

## A Determining the final ranking

This Appendix describes some of the complications in determining the order in which candidates for a party with a given number of seats is elected—i.e., how the ballot paper rankings translate into the final ranking. The full procedure is stipulated in the Elections Act.

Starting with the 1998 election, voters can mark *one* preferred candidate on the ballot paper (so-called preference voting). The top of the final ranking is set based on the ranking of such preference votes, given that a candidate has reached the preference vote threshold of 5% of the party’s votes in the constituency, which must be at least 50 votes.

For candidates who do not reach the preference vote threshold (or for all candidates prior to the 1998 election), comparison numbers are calculated and ranked. The comparison numbers are calculated based on votes per ballot paper and the so-called “whole-number method”. In the case of one ballot paper per constituency, the ranking of comparison numbers simply boils down to the party’s ballot paper ranking of candidates who did not reach the preference vote threshold. These relatively simple cases constitute around 90%. Matters become much more complex in the case of multiple ballot papers per constituency. Comparison numbers and the associated final ranking then depend on a combination of the number of votes per ballot paper, the number of ballot papers and how high each candidate was ranked on the various ballot papers.

Additional complications in determining the final ranking arise when candidates are sufficiently highly ranked in several constituencies (or for several parties, although this rarely happens). This can for example happen as a consequence of their party running with the same ballot paper in several constituencies. This happens in around 30% of the cases. A candidate can only fill one seat. Any remaining seats are then assigned to someone else according to the procedure known as “double-election replacement”.

### A.1 Finding the borderline groups

When the final ranking is completely known, it is quite straightforward to determine which candidates constitute the borderline groups. However, not all data is in sufficient detail to allow for completely determining the final ranking. Hence, to find the borderline groups requires making some assumptions.

Due to the lack of ballot paper rankings, it is not possible to determine any borderline groups in the 1994 election. Also the 1991, 1998 and 2002 election data is in different levels of detail—the later the election, the more detailed the data.

For the 2002 election, data is sufficiently detailed to reproduce nearly the exact final ranking. The exception is preference votes, where the information

is limited to whether or not a candidate reached the threshold but not by how much. This hinders ranking of such candidates. This, in turn, implies that identifying a borderline elected is only possible when at least one candidate is elected via comparison numbers. This also implies that the borderline elected is never elected via preference votes but always via comparison numbers.

Determining the final ranking in the 2002 election by applying the rules as stipulated in the Elections Act to the various combinations of ballot paper rankings and ballot paper votes results in the error event that a candidate is labeled as elected in a particular *constituency* when in fact he is not, or vice versa, that amounts to 0.8%. The corresponding percentage at the *council* level is as low as 0.03.<sup>1</sup>

To identify the borderline groups in the 1991 and 1998 elections, some assumptions were needed about the interdependence of ballot papers in the case of multiple-constituency municipalities and/or constituency-overlapping ballot papers. Applying these assumptions for the 1998 election to the 2002 election results in about 90% identical borderline groups consisting of the sets of three candidates with  $rank^* = \{-2, -1, 0\}$ .

The majority of borderline groups are at the constituency level. However, when a ballot paper overlaps several constituencies, the group is at the municipality level. The reason is that it is hard to think of a candidate as being borderline elected in some constituency if other candidates on the same ballot paper were also elected, but in a different constituency. This can happen as a consequence of the double-election replacement procedure.

Candidates with missing values on either of the control variables are dropped in all estimations. Furthermore, only candidates from borderline groups that have a borderline elected are included. Groups missing a borderline elected mainly occur because the candidate is dropped due to missing values on control variables, or because no candidate within the group was elected via preference votes.

The final number of borderline elected candidates amounts to 1917, 1838 and 1837 from the 1991, 1998 and 2002 election, respectively. Because the preference votes were only introduced in 1998 and as only candidates elected via comparison numbers can be borderline elected, the 1991 number is somewhat larger.

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<sup>1</sup>These error events can be calculated using an indicator contained in the data for whether or not a candidate was elected.

## B Descriptive statistics

Table 1: Descriptive statistics of outcome variables for candidates in the borderline groups with  $rank^* = \{-2, -1, 0\}$

	Short run: 1–3 years/1 election later				
	mean	std.dev	min	max	obs
Average disposable income	1358.7	597.4	361.3	4059.3	16673
Average labor income	1730.6	1269.0	0.67	5697	16673
Average income from largest source	1576.8	1123.6	0	5220.7	16673
Run for municipal council	0.70	0.46	0	1	16754
Elected into municipal council	0.29	0.45	0	1	16754
	Medium run: 6–8 years/2 elections later				
	mean	std.dev	min	max	obs
Average disposable income	1477.7	736.5	377	5163.3	10915
Average labor income	1758.5	1449.3	0	6343.7	10915
Average income from largest source	1637.5	1298.9	0	5761.3	10915
Run for municipal council	0.51	0.50	0	1	11208
Elected into municipal council	0.20	0.40	0	1	11208
	Long run: 13–15 years/4 elections later				
	mean	std.dev	min	max	obs
Average disposable income	1764.1	925.6	436.3	6099	5283
Average labor income	1714.2	1692.4	0	7321.7	5283
Average income from largest source	1619.4	1539.4	0	6670	5283
Run for municipal council	0.31	0.46	0	1	5710
Elected into municipal council	0.11	0.31	0	1	5710

*Note:* The sample for short-run outcomes includes borderline groups from the 1991, 1998 and 2002 elections, the sample for medium-run outcomes includes borderline groups from the 1991 and 1998 elections and the sample for long-run outcomes includes borderline groups from the 1991 election. Income is measured in 100 SEK deflated to 2000 year values (9 SEK $\approx$ 1 USD), all other variables are indicator variables. Disposable income is net of taxes, whereas labor income income from largest source are gross measures.

*Source:* Statistics Sweden & The Swedish Election Authority.

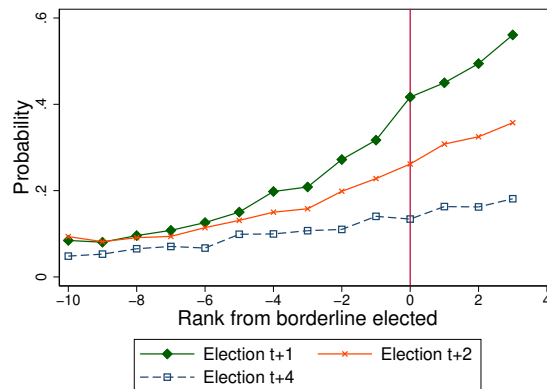
## C Additional results

Table 2: Robustness of t-statistics of effects on reelection probabilities

Cluster	Election $t+1$	Election $t+2$	Election $t+4$
	(1)	(2)	3)
Municipality	4.21	0.73	-0.37
$N_{clusters}$	290	289	285
Borderline group	4.10	0.73	-0.37
$N_{clusters}$	5596	3719	1881
Party-by-county	3.91	0.77	-0.38
$N_{clusters}$	147	147	147
County-by-election	3.97	0.76	-0.44
$N_{clusters}$	63	42	21
Observations	16754	11208	5710

*Note:* The table reports t-statistics and the number of clusters with different levels of clustering for estimated effects of being elected into a municipal council on the probability of being elected in the first (column 1), second (column 2) and fourth (column 3) subsequent election to a municipal council. All regressions include individual controls (see Table 11 in the paper).

Figure 1: Effects on reelection probabilities in groups with more elected candidates



*Note:* The figure plots means of local reelection probabilities by rank from borderline elected in election year  $t$ .

*Source:* Statistics Sweden & The Swedish Election Authority.

Table 3: Effects of the effects of being elected on reelection probabilities in uncertain elections

	(1)	(2)	(3)	(4)	(5)
	Election $t+1$				
elected	0.0583*** (0.0138)	0.0590*** (0.0162)	0.0472*** (0.0158)	0.0585*** (0.0202)	0.0420** (0.0186)
Observations	16754	12692	13283	7737	10080
	Election $t+2$				
elected	0.0112 (0.0155)	0.0244 (0.0180)	0.0105 (0.0170)	0.00843 (0.0228)	0.0279 (0.0200)
Observations	11208	8662	8947	5276	6934
	Election $t+4$				
elected	-0.00651 (0.0177)	-0.00920 (0.0215)	-0.00722 (0.0194)	0.00168 (0.0261)	-0.00351 (0.0230)
Observations	5710	4422	4604	2780	3581
Vote margin (%)	no restr.	no restr.	1	0.5	1
$ \Delta\text{seats}  \geq 1$	no	yes	no	no	yes
Individual controls	yes	yes	yes	yes	yes

*Note:* The table reports effects of being elected into a municipal council on the probability of being elected in the first (top panel), second (mid panel) and fourth (bottom panel) subsequent election to a municipal council. Column 1 reproduces the baseline results in columns 2, 4 and 6 of Table 11 in the paper. All regressions include individual controls (see Table 11 in the paper). Standard errors clustered on municipality are in parentheses. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively.

Table 4: Effects of being elected on reelection probabilities; allowing non-linear effects of  $rank^*$

	Election $t+1$		Election $t+2$		Election $t+4$	
	(1)	(2)	(3)	(4)	(5)	(6)
elected, $\bar{p} = 1$	0.153*** (0.00761)	0.102*** (0.00880)	0.0741*** (0.00796)	0.0415*** (0.00961)	0.0244*** (0.00812)	0.0202** (0.0101)
elected, $\bar{p} = 2$	0.0816*** (0.00929)	<b>0.0503***</b> <b>(0.0134)</b>	0.0250** (0.0103)	<b>0.00121</b> <b>(0.0149)</b>	<b>0.0157</b> <b>(0.0105)</b>	<b>-0.00225</b> <b>(0.0163)</b>
elected, $\bar{p} = 3$	<b>0.0533***</b> <b>(0.0123)</b>	0.0170 (0.0258)	<b>0.0114</b> <b>(0.0141)</b>	-0.0122 (0.0293)	0.00453 (0.0155)	-0.0185 (0.0361)
Observations	54798	32504	36430	21620	18239	10888
$rank^{star} \geq$	-10	-5	-10	-5	-10	-5
Individual controls	yes	yes	yes	yes	yes	yes
AIC-preferred $\bar{p}$	3	2	3	2	2	2

*Note:* The table reports effects of being elected into a municipal council on the probability of being elected in the first (columns 1–2), second (columns 3–4) and fourth (columns 5–6) subsequent election to a municipal council. The AIC-preferred polynomial is in bold. All regressions include individual controls (see Table 11 in the paper). Standard errors clustered on municipality are in parentheses. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively.

Table 5: Effects on reelection probabilities in groups with with more elected candidates

	Election $t+1$		Election $t+2$		Election $t+4$	
	(1)	(2)	(3)	(4)	(5)	(6)
elected	0.0318* (0.0164)	0.0346** (0.0137)	-0.0131 (0.0192)	-0.00848 (0.0149)	-0.0328 (0.0215)	-0.0138 (0.0162)
rank*	0.0580*** (0.00960)	0.0568*** (0.00514)	0.0407*** (0.0108)	0.0369*** (0.00516)	0.0311*** (0.0116)	0.0161*** (0.00566)
rank* $\times$ elected	-0.00205 (0.0184)	0.00155 (0.00950)	-0.0151 (0.0212)	-0.00773 (0.0104)	-0.0317 (0.0223)	-0.00351 (0.0113)
Observations	12849	18006	8840	12386	5065	7103
Included rank*:	$\pm 2$	$\pm 3$	$\pm 2$	$\pm 3$	$\pm 2$	$\pm 3$
Individual controls	yes	yes	yes	yes	yes	yes

*Note:* The table reports effects of being elected into a municipal council on the probability of being elected in the first (columns 1-2), second (columns 3-4) and fourth (columns 5-6) subsequent election to a municipal council. All regressions include individual controls (see Table 11 in the paper). Standard errors clustered on municipality are in parentheses. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively.



Table 6: Placebo estimates on the probability of being elected in future elections to a municipal council

	Election $t+1$		Election $t+2$		Election $t+4$	
	(1)	(2)	(3)	(4)	(5)	(6)
elected <sup>placebo</sup>	0.0196* (0.0117)	0.0264** (0.0118)	0.00949 (0.0138)	0.0230* (0.0132)	0.0263 (0.0167)	-0.0120 (0.0150)
rank*	0.0469*** (0.00664)	0.0209*** (0.00691)	0.0326*** (0.00767)	0.0108 (0.00756)	-0.0000506 (0.00905)	0.0120 (0.00870)
Observations	16450	16085	10958	10633	5498	5268
Cut-off at rank*:	-1	-2	-1	-2	-1	-2
Individual controls	yes	yes	yes	yes	yes	yes

*Note:* The table reports placebo estimates of being elected into a municipal council on the probability of being elected in the first (columns 1–2), second (columns 3–4) and fourth (columns 5–6) subsequent election to a municipal council. All regressions include individual controls (see Table 11 in the paper). Standard errors clustered on municipality are in parentheses. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% level, respectively.