# The Effect of Ballot Order: Evidence from the Spanish Senate<sup>\*</sup>

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#### PRELIMINARY AND INCOMPLETE

#### Abstract

This paper analyzes the relevance of ballot order in Spanish Senate elections. We use data from elections held between 1996 and 2008, when the order of parties on the ballot was random. We find that ballot order significantly affects the number of votes, as well as the number of seats, obtained by parties. In particular, for candidates from the main two parties, being placed at the beginning of the ballot is associated with an increase of two percentage points in votes (relative to being placed at the middle of the ballot). Given the distortion introduced by ballot order in Senate elections, we propose that the Senate ballot order be randomized and multiple copies of the ballot printed.

**Keywords:** voting behavior, randomized natural experiment, ballot order **JEL Classification:** C21, D72.

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### 1 Introduction

Electoral results in democratic systems should purely reflect voters' preferences. However, a poorly designed ballot might have an influence on the number of votes obtained by political parties. Ample evidence from many countries suggests that being placed at the top of the ballot increases the share of votes received (Koppell and Steen 2004, Leigh and King 2008).

In this paper we analyze the effect of ballot order in elections to the Spanish Senate. Starting with the first democratic elections held in Spain in 1977, ballot order was randomly determined (Figure 1). A ballot reform was introduced in 2010 mandating party lists to be ordered on the ballot according to the number of votes obtained in the previous election in that constituency (Figure 2). This paper assesses (i) the effects of ballot order, and (ii) the potential effects of this reform.

Given that ballot order was random before the reform was introduced, it is methodologically simple to analyze the effect of ballot party order on votes. Our evidence suggests that the two main parties experience an increase of approximately two percentage points in votes relative to the votes they would have received had they been placed in the middle of the ballot. This result is significant at the 2 percent level. In aggregate terms, in a country with 25 million voters, we estimate that the reform will provide the two main parties with approximately half a million more votes at the expense of the rest of the parties. Moreover, ballot order also significantly affects the chances of success of Senate candidates. This might be an issue particularly in those constituencies where a third party typically obtains a substantial number of votes.

The structure of the paper is as follows. Section 2 describes the data and provides descriptive statistics, and Section 3 analyzes the empirical evidence. Finally, Section 4 concludes and provides policy implications.

#### 2 Data

#### 2.1 Province level

We use electoral outcome information from national elections from 1993 through 2008.<sup>1</sup> Table 1 shows descriptive statistics for the variables used in the paper. In panel 1 we display electoral data at the province level. In the average province, the electoral roll is composed of around six hundred thousand people, with voter turnout at 74%. On average there are approximately 3% of void votes and 2.2% of blank votes.

We have gathered information on all Senate ballots for elections since 1996 available at the Ministry of the Interior archives. In particular, we have information on ballots for all constituencies for the years 1996 and 2008, and ballots for 30 out of 52 constituencies for the 2004 election. The ballots for all constituencies in the 2000 election were missing from the archives. In total, we have information on 148 ballots (for148 constituencies) from Senate elections held between 1996 and 2008, containing 2,383 party lists with a total of 4,286 individual candidates.

In the last three rows of panel 1 in Table 1 we show ballot information at the province level. In our database, the average ballot has about five rows and four columns. There are between two and seven rows in a ballot, and between one and six columns.

<sup>&</sup>lt;sup>1</sup>The data come from the Ministry of the Interior. Available at http://www.elecciones.mir.es/MIR/jsp/resultados/index.htm (retrieved December 2009).

The average ballot includes 16 parties. The maximum number of parties listed in a ballot during the period we study is 38, corresponding to Madrid for the 2008 election.

### 2.2 Party-list level

In panel 2 in Table 1 we display information at the party-list level. *Absolute party* order is the number (position) assigned to every political party in the ballot (numbers for each party are printed on the ballot, running from left to right and top to bottom; see Figure 1 for a sample ballot for the province of Avila in 2008). *Absolute party order* is the outcome of a lottery. We normalize this measure to be between zero (for the first party on the ballot) and one (for the last party on the ballot) and call it *Party order*. The average party thus has a value equal to 0.5.

The last row in panel 2 shows information on parties' votes at the House of Representatives: the average party receives roughly 7% of votes.

## 2.3 Candidate level

In panel 3 in Table 1 we show information at the candidate level. The average Senate candidate obtains close to 9% of votes and wins a seat in 12% of cases. About 9% of candidates in our sample run for the Socialist Party (the main left-wing party, *Partido Socialista Obrero Español*); another 9% run for the People's Party (the main right-wing party, *Partido Popular*).

# 3 Empirical analysis

In this section, first we explain our identification strategy and we check that the lottery assigning parties on the ballot is indeed random. Then we test whether parties' claims that larger ballots lead to more void and blank votes are correct. Finally, we examine the effect of ballot order on votes and seats.

### 3.1 Identification strategy

The identification strategy in this paper relies on the fact that the order of parties on the ballot over the period we study was determined by a lottery. Here we show that the order is indeed random (Table 2). First we examine whether the two main parties are assigned to better places on the ballot. As shown in column (1), neither the Socialist Party nor the People's Party are. In column (2) we regress *Party order* also on votes in the previous House election: if any pattern could be found, that would be evidence against the randomness of the lottery. As can be seen in Table 2, consistent with the lottery being indeed random, party order bears no relationship with votes in the previous election.

### 3.2 Determinants of void and blank votes

As explained in the Introduction, one of the rationales that has been put forward for ballot reform has been the claim that the large size of the ballot leads to many void and blank votes. To the best of our knowledge, there does not exist any empirical evidence supporting this claim. We check if this is true by regressing the percentage of void votes on the number of parties on the ballot (more parties means a larger ballot). We present the results in Table 3. In column (1), the number of void votes significantly decreases in the number of parties: if anything, a larger ballot is associated with fewer void votes. This is consistent with the findings in Knack and Kropf (2003). However, this relationship disappears once we consider province fixed-effects (column (2)). Results are similar if we use as proxy for size the number of rows and the number of columns in the ballot. We fail to find any relationship between the positions of the two main parties on the ballot and the percentage of void votes.

In columns (3) and (4) we run similar regressions, now using the percentage of blank votes as dependent variable instead. There is no relationship between the percentage of blank votes and the size of the ballot or the position of the two main parties on the ballot. In sum, the evidence does not support the parties' claims that a large ballot leads to void and/or blank votes.

#### 3.3 Does party order affect voting?

There is a large literature for a number of countries suggesting that ballot order affects electoral results (King and Leigh 2009, Koppell and Steen 2004, Miller and Krosnik 1998). Next we would like to see if the ballot order of a party has any effect on the votes it receives. For this purpose we run the regression:

$$Votes_{ispt} = \alpha_{pt} + \gamma Party \ order_{spt} + u_{ispt} \tag{1}$$

where  $Votes_{ispt}$  denotes the share of votes of candidate *i* running for party *p* in constituency *s* during (election) year *t*,  $\alpha_{pt}$  is a party and year fixed-effect, to control for the general support obtained by each party in a given election in the country as a whole, and *Party order<sub>spt</sub>* is the ballot order of the party *p* in constituency *s* in year *t*. We cluster the standard errors by constituency and year.

In columns (1) through (3) of Table 4 we show the results from running the above regression for our sample of candidates. In column (1) we run the regression using the whole sample. For the average candidate, there is a difference of 1 percentage point (approximately 10%) between being at the beginning of the ballot (upper left corner) and being at the bottom of the ballot. This result is significant at the 5 percent level. Next we split the sample between candidates running for the two main Spanish parties (the Socialist Party and the People's Party), and the rest of the parties (henceforth minor parties). The negative relationship between party order and votes is present in both subsamples. For candidates running for the main two parties, order on the ballot can affect votes in up to 4 percentage points (about 10%). For candidates running for minor parties, the difference between being at the beginning of the ballot and the bottom of the ballot is of 0.4 percentage points (approximately 20%) more votes. Relatively speaking, candidates from minor parties are more affected by their ballot order.

In columns (4) through (6) of Table 4 we run the same regression, now weighting observations by the number of voters in the province. That is, this regression considers how much more likely voters are to vote for candidates according to their party order. The probability that a voter casts her vote for a certain party is 4 percentage points larger if her party is placed at the beginning of the ballot. The effect is of similar magnitude for minor parties' voters (column (5)) and main parties' voters (column (6)).

In Table 5 we investigate whether ballot order affects which candidates get elected. The chances of success of the average candidate increase by 4 percentage points if her party is placed at the beginning of the ballot (relative to the chances she would have had, had her party had been placed at the bottom). For candidates running for the main two parties, the effect is of 15 percentage points. For minor parties' candidates, it is 1 percentage point.

#### 4 Conclusions

Our paper studies the relationship between ballot order and electoral results in Spanish Senate elections. We find that ballot order significantly affects electoral results, both statistically and economically. For the average candidate, the party's ballot order can increase votes up to 1 percentage point. The effect can be as large as 4 percentage points for candidates from the two main parties.

Because ballot order is so important in determining votes, ballots should be designed in a way that no party can take advantage of the ballot order. In Spain, before 2010, parties that were lucky enough to be (randomly) placed at the beginning of the ballot were getting "too many" votes. With the new system, it will be the two main parties who will benefit from the ballot order effect. In order to eliminate the existing ballot order effect in Spanish Senate elections, we propose ballot order rotation: ballot positions are rotated across parties on the ballot, and multiple versions printed, so that every party tops the ballot as often as every other party.<sup>2</sup>

In order to neutralize the ballot order effect, following the California and Australia cases, the Senate ballot order should be randomized and multiple copies of the ballot should be printed, as many as parties are running for election in the constituency.

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<sup>&</sup>lt;sup>2</sup>The system is called Robson rotation, after Neil Robson, the Liberal member of the House of Assembly who introduced it in Tasmanian elections in 1979 (Tasmanian Parliamentary Library, http://www.parliament.tas.gov.au/tpl/Backg/HAElections.htm, retrieved June 9, 2009). A rotating ballot is presently used in some elections in Australia, as well as in the United States (King and Leigh 2009, Alvarez et al. 2006).

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	Mean (1)	St. dev. (2)	Minimum (3)	Maximum (4)
1. Province level (N=148)				
Electoral roll (1,000s)	578	767	8	4459
Voter turnout (%)	74.24	6.31	52.54	84.25
Void votes (%)	2.97	1.15	1.23	10.46
Blank votes $(\%)$	2.25	0.68	0.86	4.33
Number of parties in the ballot	16.11	6.09	2	38
Number of rows in the ballot	4.74	0.67	2	7
Number of columns in the ballot	3.61	1.16	1	6
2. Party level (N=2383)				
Votes in House of Representatives (%)	15.36	7.49	2.96	43.57
Absolute party order	9.69	6.42	1	38
Party order	0.50	0.31	0	1
3. Candidate level (N=4286)				
Votes in Senate (%)	8.84	15.89	0.00	59.94
Obtains seat	0.12	0.33	0	1
Socialist Party candidate	0.09	0.29	0	1
People's Party candidate	0.09	0.29	0	1

 Table 1: Descriptive statistics

*Notes*: Electoral and ballot information for all Spanish provinces for the years 1996 and 2008, and ballots for 30 out of 52 Spanish provinces for the 2004 election.

	(1)	(2)
Socialist Party candidate	-0.01	0.04
	(0.03)	(0.06)
People's Party candidate	0.01	0.07
	(0.03)	(0.07)
Votes obtained in the previous election		-0.00
		(0.00)
Constant	0.50***	0.50***
	(0.00)	(0.01)
Ν	4286	2012

#### Table 2: Random assignment

*Notes*: OLS regression, standard errors in parentheses. The dependent variable is Party order. *Party order* has been normalized to be between zero (for the first party in the ballot) and one (for the last party in the ballot).

Table 3:	Void and	blank	votes	
				_

	(1)	(2)	(3)	(4)
Number of parties	-0.04*	0.00	0.00	-0.02
	(0.02)	(0.04)	(0.01)	(0.02)
People's Party position in the ballot	0.22	-0.16	0.06	0.07
	(0.28)	(0.29)	(0.15)	(0.14)
Socialist's Party position in the ballot	-0.17	-0.35	-0.06	-0.26*
	(0.30)	(0.32)	(0.16)	(0.15)
Constant	$3.35^{***}$	$3.20^{***}$	$2.09^{***}$	$2.44^{***}$
	(0.34)	(0.55)	(0.18)	(0.26)
N	148	148	148	148

Notes: OLS regression, standard errors in parentheses. The dependent variable is the percentage of void votes in columns (1) and (2), and the percentage of blank votes in columns (3) and (4) in the constituency.

	All	Main parties	Other	All	Main parties	Other
	(1)	(2)	(3)	(4)	(5)	(6)
Party order	-1.06**	-3.74*	-0.37**	-3.95*	-3.87*	-4.53**
	(0.46)	(1.97)	(0.15)	(2.15)	(2.32)	(1.75)
Constant	9.37***	$41.38^{***}$	1.92***	$38.28^{***}$	$43.05^{***}$	$15.91^{***}$
	(0.22)	(0.95)	(0.09)	(1.00)	(1.10)	(0.99)
Voter weights	No	No	No	Yes	Yes	Yes
Ν	4286	806	3480	4286	806	3480

Table 4: Ballot order and votes

*Notes*: OLS regression, standard errors in parentheses. The dependent variable is the share of votes received by the candidate. *Party order* has been normalized to be between zero (for the first party in the ballot) and one (for the last party in the ballot). The observations in the regressions in columns (4) through (6) have been weighted by voting population.

Table 5: Ballot order and Senate seats

	All	Main parties	Other
	(1)	(2)	(3)
Party order	-0.04**	-0.15**	-0.01*
	(0.02)	(0.07)	(0.00)
Constant	$0.14^{***}$	$0.71^{***}$	0.01***
	(0.01)	(0.04)	(0.00)
Ν	4286	806	3480

*Notes*: OLS regression, standard errors in parentheses. The dependent variable is the share of votes received by the candidate. *Party order* has been normalized to be between zero (for the first party in the ballot) and one (for the last party in the ballot).

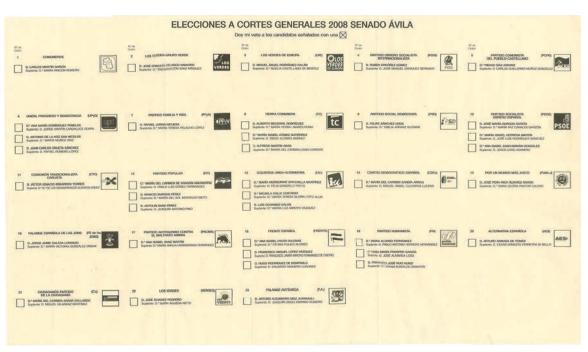


Figure 1: Senate Ballot, Avila 2008

#### ELECCIONES A CORTES GENERALES 2011 SENADO (ASTURIAS) Doy mi voto a los candidatos señalados con una: X (Recuerde que puede votar a un máximo de 3 candidatos en total, de la misma o distinta candidatura (Cualquier alteración en la papeleta determinará la nulidad del voto) PARTIDO SOCIALISTA OBRERO ESPAÑOL (PSOE) 2 PARTIDO POPULAR PSOE Don Vicente Alberto Álvarez Areces Don Isidro Fernández Rozada Doña María Carmen Sanjurjo González Doña Laura Sampedro Redondo Don Hugo Alfonso Morán Fernández Don Mario Arias Navia IZQUIERDA UNIDA DE ASTURIAS-IZQUIERDA XUNIDA D'ASTURIES: LA IZQUIERDA PLURAL 3 (IU-IX) (UPyD) UNIÓN PROGRESO Y DEMOCRACIA Don Humberto Rodriguez Solla Doña María Esther García López Don Constantino García Pérez Don Camilo Montes Díaz PARTIDO COMUNISTA DE LOS PUEBLOS (PCPE) DE ESPAÑA ANDECHA ASTUR 5 (ANDECHA) Doña María Dolores Suárez Vallina Doña Ana María Turrero Orrio Don Mario Arbesú Iglesias Don Ramón Gerardo López García Doña Dulce María Gil Fernández Doña Laura Vázquez Martínez PARTIDO ANIMALISTA CONTRA EL MALTRATO ANIMAL 8 POR UN MUNDO MÁS JUSTO (PACMA) (PUM+J) PU MJ Don Pio Esteban Doce Artime Don Juan Ignacio Muñoa Abeytua Doña Carmen Anes López Don José Ignacio Jáuregui Angulo 10 SOLIDARIDAD Y AUTOGESTIÓN INTERNACIONALISTA PARTIDO HUMANISTA (PH) (SAIn) Don Rodrigo Calvo Eguren Don Benjamín González Miranda Doña Felicidad Miranda Martínez Doña María Josefa Vega Llano ANVERSO (compruebe reverso)

#### Figure 2: Senate Ballot, Asturias 2011