

Online Appendix

This appendix consists of two parts:

- (1) Section A presents the results of the balance checks.
- (2) Section B presents the full results and robustness checks.

A Balance check

If the choice of which provinces would elect more deputies in midterm than in concurrent years was decided randomly, provinces that elect more representatives in midterm years⁸⁰ should not differ systematically from those that have higher magnitudes in concurrent years.⁸¹ To check whether this is the case, I collected data on 38 pre-treatment covariates and examined the difference in means between both groups of provinces.

These covariates include (a) the dependent variables, as measured in the 1983 election;⁸² (b) the pseudo-outcomes reported in the robustness checks, again measured in 1983;⁸³ (c) a host of electoral outcomes measured in 1983, including the (combined) vote share of the PJ and the UCR and the share of the vote received by the largest third party;⁸⁴ (d) several demographic variables, such as population (density), taken from the 1980 census; (e) a wide array of geographic and historical variables, including area, average latitude, elevation, precipita-

⁸⁰Catamarca, La Pampa, Neuquén, San Luis, Santa Cruz, Chaco, Entre Ríos and the Ciudad de Buenos Aires (see Table 1).

⁸¹Chubut, Formosa, La Rioja, Río Negro, Tierra del Fuego, Corrientes, Misiones, Salta, Santiago del Estero, Tucumán and Santa Fe.

⁸²Source: Andy Tow's Electoral Atlas (<http://andytow.com/atlas/totalpais/>).

⁸³Sources: BASECIAP (<http://www.econ.uba.ar/www/institutos/admin/ciap/baseciap/>) for the financial variables, and Argentina's statistical institute (INDEC; <http://www.indec.gob.ar/>) for infant mortality.

⁸⁴Source: Andy Tow.

tion, etc, as well as dummies for the country's main geographic regions;⁸⁵ and (f) several measured of provinces' political (over-)representation in the national Congress in 1983.⁸⁶

Table A1 displays the means for both groups of provinces, as well as the difference between the two and the exact p -values for the sharp null hypothesis of no effect for any province. Given that the randomization had to respect some restrictions — notably, the number of deputies elected in concurrent and midterm years had to be equal —,⁸⁷ I calculated the p -values using simulations. First, I sampled 100,000 vectors of eight 1's and ten 0's (or ten 1's and eight 0's), adding Tierra del Fuego to the ten-province group.⁸⁸ Each of these vectors represents a different random allocation of the provinces into two groups. Second, for every draw I calculated the difference in means for each variable, and saved these values. The p -values reported in Table A1 and Figure 2 indicate the proportion of draws in which the absolute value of the difference in means in the actual sample was smaller than the absolute value of the simulated differences in means. For example, the p -value of 0.89 for the log of population in 1980 indicates that approximately 89,000 simulations produced a difference in means that was equal to or larger in size than the one observed in the sample.

⁸⁵Sources: INDEC and Mitton 2016. I am thankful to Todd Mitton for kindly sharing this data.

⁸⁶Sources: Andy Tow and INDEC.

⁸⁷Dal Bó and Rossi 2011.

⁸⁸This reflects the rules of the original draw that determined whether the deputies elected in 1983 would receive a two- or a four-year mandate: first, the number of deputies elected in concurrent and midterm years had to be equal; and second, the two deputies from Tierra del Fuego had to be elected simultaneously. That is, before Tierra del Fuego became a province there was a group of ten provinces with a higher magnitude in concurrent years, a group of eight with a higher magnitude in midterm years, and a district that elected its two only representatives in midterm years. Upon becoming a province, Tierra del Fuego began to elect three additional representatives in concurrent years, and thus it became a member of the former group.

Table A1: *Checking covariate balance*

| (a) Outcome variables (1983) | large midterm mean | large concurrent mean | difference | p-value |
|-------------------------------------|-----------------------|--------------------------|------------|---------|
| # lists running | 11.50 | 12.00 | -0.50 | 0.68 |
| ENPV | 2.69 | 2.71 | -0.02 | 0.96 |
| vote first two | 84.49 | 84.99 | -0.50 | 0.93 |
| # lists seats | 2.62 | 2.18 | 0.44 | 0.30 |
| ENPS | 2.22 | 2.07 | 0.14 | 0.46 |
| Gallagher index | 7.97 | 9.38 | -1.41 | 0.47 |
| (b) Pseudo-outcomes (1983) | | | | |
| revenues per capita (log) | 7.16 | 7.09 | 0.07 | 0.82 |
| % own revenues | 19.56 | 14.80 | 4.76 | 0.62 |
| % royalties | 12.78 | 9.68 | 3.10 | 0.72 |
| % automatic transfers | 28.50 | 33.99 | -5.50 | 0.05 |
| % discretionary transfers | 38.83 | 41.00 | -2.17 | 0.80 |
| infant mortality rate (per 1,000) | 35.50 | 39.52 | -4.02 | 0.37 |
| (c) Electoral outcomes (1983) | | | | |
| % vote PJ (1983) | 39.02 | 43.26 | -4.24 | 0.34 |
| % vote UCR (1983) | 42.93 | 40.10 | 2.83 | 0.43 |
| % vote PJ+UCR (1983) | 81.95 | 83.36 | -1.41 | 0.80 |
| vote third party | 11.81 | 10.65 | 1.16 | 0.81 |
| (d) Demographics (1980) | | | | |
| population (1980) (log) | 12.93 | 12.99 | -0.07 | 0.89 |
| population density (1980) (log) | 2.10 | 1.69 | 0.41 | 0.79 |
| % poor (1980) | 31.00 | 39.81 | -8.81 | 0.12 |
| (e) Geography and history | | | | |
| area (1,000s km ²) | 104.93 | 106.92 | -1.99 | 0.95 |
| latitude | 35.11 | 32.52 | 2.58 | 0.53 |
| elevation | 6.20 | 6.17 | 0.03 | 0.91 |
| ocean access | 0.38 | 0.27 | 0.10 | 1.00 |
| % tropical | 20.11 | 52.64 | -32.53 | 0.09 |
| average precipitation | 55.57 | 63.80 | -8.22 | 0.62 |
| average temperature | 15.02 | 16.57 | -1.55 | 0.52 |
| average wind speed | 3.53 | 3.39 | 0.14 | 0.75 |
| # oil and gas fields | 33.25 | 19.00 | 14.25 | 0.54 |
| region: Cuyo | 0.12 | 0.09 | 0.03 | 1.00 |
| region: Northeast | 0.12 | 0.27 | -0.15 | 0.59 |
| region: Northwest | 0.12 | 0.27 | -0.15 | 0.59 |
| region: Pampa | 0.38 | 0.09 | 0.28 | 0.28 |
| region: Patagonia | 0.25 | 0.27 | -0.02 | 1.00 |
| founding province | 0.38 | 0.55 | -0.17 | 0.64 |
| % foreign population (1914) | 31.06 | 26.68 | 4.38 | 0.66 |
| (f) Political representation (1983) | | | | |
| delegation size (1983) | 8.25 | 7.09 | 1.16 | 0.73 |
| seat/population ratio (1983) | 2.18 | 1.97 | 0.22 | 0.76 |
| % seats - % population (1983) | 0.81 | 0.46 | 0.35 | 0.29 |

Note: Mean values of pre-treatment covariates for provinces that have a higher magnitude in midterm or concurrent elections, respectively. The p-values correspond to the sharp null hypothesis that the effect of having a higher magnitude in midterm years is zero for all provinces.

B Full results and robustness checks

This section presents the tables with the main results and the robustness checks:

- (1) Table A2 presents the results for the effect of *magnitude* on electoral coordination reported in Figure 3, as well as the robustness checks for the rank-ordered versions of the dependent variables.
- (2) Table A3 presents the results for the effect of *magnitude* on the final distribution of seats reported in Figure 4, as well as the robustness checks for the rank-ordered versions of the dependent variables.
- (3) Table A4 presents the results for the contribution of the mechanical and psychological effects to the distribution of seats reported in Figure 5.
- (4) Table A5 presents the results of the placebo tests reported in Figure 6.

Table A3: District magnitude and the distribution of seats in Argentina, 1985-2015

| (a) Main effect | # lists seats | | | ENPS | | | Gallagher index | | |
|---|------------------------------------|------------------------------------|--------------------------------------|------------------------|-------------------------------------|---|--|-----------------|-----------------|
| | full sample | small provinces | full sample | full sample | small provinces | full sample | full sample | small provinces | small provinces |
| <i>magnitude</i> | 0.20 [0.06:0.34] [0.02:0.38] | 0.29 [0.16:0.42] [0.12:0.46] | 0.12 [-0.00:0.25] [-0.01:0.25] | 0.15 | 0.29 [0.01:0.29] [-0.02:0.32] | -2.36 [-3.92:-0.80] [-4.10:-0.61] | -3.15 [-5.60:-0.70] [-6.35:0.05] | | |
| (b) Heterogeneous effect | | | | | | | | | |
| <i>magnitude</i> | 0.07 [-0.13:0.26] | 0.24 [0.05:0.43] | 0.01 [-0.16:0.19] | 0.08 [-0.12:0.27] | -1.75 [-3.84:0.34] | -2.34 [-5.95:1.27] | | | |
| <i>magnitude</i> × <i>vote third party</i> | 0.01 [0.00:0.02] | 0.00 [-0.01:0.01] | 0.01 [-0.00:0.02] | 0.01 [-0.01:0.02] | -0.06 [-0.19:0.08] | -0.06 [-0.26:0.13] | | | |
| (c) Main effect (rank) | | | | | | | | | |
| <i>magnitude</i> | 1.45 [0.61:2.28] | 2.11 [1.12:3.10] | -0.65 [-1.67:0.36] | -1.88 [-3.14:-0.62] | -1.10 [-2.05:-0.15] | -1.02 [-2.25:0.21] | | | |
| (b) Heterogeneous effect (rank) | | | | | | | | | |
| <i>magnitude</i> | 0.65 [-0.52:1.82] | 1.86 [0.45:3.26] | -1.01 [-2.46:0.43] | -2.27 [-4.13:-0.41] | -0.75 [-2.09:0.58] | -0.50 [-2.29:1.29] | | | |
| <i>magnitude</i> × <i>vote third party</i> | 0.07 [0.00:0.14] | 0.02 [-0.06:0.10] | 0.03 [-0.06:0.12] | 0.03 [-0.08:0.14] | -0.03 [-0.12:0.06] | -0.04 [-0.15:0.06] | | | |
| num. obs | 302 | 158 | 302 | 158 | 302 | 158 | | | |
| provinces | 19 | 10 | 19 | 10 | 19 | 10 | | | |
| elections | 16 | 16 | 16 | 16 | 16 | 16 | | | |

Note: OLS regression estimates. Values in square brackets report 95% confidence intervals based on robust standard errors (HC3) clustered by province, and assuming a Student distribution with degrees of freedom equal to the number of provinces minus 1. In the third row of panel (a), values in square brackets report the 95% confidence intervals based on the wild bootstrap procedure proposed by Cameron, Gelbach and Miller 2008 and Cameron and Miller 2015. All specifications include province and year fixed effects.

Table A4: Contribution of the mechanical and psychological effects to the distribution of seats in Argentina, 1985-2015

| (a) Main effect | # lists seats | | ENPS | | Gallagher index | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|
| | full sample | small provinces | full sample | small provinces | full sample | small provinces |
| Mechanical effect: A → B | 0.21 [0.10:0.33] | 0.29 [0.18:0.40] | 0.10 [-0.01:0.21] | 0.13 [0.01:0.25] | -2.82 [-4.29:-1.34] | -4.05 [-6.35:-1.75] |
| Psychological effect (I): B → D | -0.02 [-0.15:0.12] | 0.00 [-0.12:0.12] | 0.02 [-0.10:0.14] | 0.02 [-0.10:0.14] | 0.46 [-1.11:2.03] | 0.90 [-1.42:3.21] |
| Psychological effect (II): A → C | -0.06 [-0.20:0.08] | -0.01 [-0.15:0.12] | -0.02 [-0.15:0.10] | -0.01 [-0.15:0.12] | 1.02 [-0.44:2.48] | 0.59 [-1.84:3.01] |
| Difference: [C → D] - [A → B] | 0.04 [-0.04:0.12] | 0.01 [-0.09:0.11] | 0.05 [-0.03:0.12] | 0.03 [-0.09:0.14] | -0.56 [-1.93:0.88] | 0.31 [-1.89:2.53] |
| (b) Heterogeneous effect | | | | | | |
| Mechanical effect: A → B | 0.16 [-0.01:0.32] | 0.17 [0.01:0.33] | 0.04 [-0.11:0.19] | -0.01 [-0.18:0.15] | -1.88 [-3.91:0.15] | -2.19 [-5.67:1.29] |
| Mechanical effect: A → B × vote third party | 0.01 [-0.00:0.01] | 0.01 [0.00:0.02] | 0.01 [-0.00:0.01] | 0.01 [0.00:0.02] | -0.09 [-0.23:0.06] | -0.15 [-0.34:0.05] |
| Psychological effect (I): B → D | -0.09 [-0.29:0.10] | 0.07 [-0.10:0.24] | -0.03 [-0.20:0.14] | 0.09 [-0.09:0.26] | 0.12 [-1.92:2.17] | -0.15 [-3.71:3.41] |
| Psychological effect (I): B → D × vote third party | 0.01 [-0.00:0.02] | -0.01 [-0.01:0.00] | 0.01 [-0.01:0.01] | -0.01 [-0.01:0.00] | 0.03 [-0.10:0.16] | 0.08 [-0.12:0.29] |
| Psychological effect (II): A → C | -0.10 [-0.30:0.09] | 0.00 [-0.20:0.20] | -0.06 [-0.23:0.11] | -0.01 [-0.21:0.19] | 0.70 [-1.33:2.73] | 0.69 [-2.83:4.21] |
| Psychological effect (II): A → C × vote third party | 0.00 [-0.01:0.01] | -0.00 [-0.01:0.01] | 0.00 [-0.01:0.01] | -0.00 [-0.01:0.01] | 0.03 [-0.10:0.16] | -0.01 [-0.19:0.17] |
| num. obs | 302 | 158 | 302 | 158 | 302 | 158 |
| provinces | 19 | 10 | 19 | 10 | 19 | 10 |
| elections | 16 | 16 | 16 | 16 | 16 | 16 |

Note: OLS regression estimates. Values in square brackets report 95% confidence intervals based on robust standard errors (HC3) clustered by province, and employing a Student distribution with degrees of freedom equal to the number of provinces minus 1. All specifications include province and year fixed effects.

Table A5: Placebo tests. The effect of district magnitude on time-varying pseudo-outcomes in Argentina, 1985-2011

| | revenues | | % own | | % royalties | | % automatic | | % discretionary | | public | | unemployment | | infant | |
|----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|----------|----------|-------------|--------------|----------|-------------|-------------|
| (a) Full sample | per capita | (log) | revenues | | transfers | transfers | transfers | employees | rate (%) | rate (%) | rate (%) | employees | rate (%) | rate (%) | mortality | mortality |
| | | | | | | | | (per 1,000) | | | | (per 1,000) | | | (per 1,000) | (per 1,000) |
| <i>magnitude</i> | -0.00 | -0.42 | 0.02 | 0.25 | 0.37 | 0.04 | -0.01 | -0.24 | | | | | | | | |
| | [-0.03:0.02] | [-1.42:0.58] | [-1.26:1.30] | [-1.17:1.67] | [-0.71:1.44] | [-1.50:1.57] | [-0.53:0.52] | [-0.86:0.38] | | | | | | | | |
| num. obs | 245 | 245 | 245 | 245 | 245 | 218 | 263 | 225 | | | | | | | | |
| provinces | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | | | | | | | | |
| elections | 13 | 13 | 13 | 13 | 13 | 12 | 14 | 12 | | | | | | | | |
| (b) Small provinces | | | | | | | | | | | | | | | | |
| <i>magnitude</i> | -0.01 | -0.86 | -0.04 | 0.71 | 0.55 | -0.27 | 0.00 | -0.36 | | | | | | | | |
| | [-0.05:0.03] | [-2.29:0.57] | [-2.09:2.01] | [-1.66:3.08] | [-1.14:2.23] | [-2.63:2.10] | [-0.70:0.71] | [-1.24:0.53] | | | | | | | | |
| num. obs | 128 | 128 | 128 | 128 | 128 | 112 | 137 | 117 | | | | | | | | |
| provinces | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | | | | | | | | |
| elections | 13 | 13 | 13 | 13 | 13 | 12 | 14 | 12 | | | | | | | | |

Note: OLS regression estimates. Values in square brackets report 95% confidence intervals based on robust standard errors (HC3) clustered by province, and employing a Student distribution with degrees of freedom equal to the number of provinces minus 1. All specifications include province and year fixed effects.