-469.4***	0.387***	-0.237***	-0.237***	-0.0987***
	(84.46)	(84.96)	(94.96)	(97.25)	(0.0282)	(0.0247)	(0.0275)	(0.0226)
Gov Minister	1032***	1514***	1514***	740.1**	-0.0367	0.210***	0.210***	0.107**
	(242.2)	(250.4)	(305.1)	(324.9)	(0.0365)	(0.0396)	(0.0486)	(0.0509)
Party Leader	2999***	3653***	3653***	1719**	0.646***	0.718***	0.718***	0.274**
	(527.2)	(497.6)	(657.9)	(758.6)	(0.0787)	(0.0865)	(0.114)	(0.124)
Constant	5059***	4048***	4048***	7087***	-2.450***	-3.018***	-3.018***	-1.479***
	(233.0)	(693.9)	(1007)	(1720)	(0.0691)	(0.324)	(0.463)	(0.534)
Observations	4807	4807	4807	4807	4807	4807	4807	4807
R-squared	0.464	0.652	0.652	0.869	0.392	0.664	0.664	0.956

Columns B and C use Constituency, Election, No. of Candidates and Political Party fixed effects.

Column D adds Individual Candidate fixed effects to Column C

Columns A and B cluster at the Constituency Election level. C and D cluster at the constituency election & candidate level

Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Appendix C

	3 Seat Constituencies			4 Seater Constituencies		
	A FE	B FE	C logit	A FE	B FE	C logit
1st Position	0.0113*	0.0113	0.0510	0.0130**	0.0130**	0.300
	(0.00616)	(0.00882)	(0.221)	(0.00543)	(0.00602)	(0.293)
Incumbent TD	0.0933***	0.0933***	2.814***	0.0590***	0.0590***	2.181***
	(0.00549)	(0.00821)	(0.211)	(0.00354)	(0.00465)	(0.172)
Gov. Party	-0.0214***	-0.0214***	-0.643***	-0.0196***	-0.0196***	-0.622***
	(0.00495)	(0.00533)	(0.186)	(0.00406)	(0.00430)	(0.172)
Gov Minister	0.0345**	0.0345*	0.612	0.0318***	0.0318***	0.799
	(0.0152)	(0.0182)	(0.558)	(0.0111)	(0.0121)	(0.559)
Party Leader	0.0880***	0.0880***	-	0.0999***	0.0999***	4.088**
	(0.0328)	(0.0251)	-	(0.0170)	(0.0236)	(1.629)
Constant	0.107***	0.107***	-0.148	0.0245***	0.0245***	-1.018***
	(0.0299)	(0.0328)	(0.370)	(0.00662)	(0.00838)	(0.236)
Observations	1265	1265	1236	1655	1655	1652
R-squared	0.672	0.672	0.651	0.655	0.655	0.651

	5 Seater Constituencies		
	A FE	B FE	C logit
1st Position	0.0145***	0.0145**	0.471**
	(0.00419)	(0.00596)	(0.214)
Incumbent TD	0.0567***	0.0567***	2.526***
	(0.00278)	(0.00369)	(0.157)
Gov. Party	-0.0157***	-0.0157***	-0.820***
	(0.00293)	(0.00310)	(0.144)
Gov Minister	0.0389***	0.0389***	1.531***
	(0.00878)	(0.00940)	(0.509)
Party Leader	0.0623***	0.0623***	2.440*
	(0.0178)	(0.0183)	(1.452)
Constant	0.0461**	0.0461*	-1.326***
	(0.0198)	(0.0257)	(0.248)
Observations	1887	1887	1861
R-squared	0.651	0.651	

Regressions use Constituency, Election, No. of Candidates and Political Party fixed effects.
Column B adds Individual Candidate fixed effects to Column A
Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Appendix D

	(1) Votes	(2) Share of Votes	(3) Log(Share of Votes)
1977 Election	856.8***	0.0240***	0.308***
	(310.6)	(0.00921)	(0.104)
1981 Election	401.7	0.00940	0.130
	(428.5)	(0.0104)	(0.144)
Feb 1982 Election	-106.7	-0.00563	0.0665
	(345.4)	(0.00858)	(0.105)
Nov 1982 Election	511.9	0.0126	0.148
	(373.3)	(0.00985)	(0.125)
1987 Election	777.0*	0.0158	0.247*
	(457.8)	(0.0116)	(0.144)
1989 Election	474.0	0.0115	0.0397
	(434.2)	(0.0122)	(0.169)
1992 Election	801.6**	0.0215**	0.318**
	(349.8)	(0.00895)	(0.124)
1997 Election	800.0**	0.0205**	0.227*
	(314.9)	(0.00812)	(0.129)
2002 Election	398.6	0.00799	0.110
	(437.0)	(0.0102)	(0.154)
2007 Election	764.5*	0.0183**	0.250**
	(408.9)	(0.00877)	(0.109)
2011 Election	-144.5	-0.00839	0.0402
	(478.8)	(0.0101)	(0.143)
Inumbent TD	2875***	0.0681***	0.796***
	(125.1)	(0.00310)	(0.0420)
Government Party	-824.4***	-0.0190***	-0.232***
	(94.66)	(0.00226)	(0.0274)
Gov Minister	1525***	0.0365***	0.210***
	(300.8)	(0.00694)	(0.0491)
Party Leader	3634***	0.0779***	0.718***
	(646.0)	(0.0149)	(0.111)
Constant	3633***	0.155***	-3.133***
	(985.0)	(0.0232)	(0.462)
Observations	4807	4807	4807
R-squared	0.652	0.673	0.663
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			
Chi2(10)	9.98	15.01	8.1
Prob>chi2	0.4421	0.1317	0.6192

Appendix E

	(1) Votes	(2) Share of Votes	(3) Log(Share of Votes)
Fianna Fail	816.5***	1.832***	0.132***
	(180.0)	(0.435)	(0.0356)
Fine Gael	223.4	0.891*	0.0238
	(187.6)	(0.484)	(0.0415)
Labour Party	-796.0*	-1.723*	-0.250*
	(409.2)	(0.987)	(0.149)
Independents	653.1**	1.118	0.629***
	(280.1)	(0.706)	(0.152)
Small Parties	699.5**	1.345**	0.250**
	(295.9)	(0.636)	(0.104)
Incumbent TD	2847***	6.717***	0.778***
	(75.21)	(0.194)	(0.0232)
Government TD	-824.1***	-1.885***	-0.228***
	(80.63)	(0.187)	(0.0233)
Government Minister	1428***	3.441***	0.189***
	(224.3)	(0.505)	(0.0338)
Party Leader	3491***	7.519***	0.665***
	(458.9)	(0.990)	(0.0758)
Constant	6348***	20.06***	-1.912***
	(284.0)	(0.485)	(0.0940)
Observations	4807	4807	4807
R-squared	0.639	0.666	0.654

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix F

	Fianna Fáil Candidates			Fine Gael Candidates		
	A	B	C	A	B	C
	Share of Votes	1st Preference Votes	Log(Share)	Share of Votes	1st Preference Votes	Log(Share)
1st Position	0.0366***	579.9**	0.115***	0.0236	280.5	0.0697*
	(0.0127)	(230.8)	(0.0393)	(0.0151)	(173.6)	(0.0405)
Incumbent TD	0.136***	2385***	0.503***	0.211***	2669***	0.632***
	(0.0124)	(218.0)	(0.0441)	(0.0174)	(198.0)	(0.0481)
Gov. Party	-0.121**	1192	-0.217	-0.0987**	-2649***	-0.253**
	(0.0554)	(1197)	(0.178)	(0.0411)	(580.2)	(0.122)
Gov Minister	0.131***	2406***	0.382***	0.183***	2392***	0.537***
	(0.0272)	(540.6)	(0.0765)	(0.0393)	(585.8)	(0.110)
Party Leader	0.359***	7493***	0.991***	0.196***	4804***	0.574**
	(0.100)	(2431)	(0.322)	(0.0701)	(1080)	(0.242)
Constant	0.138***	4135***	-2.290***	0.153***	4084***	-1.820***
	(0.0181)	(557.9)	(0.155)	(0.0159)	(349.7)	(0.0725)
Observations	1291	1291	1291	1115	1115	1115
R-squared	0.706	0.647	0.635	0.750	0.751	0.685

	Independent Candidates		
	A	B	C
	Share of Votes	1st Preference Votes	Log(Share)
1st Position	0.0147	82.62	0.103
	(0.0332)	(158.0)	(0.135)
Incumbent TD	0.632***	4967***	2.659***
	(0.0548)	(700.5)	(0.213)
Constant	0.109*	1198**	-2.960***
	(0.0568)	(586.1)	(0.259)
Observations	1025	1025	1025
R-squared	0.615	0.585	0.490

Regressions use Constituency, Election, No. of Candidates and Political Party fixed effects.
Column B adds Individual Candidate fixed effects to Column A
Robust Standard errors in parentheses, *** P<0.01, ** P<0.05, * P<0.1

Appendix G

1. Féach chuige go bhfuil an marc oifigiúil ar an bpaipear.
2. Marcáil an figiúr 1 sa bhosca le hais ghrianghraf an chéad iarrthóra is rogha leat, marcáil an figiúr 2 sa bhosca le hais grianghraf an dara hiarrthóra do dhara rogha, agus mar sin de.
3. Fill an páipéar ionas nach bhfeicfear do vóta. Taispeáin an taobh eile *den phaipéar* don oifigeach ceannais, agus cuir sa bhosca balloide é.

INSTRUCTIONS

1. See that the official mark is on the paper.
2. Mark 1 in the box beside the photograph of the candidate of your first choice, mark 2 in the box beside the photograph of the candidate of your second choice, and so on.
3. Fold the paper to conceal your vote. Show the *back of the paper* to the presiding officer and put it in the ballot box.

GREEN PARTY	**DE BÚRCA - GREEN PARTY** (DÉIRDRE GEARÓIDÍN DE BÚRCA of 137 Hollybrook Park, Southern Cross, Bray, Co. Wicklow; Psychologist)	
	FOX - NON-PARTY (MILDRED FOX of Lower Calary, Kilmacanogue, Co. Wicklow)	
	HYLAND - NON-PARTY (BARBARA MARY HYLAND of 9 Duncairn Terrace, Bray, Co. Wicklow; Widow, O.A.P.)	
FIANNA FÁIL	**JACOB - FIANNA FÁIL** (JOE JACOB of Main Street, Rathdrum, Co. Wicklow; Minister of State)	
Sinn Féin	**KEANE - SINN FÉIN** (MAIREAD KEANE of 14 Thornhill View, Bray, Co. Wicklow; Sinn Féin Activist)	
	KEARNS - NON-PARTY (ROBERT KEARNS of 4 Castle Park, Wicklow, Co. Wicklow; Carpenter)	
	KEDDY - NON-PARTY (CHARLIE KEDDY of Sea Road, Kilcoole, Co. Wicklow; Plumber)	
Labour	**KELLY - THE LABOUR PARTY** (NICKY KELLY of "Aille", Highfield Avenue, Arklow, Co. Wicklow; Full Time Public Representative)	
SWP	**KENNEDY - SOCIALIST WORKERS' PARTY (S.W.P.)** (CATHERINE KENNEDY of 31 Old Court Drive, Bray, Co. Wicklow)	
	KENNY - NON-PARTY (BRIAN KENNY of 17 Heatherwood, Boghall Road, Bray, Co. Wicklow; Sales Manager)	
Labour	**McMANUS - THE LABOUR PARTY** (LIZ McMANUS of 1 Martello Terrace, Bray, Co. Wicklow; Full Time Public Representative)	
fine gael	**O'ROURKE - FINE GAEL** (RAYMOND JOHN O'ROURKE of 5 Cuala Road, Bray, Co. Wicklow)	

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