District Magnitude and Female Representation
Evidence from Argentina and Latin America*

Adrián Lucardi
Department of Political Science, ITAM
Río Hondo 1 – Col. Progreso Tizapán
01080 – CDMX, Mexico
adrian.lucardi@itam.mx

Juan Pablo Micozzi
Department of Political Science, ITAM
Río Hondo 1 – Col. Progreso Tizapán
01080 – CDMX, Mexico
juan.micozzi@itam.mx

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Abstract

We claim that the overall effect of district magnitude on female representation is ambiguous because district magnitude increases both (a) party magnitude – which promotes the election of women – and (b) the number of lists getting seats – which hampers it, as marginal lists are usually headed by men. For identification, we exploit the fact that the Argentine Chamber of Deputies and the Buenos Aires legislature elect half of their members every two years, and thus some districts have varying magnitudes in concurrent and midterm elections. We find a positive but weak effect of district magnitude on female representation, which can be decomposed into a positive effect driven by party magnitude and a negative one channeled by the number of lists getting seats. We find similar results in a sample of seven Latin American countries.

Replication Materials: The data, code, and any additional materials required to replicate all analyses in this article are available on the *American Journal of Political Science Dataverse* within the Harvard Dataverse Network, at: https://doi.org/10.7910/DVN/FXI5ZO.

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Can electoral institutions improve female representation? If so, which ones and through which mechanisms? In this paper we examine the effect of district magnitude – the number of seats elected in a district in a given election – and its interplay with gender quotas. Although both factors have received substantial attention from the literature, two issues remain unaddressed. First, while it is widely acknowledged that the effectiveness of quotas depends on their generosity (Schwindt-Bayer 2009; Rosen 2017), the enforcement of placement mandates (Dahlerup and Freidenvall 2005; Tripp and Kang 2008; Jones, Alles and Tchintian 2012; Schwindt-Bayer 2009; Rosen 2017) and the use of closed lists (Schwindt-Bayer 2009; Thames and Williams 2010; Gonzalez-Eiras and Sanz 2018), their interaction with district magnitude has received little attention. Second, whether the positive association between district magnitude and female representation (Matland 1993; Matland and Taylor 1997; Reynolds 1999; Schwindt-Bayer 2010; Krook 2018) reflects a *causal* relationship is an open question. Larger districts tend to be more urbanized and socially diverse (Monroe and Rose 2002; Gerring et al. 2015), which may affect women's labor market opportunities, voters' attitudes towards them, or party leaders' nomination decisions independently of district magnitude (Salmond 2006; Schmidt 2009; Roberts, Seawright and Cyr 2013). Comparing elections to different chambers within the same polity (Roberts, Seawright and Cyr 2013) does not solve the problem because voting behavior across tiers is probably correlated (Fiva and Folke 2016). For example, placing a woman at the top of the Senate list may induce a party to nominate a man at the top of the House ticket, and vice versa. Concurrent elections may also induce voters to cast a straight-ticket vote.

We extend this literature both theoretically and empirically. First, we argue that in a setting in which party leaders are reluctant to nominate female candidates unless forced by gender quotas – a reasonable assumption in both Argentina and Latin America – the *overall* effect of district magnitude on female representation will be ambiguous. This is

because such effect is the product of two mechanisms that point in opposite directions. On the one hand, as district magnitude increases, the average number of seats obtained by successful parties goes up; to the extent that female candidates are placed in lower-ranked positions, they become more likely to get elected. On the other, larger district magnitudes also allow small parties to obtain their first seat(s). To the extent that these parties' lists are overwhelmingly headed by men, female representation will not increase; indeed, it may actually *decrease* when measured as the percentage of women elected. The overall impact of district magnitude will thus depend on which of these forces predominate: insofar as it increases *party* magnitude – the number of seats successful parties receive – it will increase female representation; but insofar as it increases the *number of parties getting seats*, it will have a negative effect on the election of women.

Second, we investigate these claims with district-level data from three samples. For identification, we exploit the fact that the staggered electoral calendars used to elect the Argentine Chamber of Deputies (1985-2017) and the legislature of the province of Buenos Aires (1985-2015) provide an exogenous source of variation in district magnitude. Argentine provinces elect half of their congressional delegation every two years, and thus the 19 provinces with an odd number of representatives have different magnitudes in concurrent and midterm elections. In Buenos Aires, one half of the electoral districts elect their representatives to the lower chamber in concurrent years and their upper-chamber delegation in midterm years, while the other half follow the opposite pattern. Since the lower chamber is twice as large as the upper, district magnitude varies by a factor of two within the same district every two years. As an external validity check, we analyze a sample of seven Latin American legislatures that elect their members through closed-list proportional representation (PR) plus the five Argentine provinces with an even number of representatives. In this case, variation in magnitude comes from changes in assembly size and census-driven reapportionments.

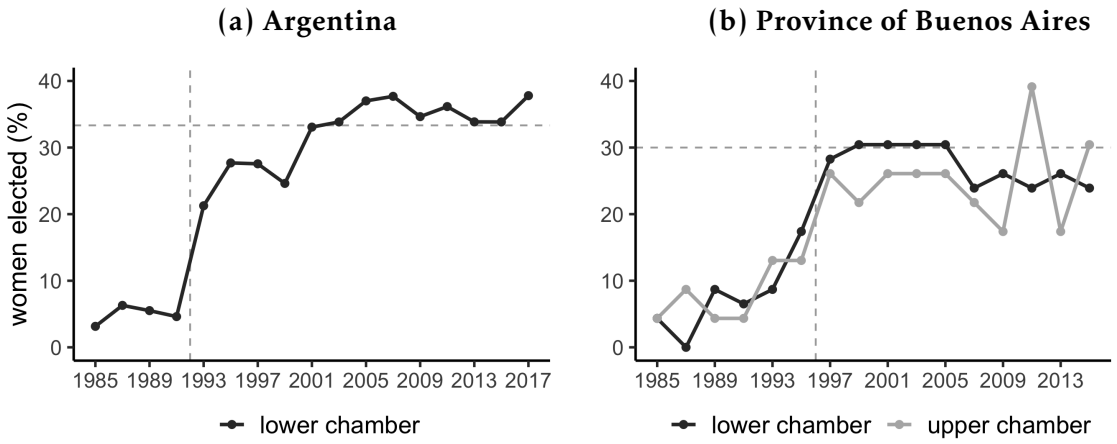

Figure 1: Female representation in Argentina and Buenos Aires. Vertical and horizontal lines indicate the date of adoption of gender quotas and the % of women mandated by quotas, respectively.

Our results produce three main findings. First, district magnitude has a positive but weak and statistically insignificant effect on the percentage of women elected in a district, though only in Argentina and Buenos Aires after the introduction of quotas; in the Latin American sample, the overall effect is zero. Second, district magnitude increases both the number of lists getting seats (across all samples) and party magnitude (in Argentina and Buenos Aires). Third, as the number of lists getting seats increases, the proportion of women elected goes down in all samples. In contrast, larger party magnitudes only have a positive and statistically significant effect on female representation in the Argentine Chamber of Deputies (where most districts are small) and the subset of Latin American countries with a magnitude of 5 or less. Taken together, these results provide compelling evidence in favor of our claim that the overall effect of district magnitude on female representation is a weighted average of a positive effect, driven by party magnitude, and a negative one, channeled by an increase in the number of lists getting seats. These findings thus provide a cautionary note about the perils of institutional engineering, as the multiplicity of (potentially compensating) effects may lead to unexpected average outcomes.

Theoretical framework

There is widespread agreement that both gender quotas and large district magnitudes promote the election of women. By forcing parties to include more women in party lists, quotas obviously increase the number of women elected (Jones, Alles and Tchintian 2012; Schwindt-Bayer 2009, 2010; Piscopo 2015; Besley et al. 2017; Krook 2018; though see Reynolds 1999 and Kunovich and Paxton 2005 for a different view) and promoted (O'Brien and Rickne 2016). Their effectiveness depends on other institutions, however. To begin with, quotas must be sufficiently generous (Schwindt-Bayer 2009; Rosen 2017). Placement mandates must prevent party leaders from displacing women to unelectable positions (Schwindt-Bayer 2009; Jones, Alles and Tchintian 2012; Rosen 2017), and these mandates must be actively enforced (Htun and Jones 2002; Dahlerup and Freidenvall 2005; Tripp and Kang 2008; Schwindt-Bayer 2009; Rosen 2017), which is inherently difficult in open-list systems (Schwindt-Bayer 2009; Thames and Williams 2010; Gonzalez-Eiras and Sanz 2018). The effect of district magnitude is less straightforward. While most authors expect a positive effect (Matland 1993; Reynolds 1999; Salmond 2006; Schwindt-Bayer 2010; Thames and Williams 2010; Krook 2018), there are dissenting voices (Schmidt 2009). And even a positive effect may be substantively small: Schwindt-Bayer (2010) finds that increasing district magnitude in Latin America from its minimum to its maximum value would increase the proportion of women elected by just 1.2 percentage points.

At the most basic level, electing more women requires two things: (a) placing enough female candidates in electable list positions;[1] and (b) letting parties obtain enough seats

[1] By "electable positions," we mean those high enough in the party list to imply a sufficiently large chance of being elected *ex ante*. What qualifies as "electable" thus depends on the number of seats a party can expect to win. We focus on individuals placed on the top three positions of the list because in Argentina,

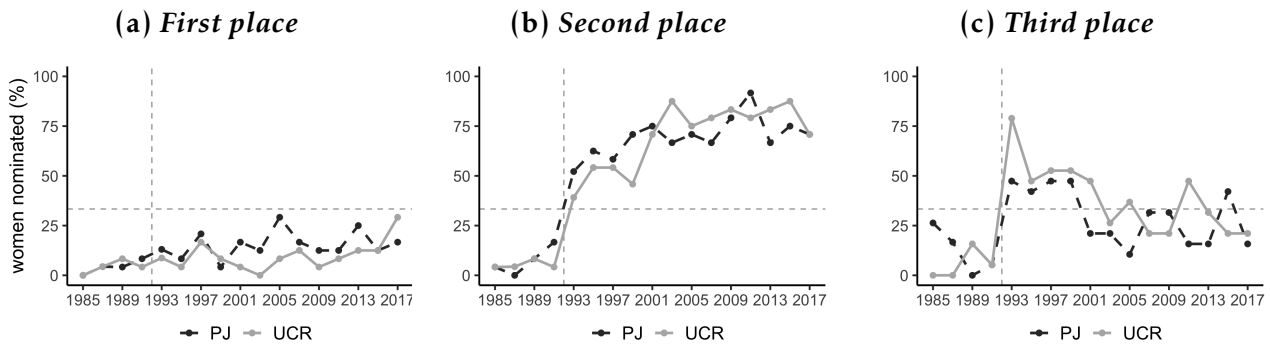

Figure 2: Women nominated (%) in elections to the Argentine Chamber of Deputies. Vertical and horizontal lines indicate the date of adoption of gender quotas and the % of women mandated by quotas, respectively.

so candidates in these positions are actually elected.[2] Due to data limitations, in this paper we focus on (b), i.e. we study how district magnitude affects the election of women taking party nominations for granted. To do so, we assume that party leaders behave as "minimal compliers:" they nominate as few women as possible to comply with gender quotas, and place these female candidates as low in the party list as permitted by the law. For example, if the quota legislation says that one in every three candidates must be a woman, we expect party leaders to place female candidates in the third, sixth, ninth, etc, positions of party lists. This minimal compliance assumption thus entails that women will only appear in electable positions when quotas are in place; and even then, female candidates will be relegated to lower-ranked positions; in particular, few lists will be headed by women.

To be sure, this assumption is not valid everywhere; in certain (European) countries, placing more women in electable positions is an useful strategy for maximizing a party's vote share (Matland 1993; Salmond 2006; Casas-Arce and Saiz 2015; Meserve, Pemstein and Bernhard 2020). But in Argentina (Jones 1998), Latin America (Jones, Alles and

Buenos Aires, and Latin America respectively 75.9%, 71.4% and 76.1% of elected representatives had been placed first, second or third.

[2]We thank an anonymous reviewer for suggesting this characterization.

Tchintian 2012) and even Spain (Esteve-Volart and Bagues 2012), minimal compliance provides a reasonable approximation to reality. Figure 1 shows that the proportion of women elected to the Argentine Chamber of Deputies and the Buenos Aires legislature increased sharply and immediately after the adoption of gender quotas. If this effect was driven by minimal compliance, the proportion of female *candidates* should have also increased sharply after the introduction of quotas, but such candidates should have been relegated to lower-ranked positions. This is precisely what Figure 2 shows for Argentina's two largest parties, the *Partido Justicialista* (PJ) and the *Unión Cívica Radical* (UCR):[3] quotas had no impact on the proportion of women nominated at the top of party lists, but preceded a large increase in the number of women placed second or third. The proportion of female candidates placed third was indeed higher between 1993 and 1999 than afterwards because, while the quota mandates that one in every three candidates must be a woman, since 2001 only parties that have obtained at least three seats in the previous election can place a woman in the third place.

Given this assumption, we argue that the *overall* effect of district magnitude on female representation is theoretically ambiguous, as the path between magnitude and the election of women is mediated by two mechanisms that point in different, and even contradictory, directions. On the one hand, and in line with most of the literature, we argue that district magnitude will increase female representation insofar as it increases *party magnitude*, i.e. the number of seats received by parties that actually obtain representation. Intuitively, larger magnitudes allow parties to elect more seats in a given district; assuming party leaders behave as minimal compliers, a disproportionate share of these marginal seats will correspond to lower-placed female candidates. In other words, larger magnitudes allow quotas to "kick in:" female candidates nominated in the second or

[3]These are the only parties for which we have nomination data before 1995.

third place of their party's list naturally need their party to obtain two or three seats in order to get elected. Other things equal, larger district magnitudes make this more likely.

Things are not equal, however, because larger magnitudes also increase the number of lists getting representation, i.e. they make it more likely for small parties to win their first seat(s) (Duverger 1951/1967; Cox 1997; Lucardi 2019). If these marginal lists are overwhelmingly headed by men – as will be the case under minimal compliance –, the impact of district magnitude on female representation will be negative. Intuitively, increasing district magnitude introduces competition between male candidates heading the lists of small parties, and female candidates located in lower-placed positions of large parties' lists. When an increase in district magnitude means that a large party wins an additional seat, the proportion of women elected will go up. When, in contrast, small parties capture their first seat(s), female representation will not improve, and may even worsen when measured as the percentage of women elected.

When average magnitudes are small – 84% and 62% of observations in our Argentine and Latin American samples involved magnitudes of 4 or lower – this is not a trivial consideration. Imagine that there are two seats to distribute, all lists are headed by men, and women are placed second – a common phenomenon throughout Latin America (Jones, Alles and Tchintian 2012). If the two most voted lists receive one seat each, female representation will be zero. Increasing district magnitude to 3 will either (a) give the largest party a second seat, resulting in a 2-1 distribution and increasing the proportion of women elected to 33%; or (b) give a first seat to the third most voted party, thus resulting in a 1-1-1 split with no women elected. Now assume that when district magnitude is 2, the largest party receives both seats and thus 50% of elected candidates are women. Increasing magnitude to 3 will either give the largest party an additional seat (resulting in a 3-0 distribution) or allow the second largest list to win a seat (a 2-1 scenario). Either way, the marginally elected candidate will probably be a man, and thus

female representation will *fall* to 33%. Increasing district magnitude from 3 to 4 can have similar effects.

Summing up, we expect the *overall* effect of district magnitude on female representation to be a weighted average of a positive effect, driven by party magnitude, and a negative one resulting from more lists gaining representation. The sign of this overall effect is thus indeterminate: it could be positive if the first mechanism – the increase in party magnitude – predominates; negative if the mechanism – the increase in the number of parties getting representation – is stronger; or zero if both mechanisms cancel each other out. We now turn to an empirical examination of these claims.

Research design

Our main analysis looks at the Argentine Chamber of Deputies (1985-2017) and the legislature of the province of Buenos Aires (1985-2015). Data for Argentina comes from Tow (N.d.) and our own dataset of legislative candidates (Micozzi and Lucardi forthcoming). Data for Buenos Aires is from the provincial Electoral Court.[4]

We estimate specifications of the form

$$y_{d,t} = \beta^{\text{PRE}} \cdot Mag_{d,t} \cdot (1 - Quota_t) + \beta^{\text{POST}} \cdot Mag_{d,t} \cdot Quota_t + \lambda \mathbf{X}_{d,t} + \mu_d + \delta_t + \varepsilon_{d,t}, \quad (1)$$

where $y_{d,t}$ measures female representation in district d in election year t, $Mag_{d,t}$ is the total number of seats elected in district d in year t; $Quota_t$ is a dummy taking the value of 1 if a gender quota was already in place at t and 0 otherwise; $\mathbf{X}_{d,t}$ is a (potentially empty) vector of time-varying controls, and μ_d and δ_t are district and year fixed effects. We focus on β^{PRE} and β^{POST}, which indicate the marginal effect of district magnitude before

[4] http://www.juntaelectoral.gba.gov.ar/mapa-provincia-bsas.php. We have full data on elected candidates, but data for losers is only available for Argentina since 1995.

and after the introduction of gender quotas, respectively.[5] When examining the mechanisms through which district magnitude affects female representation, we will replace $y_{d,t}$ or $Mag_{d,t}$ with measures of party magnitude, the number of lists getting seats, or the proportion of women candidates placed in top list positions.

To identify the effect of *Magnitude*, we exploit exogenous variation in the electoral calendar. The Argentine lower chamber is elected by closed-list PR in 24 multi-member districts that are coterminous with the country's 23 provinces plus the capital city. Within each district, seats are distributed using the d'Hondt formula, with a legal threshold of 3% of registered voters.[6] Nominations are controlled by provincial party leaders, though competitive primaries are sometimes held (De Luca, Jones and Tula 2002). Deputies serve four-year terms, but the Chamber is renewed by halves every two years, and thus the 19 provinces with an odd number of representatives elect a different number of deputies in concurrent and midterm years. We restrict the sample to these provinces, where *Magnitude* ranges between 2 and 13 (see Table A1). With a minor exception – Tierra del Fuego elected two deputies until 1989, and five afterwards – the number of deputies per province has remained constant since 1983.

In Buenos Aires, both legislative chambers are elected by closed-list PR in eight multi-member districts whose magnitudes range between 3 and 18 (see Table A2). Neither district boundaries nor their magnitudes have changed since 1985. Seats are distributed using the Hare formula among lists that obtained at least one Hare quota, with any surplus seats going to the most voted list (provincial law #5109). Since the Hare quota is

[5] We adopt this parametrization because we are interested in the marginal effect of *Magnitude* before and after quotas. Note, however, that our specification is identical to the one that would result from including an interaction term between *Mag* and *Quota*, i.e. $\beta_1 \cdot Mag_{d,t} + \beta_2 \cdot Mag_{d,t} \cdot Quota_t$ (a $\beta_3 \cdot Quota_t$ term would be perfectly collinear with the year effects).

[6] This matters little in practice because turnout is relatively high.

defined as the number of valid votes divided by the number of seats to distribute, smaller magnitudes imply higher thresholds. To the extent that this deprives small parties from representation, larger parties will receive enough seats for quotas to kick in even in small-magnitude districts.[7] Candidate nominations are decided by the president and provincial party leaders; in practice, this often means the governor (for the incumbent party) as well as powerful mayors (Caminotti, Rotman and Varetto 2011).

Since the lower chamber is twice as large as the Senate (92 vs. 46 members, respectively), variation in *Magnitude* is induced by the fact that in midterm years, four districts hold elections for the upper chamber, while the other four elect their lower chamber representatives; two years later, the roles are reversed (see Table A2). This means that we will be comparing elections for different bodies, but we do not regard this as overly problematic because all provincial legislators are elected for a four-year term following the same rules and both chambers have nearly identical decision-making powers; as explained in section A1 in the Supporting Information (SI), they only differ in terms of minimum age requirements – which matter little in practice –, impeachment and confirmation powers. Unlike Lago and Martínez (2007) and Roberts, Seawright and Cyr (2013), we do not compare elections held on the same day for different offices, where candidate nominations may be interdependent or voters may cast a straight ballot for their preferred party; rather, our design resembles that of Crisp, Potter and Lee (2012), who look at the same districts in different elections held under (slightly) different rules.

Comparing a district with itself at different moments in time ensures that all characteristics that remain constant within districts are balanced by construction. Furthermore, time-varying factors that change slowly over time – like voters' attitudes toward female candidates – are not worrisome because our treatment is switched on or off repeatedly within each district. This lends credibility to the assumption that the treatment and con-

[7] We thank Jorge Streb for a discussion of this issue.

trol groups would have followed parallel paths in the absence of treatment. Nonetheless, the fact that executive officials – presidents, governors and mayors – are elected every four years means that some districts have larger magnitudes in years with executive elections, and others in midterm elections. If all districts had larger magnitudes in concurrent (midterm) years, this would violate the parallels paths assumption, as a larger value of *Magnitude* would be perfectly collinear with (non-)concurrency, and executive races may affect legislative ones, either via coattail effects (Jones 1997) or by changing the pool of candidates (Lucardi and Micozzi 2016). Therefore, it is worth noting that in both samples roughly half of the districts elect a larger number of representatives in concurrent or midterm years (see Tables A1 and A2 in the SI), and furthermore the identity of such districts was determined by chance. In Argentina, every province elected its entire congressional delegation in 1983, but subsequently half of each district's representatives received a shortened two-year mandate instead of a four-year one. The decision of which legislators would receive a full term – and thus, implicitly, of which provinces would elect more representatives in concurrent or midterm years – was decided by lot shortly after the election (Dal Bó and Rossi 2011:1243-4). In Buenos Aires, the entire legislature was elected in 1983, but the following year the eight *secciones* were divided into two groups ensuring that exactly half of the upper and the lower chamber would be renewed every two years. A random draw decided which group would elect provincial deputies rather than senators in 1985.[8]

In section A2 of the SI we document that districts that ended up having a larger magnitude in concurrent and midterm years are well balanced along ≈ 40 pre-treatment characteristics. Specifically, we are unable to reject the sharp null hypothesis that having a larger magnitude in concurrent or midterm years had an effect on any of the pre-treatment variables. p-values are above 0.05 for both samples; only the percentage of the 1983 provin-

[8]Personal interview with Pascual Cappelleri, who presided the provincial lower chamber during 1983-87.

cial budget coming from automatic transfers from the central government and the share of a province's land area with a tropical climate are statistically significant at the 0.10 level. Furthermore, the differences in means between both sets of districts are relatively small, especially for measures of electoral outcomes in 1983 (see Tables A4 and A5). The only potential source of concern it that Argentine provinces with seven representatives are unbalanced across groups: one elects more deputies in midterm elections, while the other four do so in concurrent elections (see Table A1). For this reason, in the robustness checks we will show that our results hold in the ten provinces that elect five deputies.

Both Argentina and Buenos Aires introduced gender quotas during the 1990s. Beginning in 1993, all lists running for the Argentine Chamber of Deputies must include one woman for every three positions (Jones 1998). Since 2001, parties that present candidates for the first time or expect to renew two seats or less (based on previous electoral results) must nominate one woman within the first two positions of the list (see decree #1246/2000). Most parties elect no more than one or two seats, so this may have weakened the link between district magnitude and the proportion of women elected.[9] Since 2019, parties must nominate 50% of candidates of each gender, with males and females alternating successively; we thus exclude observations for that year. In Buenos Aires, a quota mandating a minimum of 30% of candidates of each gender was employed between 1997 and 2015, with placement mandates becoming more stringent over time (Barnes 2016). We exclude data from 2017 and 2019 because a stronger quota was adopted, mandating that every female candidate be followed by a male one and vice versa (Caminotti et al. 2018).

[9]We thank Mark P. Jones for bringing this point to our attention.

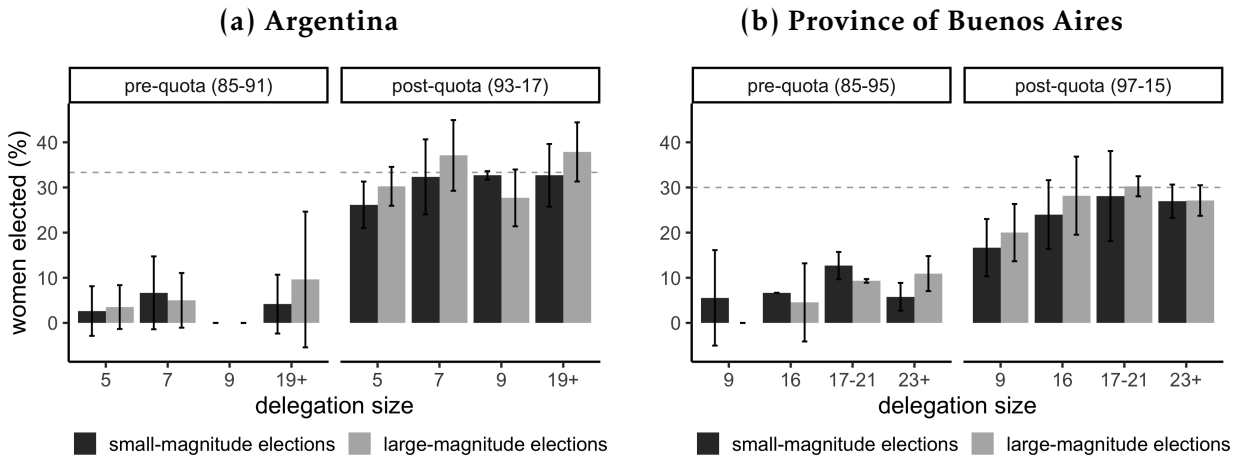

Figure 3: Women elected (%), conditional on delegation size and district magnitude. 95% CIs are based on standard errors clustered by district and adjusted by the number of clusters. Horizontal lines indicate the proportion of women in party lists mandated by gender quotas.

Main Results: Argentina and Buenos Aires

Graphical summary. Figure 1 already showed that the introduction of quotas had an immediate effect on the election of women. Tellingly, however, the proportion of women heading party lists in Argentina remained low (see Figure 2). Furthermore, and in line with the requirements of decree #1246/2000 mentioned above, since 2001 the proportion of women placed second experienced a noticeable jump, while fewer women were placed third. This is consistent with the assumption that party leaders behave as minimal compliers: after the quota was introduced, they tried to relegate women to the third position; when this was no longer allowed, they moved female candidates to the second place but compensated by placing more men third. In contrast – but consistent with the fact that quotas were mandatory for all parties – Figure A2 in the SI shows that quotas had no effect on either party magnitude or the number of lists getting seats.

Figure 3 compares the percentage of women elected in small- and large-magnitude elections within districts that elect a similar number of representatives. For example,

districts with a delegation size of five elect 2 representatives in small-magnitude elections and 3 in large-magnitude ones; a delegation size of seven indicates a change between 3 and 4, and so on. Despite some exceptions, we see that when keeping delegation size constant, larger magnitudes result in a higher percentage of women being elected, though only after the introduction of quotas. Figure A3 in the SI shows a similar pattern for the probability of electing at least one or two women in a district.

Still, the relationship looks modest. We argue that this is the case because district magnitude increases both party magnitude, which improves female representation, and the number of lists getting seats, which has a negative effect on the election of women. Figure 4 confirms that this pattern held in both Argentina and Buenos Aires after the introduction of gender quotas. For a given value of district magnitude, moving along the x-axis – i.e., increasing the number of lists getting at least one seat – often results in fewer women being elected. For example, panel (a) shows that in Argentina when *Magnitude* = 2, the proportion of women elected is 50% if a single list received representation but falls below 20% if two lists gained one seat each. When *Magnitude* jumps to 3, the proportion of women elected hovers around 33% if one or two lists receive representation, but falls sharply when three parties receive one seat each. Increasing district magnitude to 4 results in more women elected only if one or two lists obtain seats. A similar logic holds in Buenos Aires (see Figure 4b), notably when *Magnitude* switches between 3 and 6 or between 5/6 and 11. An important point, to which we will return later, is that these effects appear to be much stronger for smaller magnitudes. Figures A4 and A5 in the SI present similar patterns for alternative measures of female representation.

Overall effect. Table 1 examines the overall effect of district magnitude on female representation, measured in four ways: as the percentage of women elected; as the natural log of the number of women elected (plus one); or as a 0/100 dummy indicating that

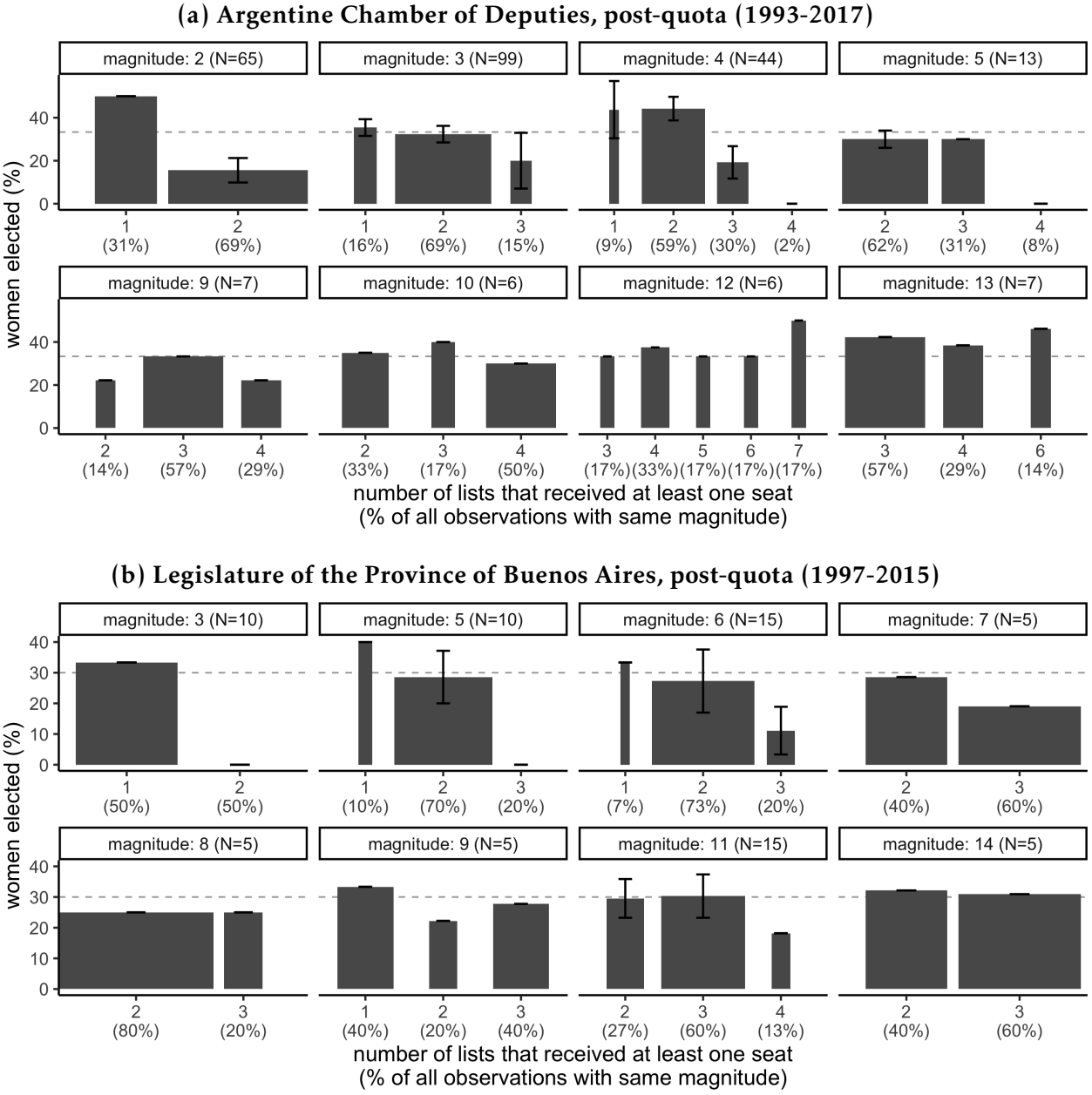

Figure 4: Women elected (%), conditional on district magnitude and the number of lists receiving seats. 95% CIs are based on standard errors clustered by district and adjusted by the number of clusters. Horizontal lines indicate the proportion of women in party lists mandated by gender quotas.

Table 1: Overall effect: District magnitude and female representation

	Women elected (%)	*Women elected* (#) (log)‡	*Woman elected* (0/100)	*2+ Women elected* (0/100)
(a) Argentina	(1)	(2)	(3)	(4)
Magnitude†	1.98	0.14	14.61	6.71
(pre-quota)	[-1.12:5.09]	[-0.13:0.41]	[3.43:25.79]	[-3.64:17.07]
	[-1.47:5.44]	[-0.23:0.51]	[2.11:27.11]	[-7.13:20.56]
Magnitude†	2.32	0.60	14.63	12.46
(post-quota)	[-0.75:5.39]	[0.42:0.78]	[4.53:24.74]	[5.18:19.74]
	[-1.04:5.69]	[0.41:0.78]	[4.36:24.91]	[5.18:19.74]
num. obs	321	321	321	321
(b) Buenos Aires				
Magnitude†	-0.00	0.31	2.39	3.72
(pre-quota)	[-0.69:0.69]	[-0.02:0.65]	[-1.19:5.98]	[-0.23:7.67]
	[-0.94:0.93]	[-0.18:0.80]	[-2.16:6.95]	[-2.89:10.33]
Magnitude†	0.34	0.70	0.60	5.66
(post-quota)	[-0.04:0.72]	[0.57:0.84]	[-1.76:2.97]	[2.09:9.23]
	[-0.03:0.72]	[0.57:0.83]	[-1.62:2.82]	[1.45:9.87]
num. obs	128	128	128	128

OLS regression estimates. All specifications include district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) log(*Magnitude*) in column (2). (‡) We added 1 to the outcome before logging.

at least one or two women were elected.[10] We have data for just 19 provinces in Argentina and 8 *secciones* in Buenos Aires, so below each estimate we report two alternative 95% confidence intervals (CIs): the first is based on standard errors clustered by district but adjusting the critical value of the t-statistic to account for the small number of clusters, and the second corresponds to the wild-bootstrapped CIs proposed by Cameron and Miller (2015).[11] This tilts our analysis against finding statistically significant results.[12]

[10] We employ 0/100 dummies so point estimates can be interpreted as percentage point changes.

[11] We employed the `clusterSEs` package in `R` (Esarey and Menger 2019), with 999 bootstrap replications.

[12] For Argentina, we multiply the standard errors by 2.101 – the critical value from a t-distribution with 18 degrees of freedom – instead of the usual 1.96. The corresponding value for Buenos Aires is 2.365.

The first two columns show that in both Argentina and Buenos Aires, *Magnitude* has a positive but statistically insignificant effect on the proportion of women elected in a district. This is attributable to the small size of the estimates rather than to lack of power: for example, column (1) in Table 1a indicates that a unit increase in *Magnitude* increases the number of women elected in Argentina by just 1.98 and 2.32 percentage points before and after the introduction of gender quotas, respectively. The effects for Buenos Aires are smaller: zero before the introduction of quotas, and 0.34 afterwards. Since the median difference in *Magnitude* between chambers is 5.5 (see Table A2), this implies an increase of $5.5 \times 0.34 \approx 1.9$ pp. in the proportion of women elected, though the estimate falls short of statistical significance at conventional levels.

The effects for other outcomes are stronger. The log-log specifications reported in column (2) imply statistically significant elasticities of 0.60 to 0.70 for Argentina and Buenos Aires respectively, though only after the adoption of quotas; for the pre-quota period, the elasticities are less than half as large and insignificant. The relationship between district magnitude and female representation may thus be best captured by a logarithmic relationship. The last two columns show that in Argentina a unit increase in *Magnitude* has a huge impact on the probability that at least one or two women will be elected, with point estimates implying an increase of 12.5-14.6 pp. In Buenos Aires, the effect is positive and significant only for the second outcome – a 5.7 pp. increase in the probability of electing at least two women –, probably because of ceiling effects: given the large magnitudes observed in this case, after the introduction of quotas practically all districts elected at least one woman (see Figure A3b in the SI).

In the SI we show that the results for Argentina are robust to controlling for a set of dummies – and all their possible interactions – measuring the strength of the governor's party: same-day concurrency with presidential, Senate, gubernatorial, or local legislative elections, plus indicators of whether the incumbent governor was legally allowed to run

for reelection, actually ran for re-election, or appeared in the ballot in any other way (e.g., as a candidate for the Senate).[13] These factors may affect the distribution of seats between parties and hence the election of women, but including them only narrows the confidence intervals without affecting the gist of the results (see Table A7a). Table A7b shows that restricting the sample to the ten Argentine provinces with a delegation size of 5 or less strengthens some estimates and weakens others, but the overall story remains unchanged. To further disregard the possibility that the results may be a statistical fluke, the placebo tests presented in Table A8 show that in Argentina, district magnitude has no effect on a set of time-varying outcomes – like provincial revenues, the number of public employees, or infant mortality – that should not be affected by it.

District magnitude and intermediate outcomes. We now investigate how district magnitude affects party magnitude and the number of lists getting seats. Columns (1) and (2) in Table 2a show in Argentina, a unit increase in *Magnitude* translates into 0.16-0.20 additional lists receiving at least one seat, or 0.07-0.13 if lists are weighted by seat shares, though the estimates are only statistically significant for the post-quota period. Panel (b) show smaller – but more precisely estimated – results for Buenos Aires, with quotas making little difference. The next four columns examine the effect of *Magnitude* on alternative versions of *party* magnitude: the median and mean values among parties receiving seats; the mean value for all parties, weighted by their vote shares; and the magnitude of the largest party. The estimates are uniformly positive and often statistically significant at conventional levels, with effect sizes ranging between 0.15 and 0.62. Table A9 shows that the results for # *list seats* and ENPS are somewhat sensitive to the inclusion of controls

[13] Concurrent elections, an incumbent on the ballot, or a governor who is not a lame duck may affect the distribution of votes between parties (Jones 1997), the internal unity of the governor's party (De Luca, Jones and Tula 2002), or the supply of experienced (male) candidates (Franceschet and Piscopo 2014). In Buenos Aires, these controls would be perfectly collinear with the year effects.

Table 2: Intermediate effect (I): District magnitude ⇒ Mediators

	# list seats	ENPS	*Party magnitude* median	mean	mean, wt.	largest
(a) Argentina	(1)	(2)	(3)	(4)	(5)	(6)
Magnitude	0.16	0.07	0.35	0.38	0.41	0.62
(pre-quota)	[-0.05:0.36]	[-0.08:0.23]	[0.19:0.50]	[0.23:0.52]	[0.30:0.51]	[0.49:0.75]
	[-0.08:0.40]	[-0.08:0.23]	[0.17:0.52]	[0.22:0.53]	[0.29:0.53]	[0.48:0.77]
Magnitude	0.20	0.13	0.33	0.36	0.38	0.57
(post-quota)	[0.02:0.39]	[-0.01:0.27]	[0.19:0.47]	[0.23:0.49]	[0.29:0.47]	[0.44:0.70]
	[0.00:0.40]	[0.00:0.26]	[0.19:0.47]	[0.23:0.48]	[0.29:0.48]	[0.44:0.71]
num. obs	321	321	321	321	321	321
(b) Buenos Aires						
Magnitude	0.13	0.08	0.17	0.20	0.32	0.42
(pre-quota)	[0.06:0.19]	[0.04:0.12]	[-0.04:0.37]	[0.03:0.36]	[0.27:0.37]	[0.34:0.51]
	[0.03:0.22]	[0.04:0.12]	[-0.23:0.56]	[-0.10:0.50]	[0.24:0.39]	[0.25:0.60]
Magnitude	0.14	0.08	0.15	0.19	0.31	0.41
(post-quota)	[0.07:0.21]	[0.03:0.13]	[0.02:0.28]	[0.06:0.31]	[0.26:0.37]	[0.32:0.50]
	[-0.00:0.28]	[0.01:0.16]	[-0.06:0.36]	[-0.02:0.40]	[0.26:0.37]	[0.20:0.61]
num. obs	128	128	128	128	128	128
(c) Argentina	*Women in top list positions (%)*					
(1995-2017)	***First***	***Second***	***First two***	***Third***	***First three***	
Magnitude	-0.51	-0.71	-0.61	-4.26	-0.37	
	[-4.58:3.57]	[-6.73:5.32]	[-2.91:1.69]	[-9.72:1.20]	[-1.86:1.12]	
	[-4.68:3.67]	[-6.84:5.42]	[-3.09:1.88]	[-11.48:2.96]	[-2.63:1.89]	
num. obs	228	228	228	168	168	
	Women in top list positions (%, weighted by vote shares)					
Magnitude	2.89	-6.62	-1.87	-2.24	-0.94	
	[-2.83:8.60]	[-12.42:-0.82]	[-4.07:0.34]	[-12.26:7.78]	[-3.89:2.00]	
	[-3.21:8.99]	[-12.99:-0.25]	[-4.16:0.43]	[-14.76:10.28]	[-4.89:3.00]	
num. obs	228	228	228	168	168	

OLS regression estimates. All specifications include district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom.

or restricting the sample to small provinces, but the results for party magnitude remain unchanged.

Quotas make little difference for these outcomes, which is to be expected since they measure the distribution of seats between parties, not the election of women. Party leaders may conceivably nominate women to appeal to gender-conscious voters, but Figure 2 already showed that this was not the case in Argentina, where the quota legislation was sponsored by a cross-partisan coalition of female legislators (Jones 1998). Furthermore, Table A10 confirms that the percentage of women in the top two positions of party lists had no effect on either the number of lists getting seats or party magnitude.

Table 2c examines how *Magnitude* affects the percentage of women nominated in the first three positions of party lists, for which we only have data for Argentina since 1995. When averaging among all lists, the estimates are always negative, but small in size and insignificant. Weighting lists by their vote shares results in a positive but insignificant effect on the percentage of women heading party lists, but a large – minus 6.6 percentage points – and statistically significant impact on the proportion of women placed second. In other words, as district magnitude increases, female candidates are displaced away from the second place in the list, and it is large parties that are driving the results. This fits nicely with our assumption that party leaders behave as minimal compliers who take advantage of larger district magnitudes to send female candidates to lower-ranked positions. Adding controls or restricting the sample to small provinces makes little difference (see Table A9c).

Intermediate outcomes and female representation. Table 3 examines how the number of lists getting seats and median party magnitude impact female representation. To recap, we expect a negative effect for the former and a positive one for the latter. Since the claim that these variables are exogenous is weaker than for *Magnitude*, we include magnitude

Table 3: Intermediate effect (IIA): Mediators and female representation

	***Women elected* (%)**	***Women elected* (#) (log)[§]**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
(a) Argentina	(1)	(2)	(3)	(4)
Number of lists receiving seats				
# lists seats[†]	-7.67	-0.81	-19.97	-19.22
(pre-quota)	[-12.75:-2.59]	[-1.31:-0.32]	[-38.27:-1.68]	[-37.03:-1.42]
	[-13.28:-2.05]	[-1.41:-0.22]	[-41.29:1.34]	[-38.13:-0.32]
# lists seats[†]	-8.17	-0.28	-19.29	-4.08
(post-quota)	[-13.70:-2.64]	[-0.43:-0.13]	[-28.20:-10.37]	[-12.69:4.53]
	[-16.15:-0.19]	[-0.44:-0.12]	[-29.81:-8.76]	[-12.40:4.24]
Party magnitude				
Party magnitude	2.99	-0.23	5.37	-19.09
(median)[‡]	[-1.91:7.88]	[-0.51:0.04]	[-19.41:30.16]	[-39.79:1.62]
(pre-quota)	[-1.79:7.76]	[-0.55:0.08]	[-34.93:45.68]	[-56.56:18.38]
Party magnitude	7.38	0.41	14.75	9.53
(median)[‡]	[3.12:11.64]	[0.28:0.53]	[7.13:22.36]	[-1.37:20.43]
(post-quota)	[2.72:12.04]	[0.27:0.54]	[6.24:23.25]	[-3.22:22.28]
num. obs	321	321	321	321
(b) Buenos Aires				
Number of lists receiving seats				
# lists seats[†]	-6.75	-0.60	-1.18	-13.12
(pre-quota)	[-14.50:1.01]	[-0.93:-0.26]	[-28.00:25.63]	[-41.15:14.92]
	[-15.89:2.40]	[-1.03:-0.16]	[-36.28:33.91]	[-56.30:30.07]
# lists seats[†]	-7.59	-0.35	-17.23	-5.01
(post-quota)	[-12.34:-2.84]	[-0.56:-0.15]	[-36.01:1.54]	[-12.94:2.93]
	[-13.02:-2.16]	[-0.54:-0.17]	[-51.19:16.72]	[-11.17:1.16]
Party magnitude				
Party magnitude	0.36	-0.16	2.99	-6.68
(median)[‡]	[-1.02:1.75]	[-0.36:0.04]	[-6.79:12.76]	[-16.34:2.98]
(pre-quota)	[-0.54:1.27]	[-0.35:0.02]	[-4.86:10.83]	[-14.91:1.55]
Party magnitude	2.67	0.46	3.97	3.82
(median)[‡]	[-0.21:5.55]	[0.19:0.72]	[-4.94:12.88]	[-3.66:11.31]
(post-quota)	[-1.18:6.52]	[0.04:0.87]	[-9.94:17.88]	[-6.02:13.67]
num. obs	128	128	128	128

OLS regression estimates. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) log(*# list seats*) in column (2). (‡) log(*party magnitude* (median)) in column (2). (§) We added 1 to the outcome before logging.

fixed effects in all specifications. Panel (a) shows that in Argentina, for each additional list that wins a seat, the percentage of women elected falls by around 7.7-8.2 pp. The log-log specifications are reliably negative, with elasticities ranging between −0.28 and −0.81, and the probability of electing at least one woman falls by a whopping 19.3-20.0 pp. Only the effect on the probability of electing at least two women does not pass the usual significance threshold, though only during the post-quota period. The results for Buenos Aires reported in columns (1)-(2) of panel (b) are very similar in sign and size; only the probabilities of electing at least one or two women follow a different dynamic, though the estimates are generally negative and sometimes very large in size.

For Argentina, the effect for (median) party magnitude are the mirror opposite of these, though the effect is restricted to the post-quota period. Specifically, a unit increase in the magnitude of the median party raises the proportion of women elected by 7.4 pp., the log-log estimates imply an elasticity of 0.41, and the probability of electing at least one woman goes up by 14.8 pp. Only the probability of electing at least two women (a large 9.5 pp.) falls short of statistical significance. The results for Buenos Aires are very different, though: they mostly have the right sign – especially after the introduction of quotas – but only the log-log results are statistically significant at conventional levels.

Lastly, Table 4 shows that in Argentina after 1995, both the proportion of women elected and the probability of electing one or two women increased with the (vote-share weighted) percentage of female candidates heading party lists. We will only comment on this finding, which is almost trivial, to note that it does not extend to the number of female candidates placed in the *second* position in the list, for whom the effect is invariably negative and close to statistical significance in most specifications. This likely reflects the fact that in small districts several parties fall short of obtaining two seats, leaving second-placed (female) candidates out of the Chamber. As such, this result is entirely consistent with our minimal compliance assumption.

Table 4: Intermediate effect (IIb): Women's position in lists and female representation

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
	(1)	(2)	(3)	(4)
Women at the top of party lists, weighted by vote shares				
Women first (%, wt.)†	0.36 [0.20:0.53] [0.19:0.54]	0.17 [0.09:0.26] [0.08:0.27]	0.43 [0.20:0.65] [0.20:0.65]	0.44 [0.16:0.72] [0.12:0.75]
Women in the second position of the party list, weighted by vote shares				
Women second (%, wt.)†	-0.15 [-0.30:-0.00] [-0.31:0.01]	-0.07 [-0.18:0.05] [-0.19:0.06]	-0.19 [-0.40:0.01] [-0.39:0.00]	-0.05 [-0.31:0.20] [-0.30:0.19]
Women in the first two positions of party lists, weighted by vote shares				
Women first two (%, wt.)†	0.51 [0.22:0.81] [0.16:0.86]	0.15 [0.01:0.29] [-0.00:0.30]	0.53 [-0.03:1.08] [-0.05:1.10]	1.08 [0.38:1.78] [0.07:2.09]
num. obs	228	228	228	228

OLS regression estimates. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) Logged value of the (vote share-weighted) number of women in column (2). (‡) We added 1 to the outcome before logging.

Tables A11a and A12a in the SI show that including a full set of controls and their interactions only makes the results stronger. Panel (b) in both tables shows that restricting the sample to small provinces strengthens the results for the post-quota period, though the pre-quota estimates cease to be statistically significant. Tables A13 and A14 show that using alternative mediators produces similar results, especially for Argentina.

Out-of-sample: Latin America

The staggered electoral calendars employed in Argentina and Buenos Aires are somewhat peculiar.[14] From a purely theoretical perspective, this does not matter: our argument is that *if* we increased district magnitude exogenously in a setting with closed-list PR rules, some outcomes should follow. Staggered renewal is thus mainly a methodological tool: it provides an exogenous source of variation in district magnitude while keeping district characteristics constant.

That said, if our empirical results depended on this specific institutional feature – or some other factor common to Argentina and Buenos Aires but rare elsewhere –, the external validity of our findings may be compromised. Thus, it is worth noting that the combination of closed-list PR with gender quotas in small multi-member districts is common throughout Latin America. Figure 5 compares the percentage of districts and seats with a given magnitude in Argentina and Buenos Aires with a sample of 17 Latin American countries between 2008 and 2011 included in Jones, Alles and Tchintian (2012).[15] The most obvious difference are single-member districts, which are relatively common in Latin America because Bolivia, Mexico and Venezuela all have mixed-member systems. Other than that, relatively small multi-member districts – with magnitudes ranging between 2 and 9 – are the norm in both samples. The proportion of legislators elected in very large districts – magnitudes of 21 or larger – is higher in the Latin American sample, but not by a huge amount.

Table A3 in the SI further shows that between 2008 and 2011 all Latin American lower houses elected at least *some* of their members by proportional representation, as did 5

[14] Besides Argentina, the only Latin American country that employed staggered renewal in the lower house in recent times was Ecuador (1979-1996).

[15] There is one election per country. We excluded Argentina and Puerto Rico.

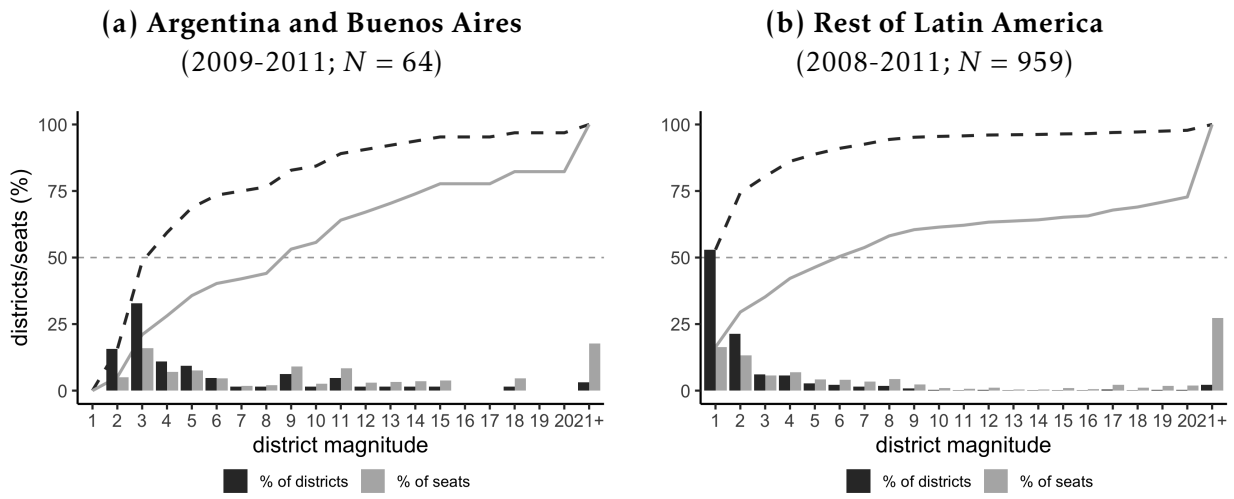

Figure 5: Distribution of *Magnitude* values. Broken and solid lines indicate the corresponding cumulative percentages.

out of 7 (71.4%) Senates. Around half of these cases employ some kind of gender quotas. The main difference with Argentina and Buenos Aires is that many of these are open-list systems. Nonetheless, a nontrivial number of chambers in the region – the Bolivian Senate and the legislatures of Costa Rica, El Salvador, Guatemala, Nicaragua, Paraguay and Venezuela – are elected by closed-list PR in multi-member districts of varying magnitudes.[16] All these countries except Guatemala, Nicaragua and Paraguay – where quotas only apply in primary elections – have employed some type of gender quota.

To further validate our claims, we carried an out-of-sample analysis in six of these countries where data was available,[17] plus the five Argentine provinces with an even number of representatives.[18] We ignored chambers elected by open-list PR because voters (as opposed to party leaders) play a crucial role in determining the gender of elected candidates, as well as SMDs, where district magnitude, the number of lists getting seats

[16] In Mexico, a rule limiting the disparity between seats and votes at the national level means that the number of seats received by a party in a MMD depends on the what happens in other MMDs.

[17] Bolivia (Senate, 2009-2019), Costa Rica (2002-2018), El Salvador (1994-2018), Guatemala (1985-2019), Paraguay (House and Senate, 1993-2018) and Venezuela (upper tier, 2010-2015).

[18] We thank an anonymous reviewer for suggesting this idea.

and party magnitude always take the same value (one) by construction. We collected data on district magnitude, party magnitude, and the number of women elected by each party in each district for all elections for which data could be downloaded from the website of the country's electoral authorities (see Table A3a). The resulting sample includes 679 district-elections in 103 districts corresponding to 8 chambers in 7 countries.

The pattern in Figure 6 is already familiar: if district magnitude is kept fixed, increasing the number of lists getting representation has a sharp negative relationship with the percentage of women elected. This is especially evident for values of *Magnitude* between 2 and 5, which comprise roughly two thirds of the sample. For larger magnitudes the relationship is less clear, but even then we see some severe decreases. For example, when *Magnitude* = 9, the proportion of women elected falls monotonically as the number of lists getting seats increases from 3 to 5. Values of *Magnitude* between 10 and 19 show a similar decrease as the number of lists gaining representation goes from 4 to 6; and even for magnitudes of 30 or more there is a visible drop as the number of lists with representation increases from 4 to 9. Figure A6 in the SI shows similar patterns on the probability of electing at least one or two women.

Table 5a reports the overall effect of district magnitude on female representation. We again follow equation (1), though this time using country-year fixed effects. For identification, we rely on the fact that 44 out of the 103 districts included in the sample (42.7%) experienced at least one change in *Magnitude* during the period covered.[19] Column (1) shows that such changes made little difference for the percentage of women elected, with both coefficients close to zero in absolute terms. However, the log-log specifications reported in column (2) imply a positive and statistically significant elasticity of between 0.27 and 0.63 for elections with and without gender quotas, respectively – both very similar to those reported in Table 1a. This supports the interpretation that it is *relative* rather

[19] Most of these correspond to Guatemala and El Salvador (see section A1 of the SI).

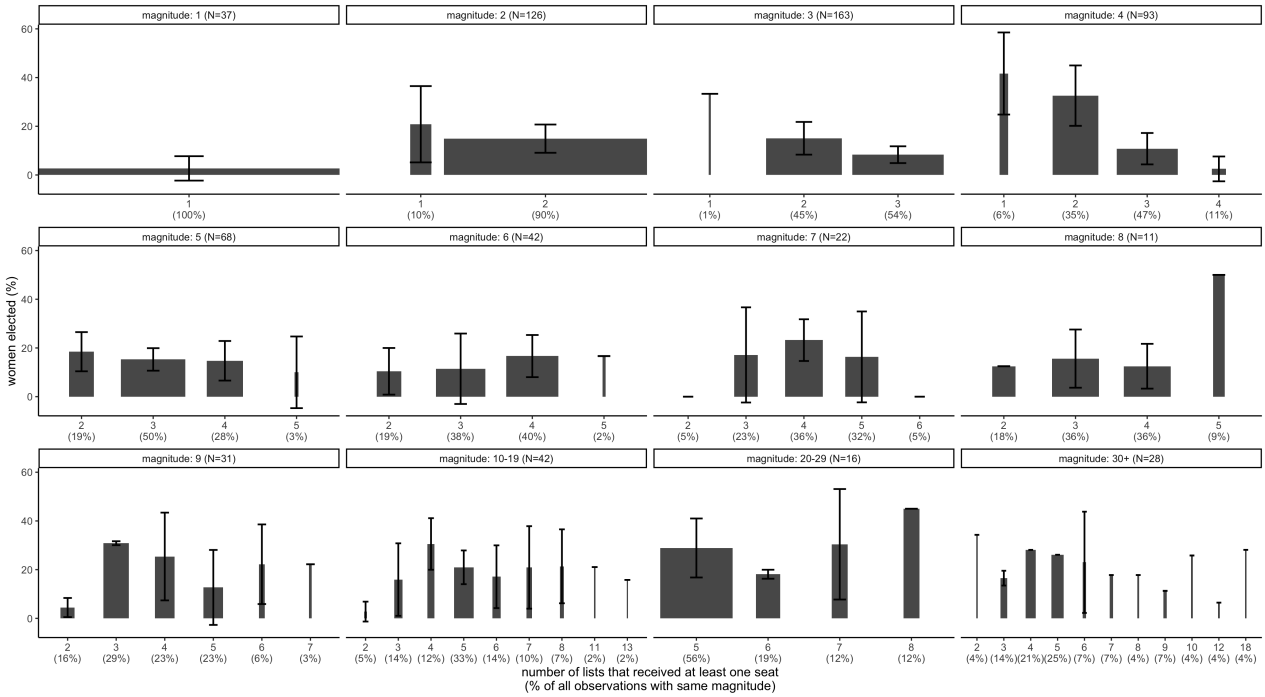

Figure 6: Latin America: women elected (%), conditional on district magnitude and the number of lists receiving seats. 95% CIs are based on standard errors clustered by district and adjusted by the number of clusters.

than *absolute* changes in district magnitude that matter most, and thus a logarithmic relationship provides a better approach to the data. The last two columns show no effect on the probability of electing at least one woman, but a respectable 3.5-4.3 pp. increase on the probability of electing at least two – though the significance of the latter is sensitive to the computation of the confidence intervals. Tables A15a and A16a show that these results remain unchanged if the five Argentine provinces with an odd number of representatives are excluded from the sample or if we only code a country as having gender quotas when these are "strong" – meaning that at least 30% of candidates in general elections must be women and there are placement mandates.[20] Table A17a suggests that results are substantially stronger in districts with a magnitude of five or less, though only when quotas are present. At 2.4pp., the (insignificant) effect of *Magnitude* is very

[20]Only Argentina (1993-2017), Bolivia (2014-2019), Costa Rica (2002-2018) and Venezuela (2015) employed such strong quotas.

Table 5: Out-of-sample results: Latin American elections held under closed-list PR

(a) Overall	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
effect	(1)	(2)	(3)	(4)
Magnitude†	-0.09	0.27	0.88	3.49
(pre-quota)	[-0.75:0.56]	[0.06:0.48]	[-1.86:3.62]	[0.18:6.79]
	[-0.72:0.53]	[0.04:0.50]	[-3.37:5.13]	[-3.97:10.95]
Magnitude†	0.21	0.63	0.03	4.30
(post-quota)	[-0.46:0.88]	[0.37:0.88]	[-2.87:2.93]	[0.59:8.01]
	[-0.45:0.88]	[0.33:0.92]	[-4.32:4.37]	[-2.51:11.11]

(b) Intermediate effect (I): District magnitude ⇒ Mediators

	# list seats	**ENPS**	**median**	***Party magnitude* mean**	**largest**
Magnitude	0.31	0.18	0.04	0.06	0.20
(pre-quota)	[0.17:0.45]	[0.08:0.29]	[-0.03:0.11]	[-0.03:0.15]	[0.03:0.38]
	[0.04:0.58]	[0.01:0.36]	[-0.03:0.11]	[-0.13:0.25]	[-0.07:0.47]
Magnitude	0.33	0.19	-0.04	0.01	0.19
(post-quota)	[0.19:0.47]	[0.08:0.30]	[-0.15:0.06]	[-0.10:0.13]	[0.01:0.37]
	[0.06:0.61]	[0.01:0.37]	[-0.19:0.11]	[-0.20:0.23]	[-0.10:0.48]

(c) Intermediate effect (II): Mediators and female representation

Number of lists receiving seats	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
# lists seats†	-2.87	-0.32	-5.44	-5.93
(pre-quota)	[-4.87:-0.86]	[-0.55:-0.09]	[-10.77:-0.12]	[-10.78:-1.07]
	[-4.92:-0.81]	[-0.58:-0.06]	[-10.79:-0.09]	[-11.12:-0.73]
# lists seats†	-0.32	0.13	-2.78	1.00
(post-quota)	[-2.24:1.59]	[-0.03:0.30]	[-6.96:1.39]	[-5.50:7.50]
	[-2.22:1.57]	[-0.06:0.33]	[-7.29:1.73]	[-6.24:8.23]
Party magnitude (median)				
Party magnitude	-0.21	-0.04	2.16	0.46
(median)†	[-1.36:0.94]	[-0.21:0.12]	[-0.45:4.77]	[-2.40:3.31]
(pre-quota)	[-1.36:0.94]	[-0.23:0.15]	[-0.20:4.52]	[-1.96:2.87]
Party magnitude	0.69	0.19	0.67	2.37
(median)†	[0.14:1.24]	[0.04:0.33]	[-1.16:2.50]	[0.06:4.67]
(post-quota)	[0.17:1.21]	[-0.02:0.39]	[-1.69:3.03]	[-1.12:5.85]
num. obs	679	679	679	679	679

OLS regression estimates. All specifications include district and country-year fixed effects. Specifications in panel (c) also include magnitude district effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (2). (‡) We added 1 to the outcome before logging.

similar to the one reported in Table 1a. The elasticity implied by the log-log model is a respectable 0.46, and the probability of electing a minimum of one or two women goes up by 20.1 and 11.1 pp. respectively, both large and significant effects.

Table 5b investigates how district magnitude affects the number of lists getting seats and party magnitude. For the former, the results are stronger than those reported in Table 2: every unit increase in *Magnitude* increases the (effective) number of lists getting seats by ≈ 0.30 (≈ 0.20). Both estimates are significant and independent of gender quotas. The results for party magnitude are a different story, however, as estimates in columns (3) and (4) are very close to zero in absolute terms and far from statistically significant. The only exception is the magnitude of the largest party, which is positive and sometimes significant but much smaller than for Argentina and Buenos Aires. Excluding observations from Argentina (Table A15b) or counting strong quotas only (Table A16b) does not change these results, but Table A17b reports substantially stronger results when restricting the sample to small districts.

Taken together, these results suggest that in Latin America – or at least in those countries where district magnitude changed during the period of interest, which basically means Guatemala and El Salvador (see section A1) – elections tend to be much more fragmented at the district level than in Argentina or Buenos Aires. Rather than allowing larger parties to capture more seats, an increase in *Magnitude* results in more marginal lists gaining representation. Consistent with this interpretation, Table A6a in the SI shows that in the Latin American sample the average values of # *list seats* and ENPS are 20-40% larger than in Argentina and Buenos Aires, and the corresponding within-district standard deviation is twice as large. Median and mean party magnitude values, in contrast, do not differ from Argentina's. Furthermore, if most of the effect of an increase in district magnitude is channeled through more lists getting representation, the overall effect on female representation should be nil, which is precisely what we saw in Table 5a.

Supporting this interpretation, the top panel of Table 5c shows that for each additional list that obtains a seat, the percentage of women elected falls by 2.9 pp., though only when quotas are not in place. The results for the other three outcomes are also negative and reliably estimated – the elasticity is –0.32, and the probability of electing at least one or two women falls by 5.4 and 5.9 pp., respectively – though again the post-quota estimates are much smaller in size and sometimes have the wrong sign. Looking at the effective number of parties in seats (Table A18) or excluding the Argentine provinces (Table A15c) does not change these results. Counting strong quotas (see Table A16c) makes the post-quota effects somewhat stronger, though only the effect on the probability of electing at least one woman – which decreases by almost 5.2 pp. – becomes statistically significant. In contrast, focusing districts with a magnitude of 5 or less makes the results much stronger and generally significant only for elections *with* gender quotas (Table A17c). This last finding is consistent with the fact that previous results were much stronger for Argentina, where district magnitudes tend to be small, than for Buenos Aires, where they are much larger.

In contrast, the results for (median) party magnitude reported at the bottom of Table 5c are different both from our theoretical expectations and from those reported in Table 3. While most estimates are correctly signed, only the impact on the percentage of women elected when quotas are in place is significant across the board. Even then, at 0.69 percentage points, the effect is very small in size. Measuring party magnitude in alternative ways produces somewhat larger but still weak results (see Table A18). Removing observations from Argentina or considering only strong quotas makes little difference (see Tables A15c and A16c). However, Table A17c shows that restricting the sample to districts with a magnitude of five or less makes the results both larger and statistically significant, though only when quotas are in place: the percentage of women elected goes up by 6.6 pp.; the elasticity is estimated at 0.22; and the probability of electing one or

two women jumps by 11.8 and 14.1 pp. Again, these findings are consistent with the suggestion that party magnitude only makes a difference in small districts.

Conclusion

Among students of gender and politics there is a general consensus regarding the positive impact of quotas on the election of women, as well as an expectation of a positive relationship between district magnitude and female representation. However, there is still considerable debate regarding the actual size of this effect as well as the mechanisms underpinning it. In this piece we argue theoretically and show empirically that the effect of district magnitude is less straightforward than it seems at first sight because larger magnitudes may increase both party magnitude – which promotes the election of women – and the number of lists getting seats – which has a negative impact on female representation.

Combining data from three samples offers distinctive advantages in terms of both internal and external validity. The staggered electoral calendar employed in Argentina and Buenos Aires offers a more credible identification strategy than the magnitude changes observed in Latin America, which are concentrated in two countries (see section A1) and often coincide with major changes in assembly size. Observing magnitude changes over three decades also makes us confident that the results are not driven by a handful of elections. On the other hand, finding consistent results in the Latin American sample suggests that the applicability of the argument is not restricted to countries with peculiar electoral calendars.

That said, our results need to be interpreted carefully, as they are contingent on the interaction between multiples rules. First, and in line with the literature, we endorse the claim that the most effective rules for promoting the election of women are well-

designed quotas; large magnitudes can at best complement this effect. Second, while in Argentina and Buenos Aires an increase in district magnitude sometimes increased party magnitude and sometimes led to more lists gaining representation; in the Latin American sample the second effect predominated, and consequently the overall effect of district magnitude on female representation was almost nil. This suggests that the effect of district magnitude may depend on the degree of party fragmentation within districts, which is an empirical rather than a theoretical issue. A potential implication – which we leave for future research – is that in such a setting, increasing the electoral threshold, and thus making small parties less likely to obtain their first seat, may unintentionally increase female representation.

Finally, the results are much stronger for small-magnitude districts. While such districts are a common feature of our samples (Figure 5), the fact that the results are weaker for Buenos Aires and Latin America suggests that extrapolating results from small-magnitude districts to large-magnitude ones is not warranted. We can think of two potential explanations for this. One is that while party leaders may always want to nominate women in marginal positions, this is easier to do in small-magnitude districts than in large-magnitude ones. The other emphasizes diminishing marginal returns: with a magnitude of 3, each woman elected represents 33% of the number of legislators in a district, but with a magnitude of 17, the corresponding value is just 5.9%. The positive log-log estimates reported in column (2) of Tables 1 and 5a are *prima facie* consistent with this claim, but we hope future researchers will address this issue in more detail. All in all, the moral of our story is clear: if you want to maximize the descriptive representation of women, enact a generous quota, make sure it is enforced, and limit the degree of electoral fragmentation.

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Supporting Information

"District Magnitude and Female Representation: Evidence from Argentina and Latin America," by Adrián Lucardi and Juan Pablo Micozzi (forthcoming, *American Journal of Political Science*)
(for online publication only)

(1) Section A1 describes the electoral calendar employed in the Argentine Chamber of Deputies and the legislature of the province of Buenos Aires; shows that the two chambers of the latter differ little except in terms of district magnitude; and summarizes the electoral rules employed in 17 Latin America countries covered by Jones, Alles and Tchintian (2012).

(2) Section A2 presents the results of the balance checks.

(3) Section A3 presents the descriptive statistics.

(4) Section A4 reports the robustness checks.

A1 Electoral calendar

Table A2 lists all districts that elect representatives to the legislature of the province of Buenos Aires and indicates whether they elect more representatives in midterm or concurrent election years. Table A1 does the same for the Argentine Chamber of Deputies. Table A3 lists the electoral rules employed in 17 Latin American countries covered by Jones, Alles and Tchintian (2012) plus those included in the out-of-sample analysis.

Magnitude changes in Latin America. In the Latin American sample, variation in district magnitude comes from three main sources: (a) changes in assembly size in Guatemala, whose legislature switched from 100 members in 1985 to 116 in 1990, 80 in 1994, 113 in 1999, and 158/60 afterwards; (b) the 2006 disappearance of El Salvador's national district, whose 20 seats were divided among the remaining 14 constituencies; and (c) minor reallocations following national censuses in several countries. To the best of our knowledge, district boundaries, which coincide with subnational administrative divisions, did not change during the period of interest. At the very least, district *names* remained constant.

Congruent bicameralism in Buenos Aires. The chambers of the Buenos Aires legislature are extremely similar in terms of both (a) how representatives are elected; and (b) what constitutional powers they have. The only major difference is the magnitude of the districts used to elect deputies and senators.

1. *Electoral rules.* Arts. 56 and 62 of the 1934 provincial constitution (69 and 75 in the 1994 constitution) specify that the lower and upper chamber will have 84 and 42 legislators respectively, though these numbers may be increased up to a maximum of 100 and 50. Arts. 57 and 65 (now 70 and 78) mandate that both deputies and senators will serve four-year terms, but the chambers will be renewed by halves ev-

ery two years. There is a difference in minimum age requirements (22 for deputies, 30 for senators; see arts. 58 and 63, now 71 and 76), but legislators are generally older than 30, so this matters little in practice. Art. 48 (now art. 61) establishes that the legislature must create an unspecified number of electoral districts, which will elect a minimum of 3 senators and 6 deputies. The district boundaries and district magnitudes listed in Table A2 were established in arts. 12-13 (enacted in 1946 and last amended in 1961) of provincial law #5109. Arts. 109-110 of the same law, which regulate the electoral formula and threshold, make no distinctions between the lower and upper chambers.

2. *Legislative powers.* The duration of legislative sessions and quorum requirements are identical for both chambers. As in any conventional *navette* system, they set their own budget and rules, create their own committees, make non-binding resolutions and declarations, and summon members of other branches for questioning (arts. 70-89 of the 1934 provincial constitution, now arts. 83-102). Arts. 90-99 and 192 (now 103-112 and 206) give both chambers identical attributions to introduce and approve bills – there is not even a requirement that the budget be introduced in the lower chamber –, override changes made by the other chamber, or override executive vetoes. A few minor differences can be found in roles like impeachment (the lower chamber prosecutes and the Senate judges) and confirmation powers: executive nominees to the Provincial Board of Education must be ratified by the lower chamber, while the Senate confirms the heads of the Treasury and the General Accountant (see arts. 60, 66 and 69, now 73, 79 and 82).

Table A1: Delegation sizes and district magnitudes in Argentina, 1985-2017

province	in sample?	delegation size	magnitude (midterm)	magnitude (concurrent)
Catamarca La Pampa Neuquén San Luis Santa Cruz	Yes	5	3	2
Chubut Formosa La Rioja Río Negro Tierra del Fuego*	Yes	5	2	3
Jujuy San Juan	No	6	3	3
Chaco	Yes	7	4	3
Corrientes† Misiones Salta Santiago del Estero‡	Yes	7	3	4
Entre Ríos	Yes	9	5	4
Tucumán	Yes	9	4	5
Mendoza	No	10	5	5
Córdoba	No	18	9	9
Santa Fe	Yes	19	9	10
Ciudad de Buenos Aires	Yes	25	13	12
Buenos Aires	No	70	35	35
Total	19/24	257	127	130
mean median		10.7 6.5	5.3 3.0	5.4 3.0

Midterm years: 1985, 1989, 1993, 1997, 2001, 2005, 2009, 2013 and 2017. Concurrent years: 1987, 1991, 1995, 1999, 2003, 2007, 2011 and 2015. (*) Elected only 2 deputies before 1991 (in midterm years). (†) The ordering of midterm and concurrent elections is reversed after 1993, when the subnational electoral calendar changed. (‡) The ordering of midterm and concurrent elections is reversed after 2005, when the subnational electoral calendar changed.

Table A2: Delegation sizes and district magnitudes in Buenos Aires, 1985-2015

district	in sample?	delegation size	magnitude (midterm)	magnitude (concurrent)
sección VIII	Yes	3 (upper) + 6 (lower)	6	3
sección VII	Yes	3 (upper) + 6 (lower)	3	6
sección II	Yes	5 (upper) + 11 (lower)	11	5
sección V	Yes	5 (upper) + 11 (lower)	5	11
sección VI	Yes	6 (upper) + 11 (lower)	11	6
sección IV	Yes	7 (upper) + 14 (lower)	7	14
sección I	Yes	8 (upper) + 15 (lower)	8	15
sección II	Yes	9 (upper) + 18 (lower)	18	9
Total	8/8	46 (upper) + 92 (lower)	69	69
mean		5.75 (upper) + 11.5 (lower)	8.6	8.6
median		5.5 (upper) + 11 (lower)	7.5	7.5

Midterm years: 1985, 1989, 1993, 1997, 2001, 2005, 2009 and 2013. Concurrent years: 1987, 1991, 1995, 1999, 2003, 2007, 2011 and 2015.

Table A3: Electoral rules and gender quotas in Latin America

country	chamber	period	quota	# elections	# districts	# obs.†
(a) Closed-list PR						
Argentina*	lower	pre-quota: 1985-1991 post-quota: 1993-2017	33%	4 13	5	20 65
Bolivia	lower (upper tier)	post-quota: 2009	50%	1	9	—
	upper	post-quota: 2009-2019	25/50%	3	9	27
Costa Rica	unicameral	post-quota: 2002-2018	40/50%	5	7	35
El Salvador	unicameral	pre-quota: 1994-2012 post-quota: 2015-2018	30%	7 2	14/15	102 28
Guatemala	unicameral	pre-quota: 1985-2019	—	10	24	240
Mexico	lower (upper tier)	post-quota: 2009	40%	1	5	—
Nicaragua	unicameral	pre-quota: 2011	—	1	18	—
Paraguay	upper & lower	pre-quota: 1993 post-quota: 1998-2018	20%‡	1 5	18 + 1	18 + 1 90 + 5
Venezuela	unicameral (upper tier)	pre-quota: 2010 post-quota: 2015	50%	1 1	24	24 24
(b) Open-list PR						
Brazil	lower	post-quota: 2010	30%	1	27	—
Chile	upper & lower	pre-quota: 2009	—	1	60 + 9	—
Colombia	upper & lower	pre-quota: 2010	—	1	36 + 2	—
Dom. Republic	lower	post-quota: 2010	33%	1	48	—
Ecuador	unicameral	post-quota: 2009	50%	1	26	—
Honduras	unicameral	post-quota: 2009	30%	1	18	—
Panama	unicameral	post-quota: 2009	30%‡	1	39	—
Peru	unicameral	post-quota: 2011	30%	1	26	—
(c) Single-member district plurality (SMDP)						
Bolivia	lower (lower tier)	post-quota: 2009	50%	1	70	—
Dom. Republic	upper	pre-quota: 2010	—	1	32	—
Mexico	lower (lower tier)	post-quota: 2009	40%	1	300	—
Venezuela	unicameral (lower tier)	pre-quota: 2010	—	1	90	—
(d) Other: open-list MMPD (Brazil) and PR with double simultaneous vote (Uruguay)						
Brazil	upper	pre-quota: 2010	—	1	27	—
Uruguay	upper & lower	pre-quota: 2009	—	1	19 + 1	—

All data for countries for which a single election is mentioned comes from Jones, Alles and Tchintian (2012). Remaining data comes from OEP – Bolivia; TSE – Costa Rica; TSE – El Salvador; TSE, Electoral Passport and Asociación de Investigación y Estudios Sociales (2005) – Guatemala; SILPY and TSJE – Paraguay; CNE – Venezuela; and IDEA (2020) for gender quotas. (*) Only provinces with an even number of representatives (see Table A1). (†) Only reported for countries included in the out-of-sample analysis (Table 5). (‡) For primary elections only.

A2 Balance checks

Random sampling implies that districts that elect more representatives in midterm years should not differ systematically from those that have larger magnitudes in concurrent years. To check whether this is the case, we collected data on 40 (for Argentina) or 46 (for Buenos Aires) pre-treatment covariates and examined the difference in means between both groups of districts in each sample.

Tables A4 and A5 display the results for the Argentine and Buenos Aires samples, respectively. We report the means for both groups of districts, as well as the difference between the two and the exact p-values for the sharp null hypothesis that having a larger magnitude in midterm years has no effect for any district, which are also displayed in Figure A1. To calculate these, we sampled 100,000 vectors of eight 1's and ten 0's (or ten 1's and eight 0's), always adding Tierra del Fuego to the ten-province group[1] (for Argentina); or four 1's and four 0's (for Buenos Aires). For every draw we calculated the difference in means for each variable, and saved these values. The p-values are 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 Argentina indicates that approximately 89,000 simulations produced a difference in means that was equal to or larger in size than the one we observe in the data.

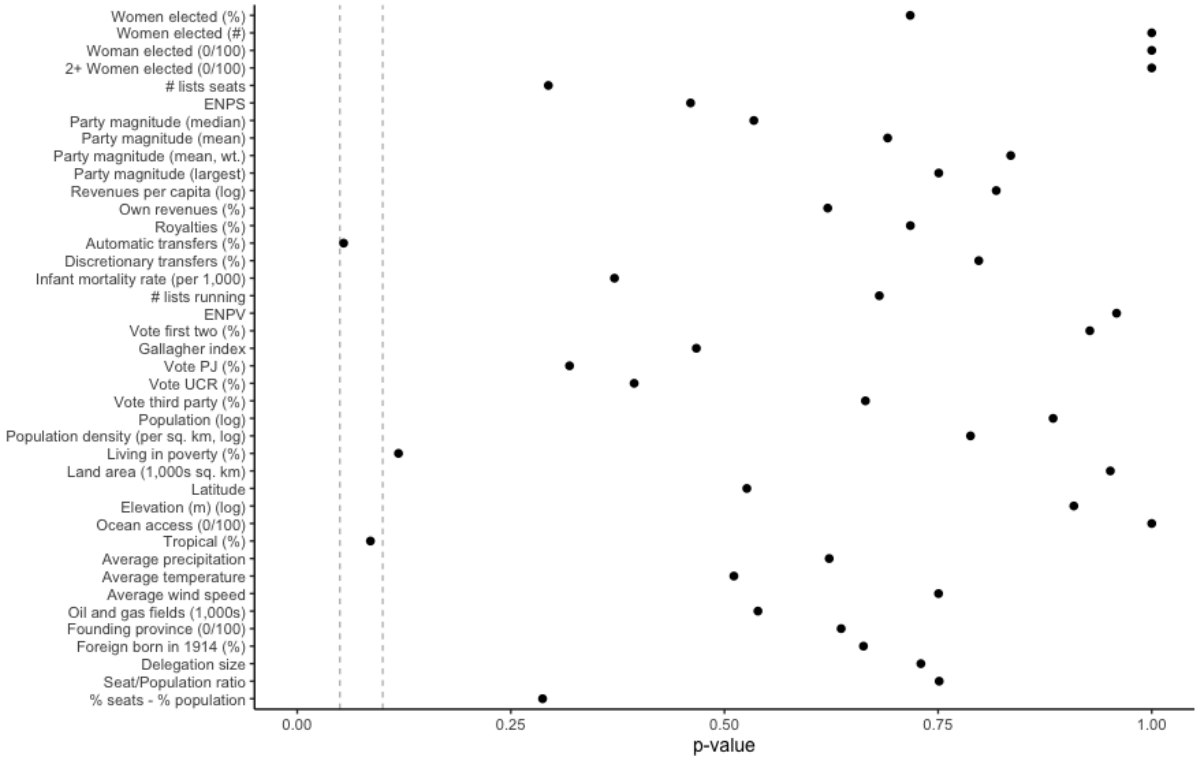
[1] This reflects the rules of the original draw that determined whether the deputies elected in 1983 would receive a two- or a four-year term: the number of deputies elected in concurrent and midterm years had to be equal; and the two deputies from Tierra del Fuego had to be elected simultaneously (Dal Bó and Rossi 2011). 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 only two representatives in midterm years. Upon becoming a province, Tierra del Fuego began to elect three additional deputies in concurrent years, thus joining the former group.

Table A4: Covariate balance (1): Argentina

(a) *Outcome variables (1983)*	large midterm mean	large concurrent mean	difference	*p*-value
Women elected (%)	2.29	3.12	-0.83	0.72
Women elected (#)	0.25	0.18	0.07	1.00
Woman elected (0/100)	25.00	18.18	6.82	1.00
2+ Women elected (0/100)	0.00	0.00	0.00	1.00
(b) *Intervening variables (1983)*				
# lists seats	2.62	2.18	0.44	0.29
ENPS	2.22	2.07	0.14	0.46
Party magnitude (median)	2.69	3.36	-0.68	0.53
Party magnitude (mean)	2.98	3.39	-0.41	0.69
Party magnitude (mean, wt.)	3.29	3.06	0.23	0.83
Party magnitude (largest)	4.50	3.91	0.59	0.75
(c) *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
(d) *Electoral outcomes (1983)*				
# 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
Gallagher index	7.97	9.38	-1.41	0.47
Vote PJ (%)	38.70	43.01	-4.31	0.32
Vote UCR (%)	44.19	41.98	2.21	0.39
Vote third party (%)	10.05	8.06	1.99	0.67
(e) *Demographics (1980)*				
Population (log)	12.93	12.99	-0.07	0.89
Population density (per km^2, log)	2.10	1.69	0.41	0.79
Living in poverty (%)	31.00	39.81	-8.81	0.12
(f) *Geography and history*				
Land area (1,000s km^2)	104.93	106.92	-1.99	0.95
Latitude	35.11	32.52	2.58	0.53
Elevation (m)	6.20	6.17	0.03	0.91
Ocean access (0/100)	37.50	27.27	10.23	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	0.51
Average wind speed	3.53	3.39	0.14	0.75
Oil and gas fields (1,000s)	33.25	19.00	14.25	0.54
Founding province (0/100)	37.50	54.55	-17.05	0.64
Foreign born in 1914 (%)	31.06	26.68	4.38	0.66
(g) *Political representation (1983)*				
Delegation size	8.25	7.09	1.16	0.73
Seat/Population ratio	2.18	1.97	0.22	0.75
% seats - % population	0.81	0.46	0.35	0.29

Mean values of pre-treatment covariates for provinces that have a larger magnitude in midterm or concurrent years, respectively (see Table A1). The sample is limited to the 19 provinces that elect an odd number of representatives. The *p*-values correspond to the sharp null hypothesis that the effect of having a larger magnitude in midterm years is zero for all provinces.

(a) Argentine Chamber of Deputies (N = 19)



(b) Legislature of the Province of Buenos Aires (N = 8)

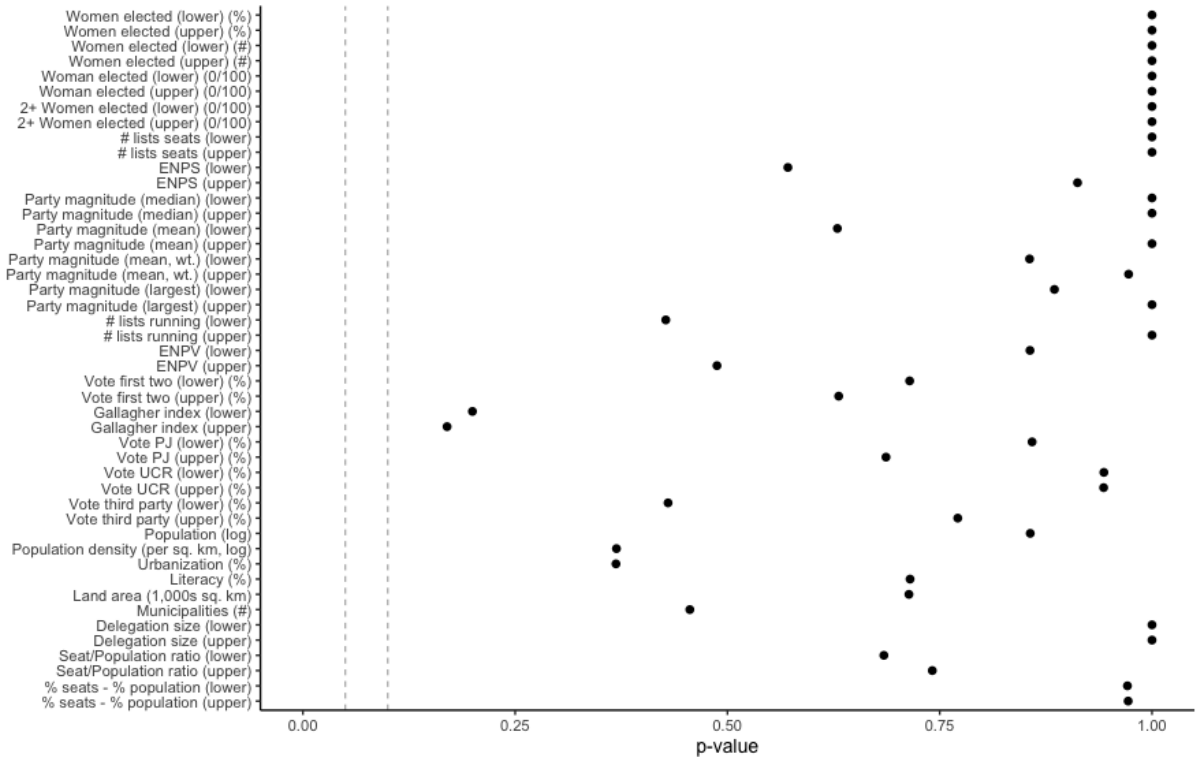


Figure A1: Covariate balance. The dots report the exact *p*-values for the sharp null hypothesis that having a higher magnitude in midterm years has no effect on any district.

Table A5: Covariate balance (2): Province of Buenos Aires

(a) *Outcome variables (1983)*	large midterm mean	large concurrent mean	difference	*p*-value
Women elected (lower) (%)	2.78	1.67	1.11	1.00
Women elected (upper) (%)	2.78	3.12	-0.35	1.00
Women elected (lower) (#)	0.50	0.25	0.25	1.00
Women elected (upper) (#)	0.25	0.25	0.00	1.00
Woman elected (lower) (0/100)	25.00	25.00	0.00	1.00
Woman elected (upper) (0/100)	25.00	25.00	0.00	1.00
2+ Women elected (lower) (0/100)	25.00	0.00	25.00	1.00
2+ Women elected (upper) (0/100)	0.00	0.00	0.00	1.00
(b) *Intervening variables (1983)*				
# lists seats (lower)	2.25	2.00	0.25	1.00
# lists seats (upper)	2.00	2.00	0.00	1.00
ENPS (lower)	1.97	1.89	0.08	0.57
ENPS (upper)	1.88	1.89	-0.02	0.91
Party magnitude (median) (lower)	5.50	5.75	-0.25	1.00
Party magnitude (median) (upper)	2.88	2.88	0.00	1.00
Party magnitude (mean) (lower)	5.00	5.75	-0.75	0.63
Party magnitude (mean) (upper)	2.88	2.88	0.00	1.00
Party magnitude (mean, wt.) (lower)	5.21	5.36	-0.15	0.86
Party magnitude (mean, wt.) (upper)	2.75	2.69	0.07	0.97
Party magnitude (largest) (lower)	6.50	7.00	-0.50	0.89
Party magnitude (largest) (upper)	3.50	3.50	0.00	1.00
(c) *Electoral outcomes (1983)*				
# lists running (lower)	14.25	15.00	-0.75	0.43
# lists running (upper)	13.75	14.00	-0.25	1.00
ENPV (lower)	2.38	2.37	0.01	0.86
ENPV (upper)	2.29	2.34	-0.05	0.49
Vote first two (lower) (%)	89.21	89.80	-0.58	0.71
Vote first two (upper) (%)	91.04	90.38	0.66	0.63
Gallagher index (lower)	6.18	7.44	-1.25	0.20
Gallagher index (upper)	6.55	7.77	-1.22	0.17
Vote PJ (lower) (%)	36.38	36.07	0.30	0.86
Vote PJ (upper) (%)	36.91	36.09	0.83	0.69
Vote UCR (lower) (%)	52.84	53.72	-0.89	0.94
Vote UCR (upper) (%)	54.13	54.29	-0.16	0.94
Vote third party (lower) (%)	4.12	3.34	0.78	0.43
Vote third party (upper) (%)	2.80	3.27	-0.47	0.77
(d) *Demographics (1980)*				
Population (log)	13.69	13.62	0.07	0.86
Population density (per km^2, log)	4.33	3.16	1.17	0.37
Urbanization (%)	89.57	81.86	7.71	0.37
Literacy (%)	96.33	95.98	0.35	0.71
(e) *Geography and history*				
Land area (1,000s km^2)	32.88	44.02	-11.14	0.71
Municipalities (#)	13.25	18.00	-4.75	0.46
Delegation size (lower)	11.50	11.50	0.00	1.00
(f) *Political representation (1983)*				
Delegation size (upper)	5.75	5.75	0.00	1.00
Seat/Population ratio (lower)	1.64	1.94	-0.29	0.68
Seat/Population ratio (upper)	1.63	1.92	-0.28	0.74
% seats - % population (lower)	-0.13	0.13	-0.27	0.97
% seats - % population (upper)	-0.13	0.13	-0.27	0.97

Mean values of pre-treatment covariates for districts that have a larger magnitude in midterm or concurrent years, respectively (see Table A2). The *p*-values correspond to the sharp null hypothesis that the effect of having a larger magnitude in midterm years is zero for all districts.

A3 Descriptive statistics

Table A6: Descriptive statistics

	Argentina					Province of Buenos Aires					Latin America‡				
(a) Full sample	*N*	mean	sd.*	min.	max.	*N*	mean	sd.*	min.	max.	*N*	mean	sd.*	min.	max.
Magnitude	321	3.9	2.6	2.0	13.0	128	8.6	4.3	3.0	18.0	679	6.2	7.6	1.0	45.0
Women elected (%)	321	24.6	21.4	0.0	100.0	128	18.3	13.6	0.0	50.0	679	15.5	20.1	0.0	100.0
Women elected (#)	321	1.0	1.2	0.0	7.0	128	1.7	1.5	0.0	6.0	679	1.2	2.2	0.0	13.0
Woman elected (0/100)	321	63.6	48.2	0.0	100.0	128	73.4	44.3	0.0	100.0	679	47.1	50.0	0.0	100.0
2+ Women elected (0/100)	321	20.6	40.5	0.0	100.0	128	47.7	50.1	0.0	100.0	679	23.3	42.3	0.0	100.0
# lists seats	321	2.2	0.8	1.0	7.0	128	2.4	0.8	1.0	5.0	679	3.0	1.6	1.0	18.0
ENPS	321	2.0	0.7	1.0	6.0	128	2.1	0.6	1.0	3.7	679	2.6	1.1	1.0	11.6
Party magnitude (median)	321	1.7	0.8	1.0	5.0	128	3.5	1.5	1.0	9.0	679	1.8	1.7	1.0	20.0
Party magnitude (mean)	321	1.8	0.8	1.0	5.0	128	3.6	1.5	1.5	9.0	679	1.9	1.7	1.0	17.5
Party magnitude (mean, wt.)	321	1.5	0.8	0.4	5.8	128	3.2	1.5	0.7	8.1					
Party magnitude (largest)	321	2.2	1.3	1.0	9.0	128	4.9	2.2	2.0	11.0	679	2.8	3.4	1.0	24.0
(b) Pre-quota (ARG: 1985-1991; PBA: 1985-1995; LatAm: various countries and years)															
Magnitude	74	3.9	2.7	2.0	13.0	48	8.6	4.3	3.0	18.0	405	5.6	6.3	1.0	45.0
Women elected (%)	74	3.9	10.5	0.0	50.0	48	6.9	8.6	0.0	33.3	405	9.9	17.6	0.0	100.0
Women elected (#)	74	0.2	0.5	0.0	3.0	48	0.7	0.9	0.0	3.0	405	0.7	1.4	0.0	10.0
Woman elected (0/100)	74	13.5	34.4	0.0	100.0	48	45.8	50.4	0.0	100.0	405	34.1	47.5	0.0	100.0
2+ Women elected (0/100)	74	4.1	19.9	0.0	100.0	48	14.6	35.7	0.0	100.0	405	13.6	34.3	0.0	100.0
# lists seats	74	2.3	0.6	1.0	4.0	48	2.3	0.7	1.0	4.0	405	3.1	1.7	1.0	18.0
ENPS	74	2.2	0.5	1.0	3.6	48	2.1	0.5	1.0	3.3	405	2.7	1.2	1.0	11.6
Party magnitude (median)	74	1.6	0.7	1.0	4.0	48	3.5	1.3	1.0	7.0	405	1.5	1.3	1.0	17.0
Party magnitude (mean)	74	1.6	0.7	1.0	4.0	48	3.6	1.3	1.5	7.0	405	1.7	1.3	1.0	15.0
Party magnitude (mean, wt.)	74	1.5	0.8	0.7	4.2	48	3.3	1.5	1.2	6.9					
Party magnitude (largest)	74	2.0	1.3	1.0	7.0	48	4.9	2.1	2.0	11.0	405	2.4	2.6	1.0	20.0
(c) Post-quota (ARG: 1993-2017; PBA: 1997-2015; LatAm: various countries and years)															
Magnitude	247	3.9	2.6	2.0	13.0	80	8.6	4.3	3.0	18.0	274	7.1	9.1	1.0	45.0
Women elected (%)	247	30.8	19.9	0.0	100.0	80	25.2	11.2	0.0	50.0	274	23.8	20.7	0.0	100.0
Women elected (#)	247	1.3	1.2	0.0	7.0	80	2.3	1.5	0.0	6.0	274	1.9	2.9	0.0	13.0
Woman elected (0/100)	247	78.5	41.1	0.0	100.0	80	90.0	30.2	0.0	100.0	274	66.4	47.3	0.0	100.0
2+ Women elected (0/100)	247	25.5	43.7	0.0	100.0	80	67.5	47.1	0.0	100.0	274	37.6	48.5	0.0	100.0
# lists seats	247	2.2	0.9	1.0	7.0	80	2.4	0.9	1.0	5.0	274	2.8	1.4	1.0	8.0
ENPS	247	2.0	0.7	1.0	6.0	80	2.1	0.6	1.0	3.7	274	2.4	0.9	1.0	5.7
Party magnitude (median)	247	1.8	0.8	1.0	5.0	80	3.5	1.7	1.5	9.0	274	2.1	2.0	1.0	20.0
Party magnitude (mean)	247	1.8	0.8	1.0	5.0	80	3.6	1.6	1.5	9.0	274	2.2	2.1	1.0	17.5
Party magnitude (mean, wt.)	247	1.5	0.8	0.4	5.8	80	3.1	1.6	0.7	8.1					
Party magnitude (largest)	247	2.3	1.3	1.0	9.0	80	4.8	2.2	2.0	10.0	274	3.4	4.2	1.0	24.0
Women First (%)†	228	17.9	16.1	0.0	83.3										
Women First (%, wt.)†	228	17.5	23.9	0.0	98.1										
Women Second (%)†	228	74.5	23.0	0.0	100.0										
Women Second (%, wt.)†	228	75.1	29.2	0.0	100.0										
Women First Two (%)†	228	46.2	10.4	0.0	66.7										
Women First Two (%, wt.)†	228	46.3	12.4	0.0	85.0										
Women Third (%)†	168	30.6	23.0	0.0	100.0										
Women Third (%, wt.)†	168	27.7	28.4	0.0	100.0										
Women First Three (%)†	168	40.0	6.3	25.0	58.3										
Women First Three (%, wt.)†	168	39.1	8.2	15.8	64.3										

(*) Indicates the within-province standard deviation rather than the sample standard deviation. (†) Data for these variables is only available for the Argentine sample between 1995 and 2017. (‡) Elections held under closed-list PR only. These are the cases for which a valid number of observations is reported in the last column of Table A3a.

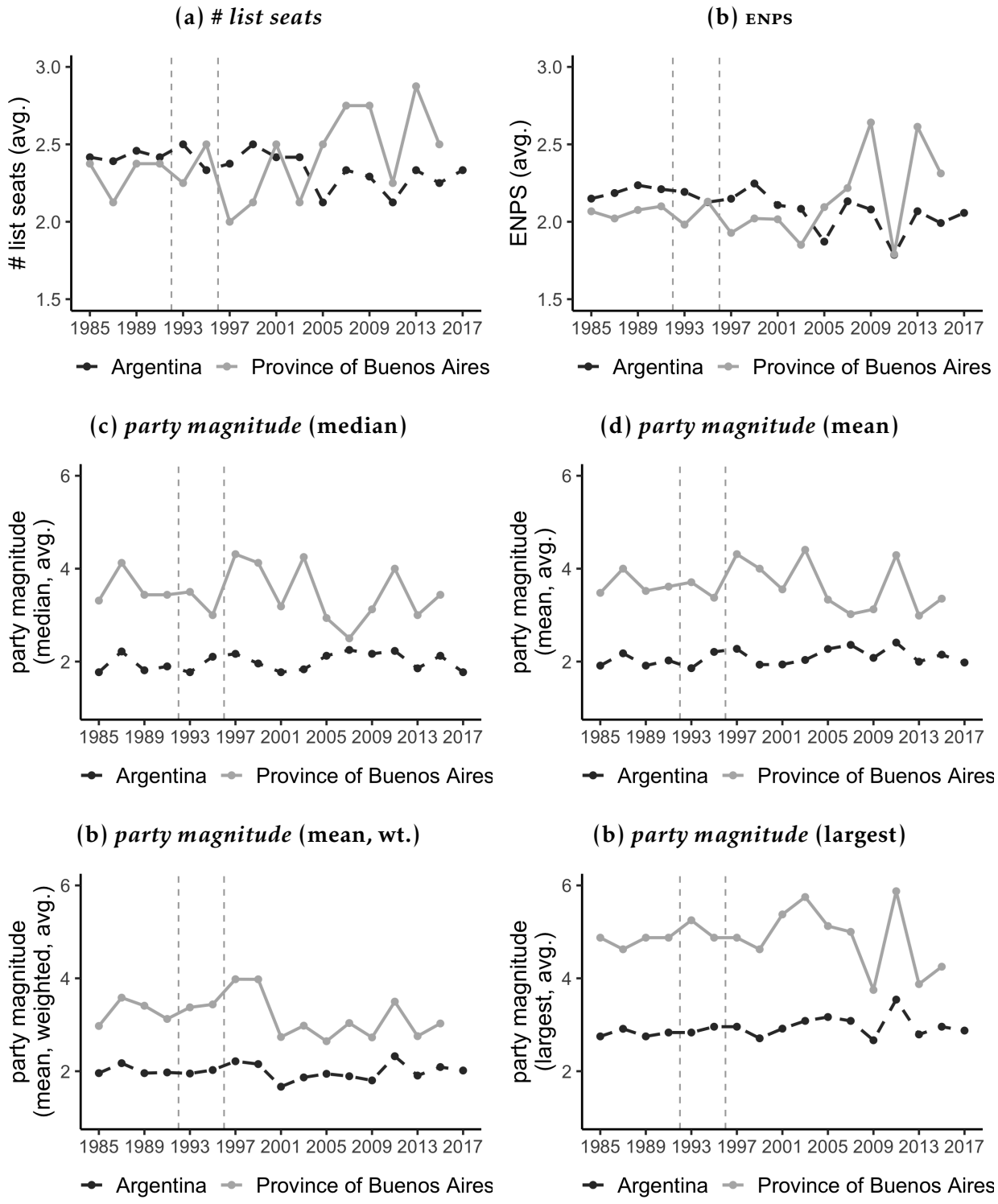


Figure A2: Evolution of intermediate variables over time in the Argentine Chamber of Deputies (1985-2017) and the legislature of the Province of Buenos Aires (1985-2015). The broken vertical lines indicate the date of the introduction of gender quotas: between 1991 and 1993 for Argentina, and between 1995 and 1997 for Buenos Aires.

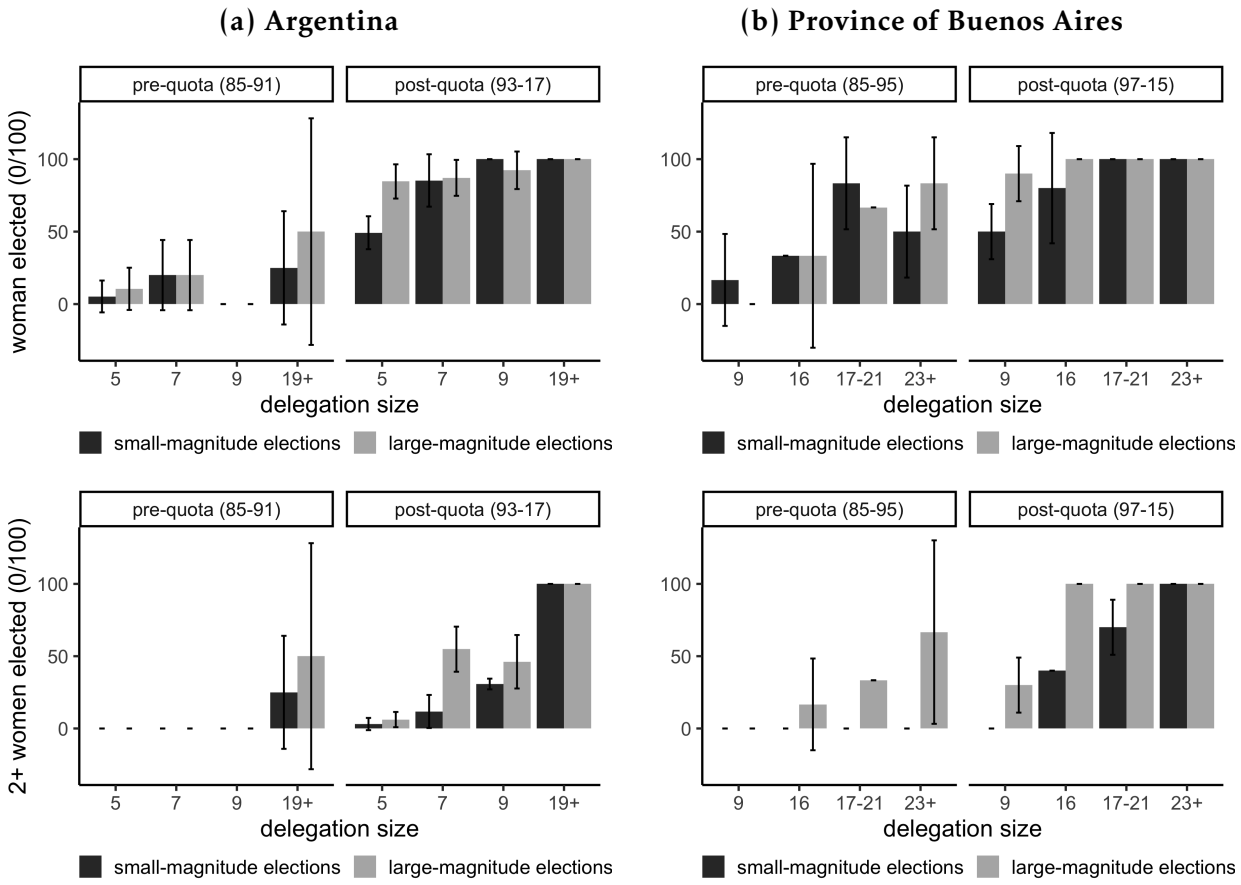


Figure A3: Probability of electing at least one or two female legislators in a district, conditional on delegation size and district magnitude. The black vertical lines indicate 95% CIs, based on robust standard errors clustered by district and assuming a Student's t-distribution with degrees of freedom equal to the number of districts minus one.

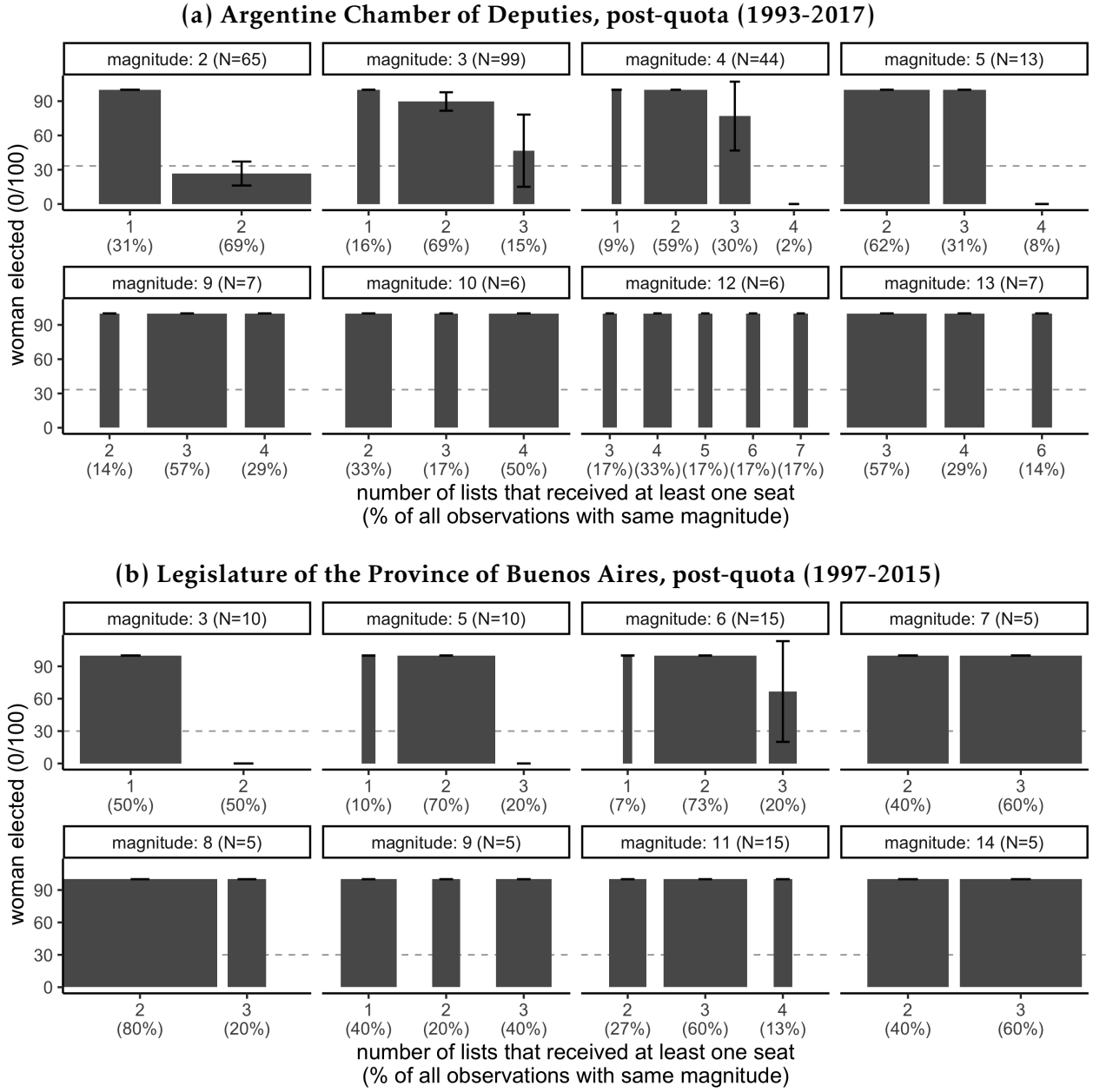


Figure A4: Probability of electing at least one woman, conditional on district magnitude and the number of lists receiving seats. Bar widths are proportional to the number of observations with a given value of *Magnitude*. The black vertical lines indicate 95% CIs, based on robust standard errors clustered by district and assuming a Student's *t*-distribution with degrees of freedom equal to the number of districts minus one.

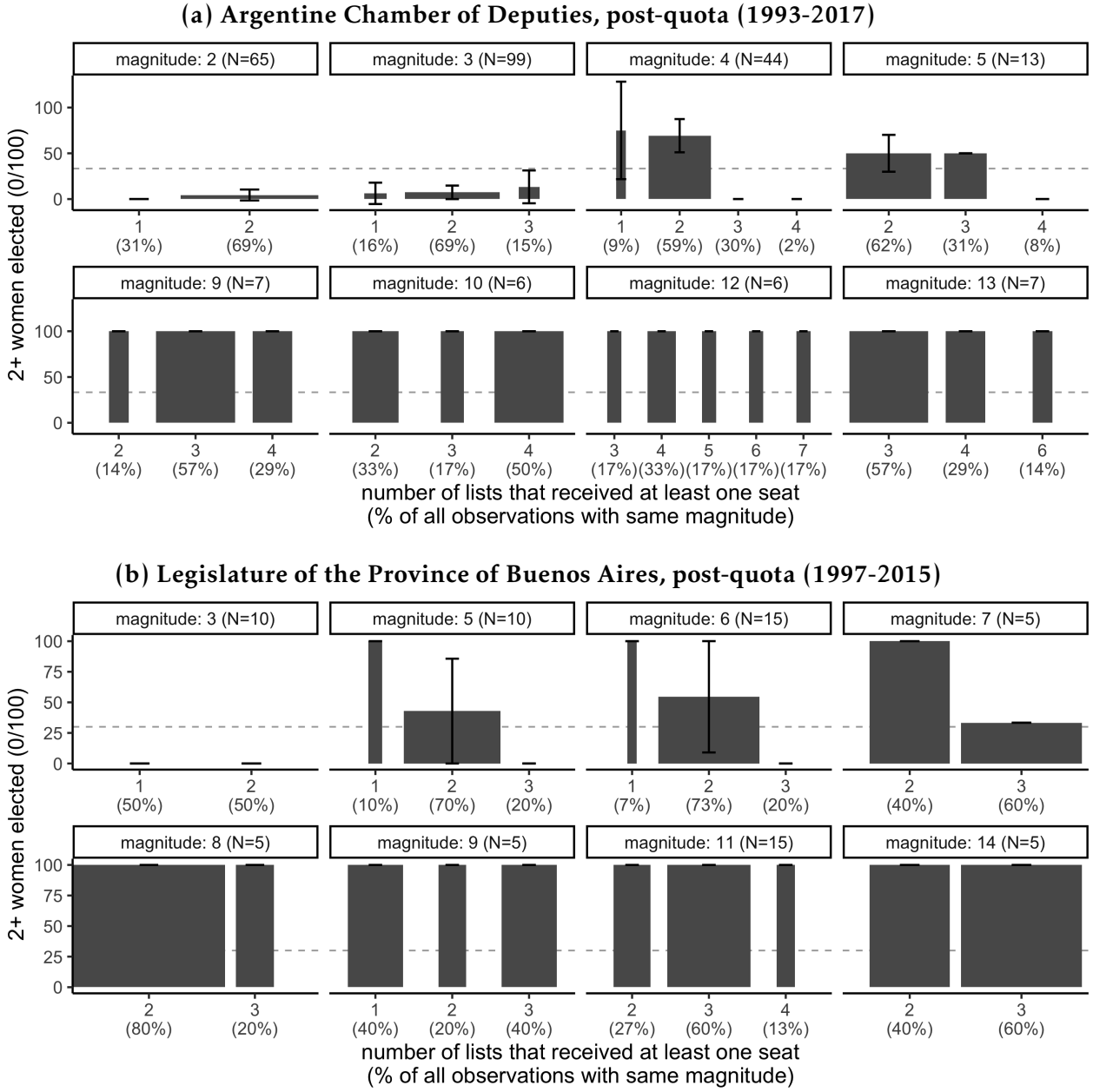


Figure A5: Probability of electing two or more women, conditional on district magnitude and the number of lists receiving seats. Bar widths are proportional to the number of observations with a given value of *Magnitude*. The black vertical lines indicate 95% CIs, based on robust standard errors clustered by district and assuming a Student's *t*-distribution with degrees of freedom equal to the number of districts minus one.

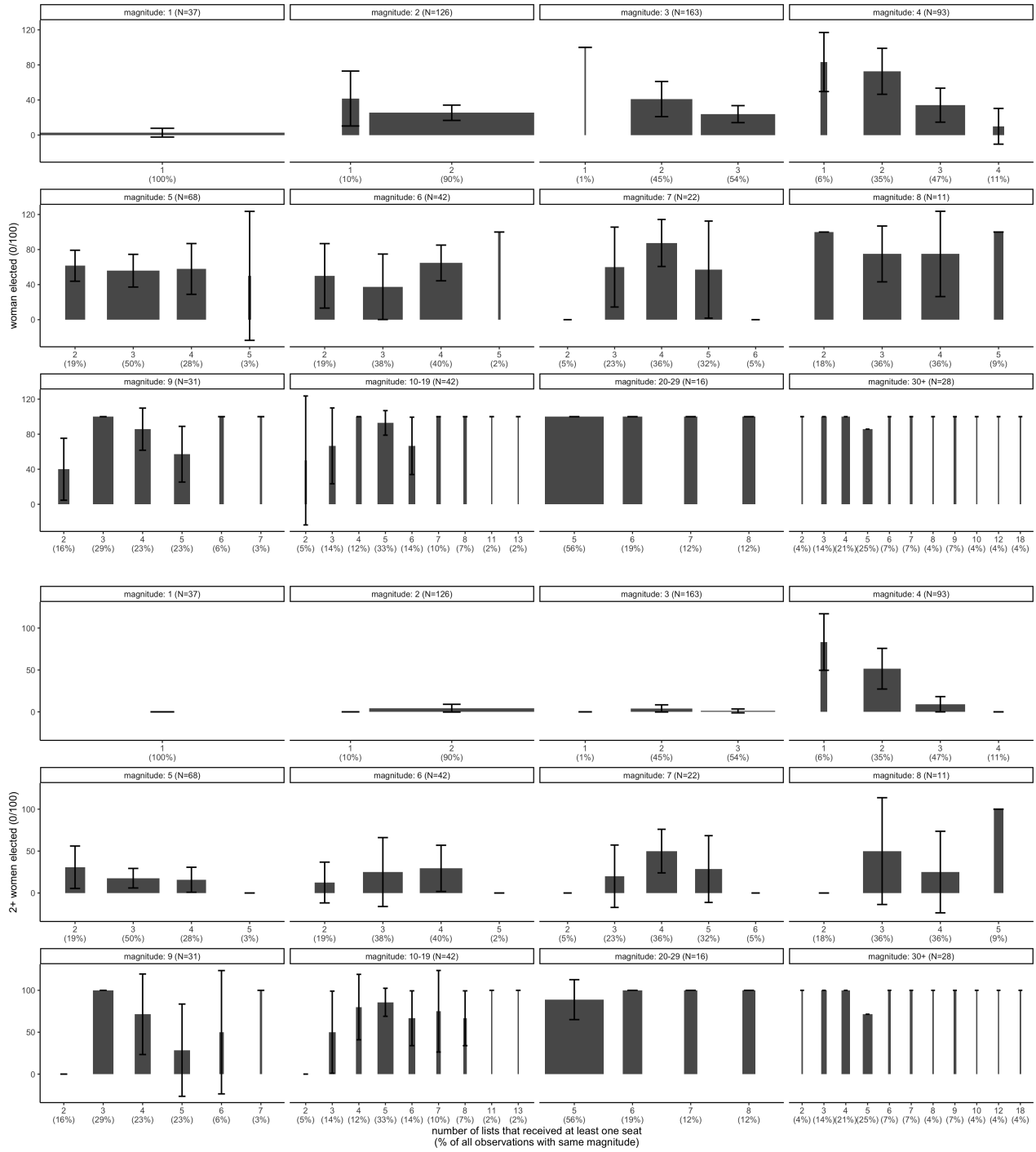


Figure A6: Probability of electing at least one (top) or two (bottom) women, conditional on district magnitude and the number of lists receiving seats – Latin American sample. Bar widths are proportional to the number of observations with a given value of *Magnitude*. The black vertical lines indicate 95% CIs, based on robust standard errors clustered by district and assuming a Student's t-distribution with degrees of freedom equal to the number of districts minus one.

A4 Robustness checks

(1) *Adding controls and small-magnitude sample.* Panel (a) in Tables A7, A9, A11 and A12 replicates the results reported in panel (a) of Tables 1 to 4, but including the following dummies plus all their possible interactions: concurrency with (a) presidential; (b) Senate; (c) gubernatorial; or (d) local legislative elections; and whether the incumbent governor (e) was allowed to run for re-election at the end of her term, regardless of whether (s)he was actually running; (f) was actually running for reelection; or (g) appeared in the ballot in any way (i.e., as a candidate for the Senate). The specifications in panel (b) do not include controls but restrict the analysis to the ten provinces with a delegation size of 5 or lower (see Table A1).

(2) *Female nomination and mediators.* Table A10 shows the effect of women's position in party lists – measured in six alternative ways: as the percentage of women placed in the first, second, or first two positions of the list, weighting lists both equally and by their vote shares – on the six mediators reported in Table 2. Due to data limitations, the sample is restricted to Argentina between 1995 and 2017.

(3) *Alternative mediators.* Tables A13 and A14 replicate the results in the first two panels of Table 3 but for alternative mediators: (a) the *effective* number of parties in seats (ENPS), which weights parties' seat shares by their squared values (Laakso and Taagepera 1979); and the (b) mean, (c) vote share-weighted mean; and (d) largest values of party magnitude.

(4) *Placebo results for Argentina.* Table A8 displays the effect of *Magnitude* on time-varying outcomes that should not be affected by it, like provincial revenues or the unemployment and infant mortality rates.

(5) *Latin American sample.* The last four tables replicate the specifications reported in Table 5, but introducing the following changes: (a) excluding observations from Argentina (Table A15); (b) counting "strong" quotas only, meaning that at least 30% of candidates in general elections must be women, there are placement mandates, and quotas are effectively enforced (Table A16); (c) looking at districts with a magnitude of 5 or less (Table A17); or (d) using alternative mediators (Table A18).

Table A7: Overall effect, adding controls + small provinces (Argentina only)

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
(a) Adding controls	(1)	(2)	(3)	(4)
Magnitude†	2.91	0.14	13.87	5.78
(pre-quota)	[-0.66:6.49]	[-0.12:0.41]	[1.53:26.21]	[-3.20:14.77]
	[-0.81:6.64]	[-0.17:0.46]	[-0.14:27.88]	[-7.03:18.60]
Magnitude†	3.32	0.65	16.24	11.43
(post-quota)	[-0.02:6.66]	[0.48:0.82]	[5.23:27.26]	[5.98:16.88]
	[-0.01:6.65]	[0.47:0.82]	[3.72:28.77]	[6.15:16.71]
num. obs	321	321	321	321
(b) Small provinces (delegation size ≤ 5)				
Magnitude†	0.88	0.09	5.29	-0.00
(pre-quota)	[-7.59:9.36]	[-0.27:0.45]	[-15.97:26.56]	[-0.00:0.00]
	[-7.81:9.58]	[-0.29:0.47]	[-17.13:27.72]	
Magnitude†	3.83	0.62	34.61	3.29
(post-quota)	[-2.24:9.90]	[0.37:0.88]	[20.74:48.48]	[-3.21:9.79]
	[-2.57:10.23]	[0.36:0.89]	[19.12:50.10]	
num. obs	168	168	168	168

OLS regression estimates. Panel (a) replicates the specifications in Table 1a, but adding the following dummies plus all their possible interactions: concurrency with (a) presidential; (b) Senate; (c) gubernatorial; or (d) local legislative elections; whether the incumbent governor (e) was allowed to run for re-election at the end of her term, regardless of whether (s)he was actually running; (f) was actually running for reelection; or (g) appeared in the ballot in any way (i.e., as a candidate for the Senate). Panel (b) replicates the specifications in Table 1a but restricting the sample to the ten provinces with a delegation size of 5 or lower. All specifications include district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) log(*Magnitude*) in column (2). (‡) We added 1 to the outcome before logging.

Table A8: Placebo outcomes for Argentina, 1985-2011

	revenues per capita (log)	*% own revenues*	*% royalties*	*% automatic transfers*	*% discretionary transfers*	*public employees (per 1,000)*	*unemployment rate (%)*	*infant mortality (per 1,000)*
(a) Pooled	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Magnitude†	-0.53	5.80	-1.39	-3.47	-0.72	-4.11	0.28	-0.57
	[-0.85:-0.21]	[2.83:8.77]	[-2.64:-0.15]	[-7.11:0.18]	[-1.24:-0.19]	[-6.55:-1.67]	[-0.23:0.79]	[-1.18:0.03]
	[-0.92:-0.14]	[-3.23:14.82]	[-2.86:0.08]	[-11.27:4.33]	[-1.13:-0.30]	[-7.80:-0.43]	[-0.80:1.37]	[-1.44:0.30]
(b) Fixed-effects								
Magnitude†	-0.02	-0.42	0.02	0.25	0.37	0.04	-0.01	-0.24
	[-0.07:0.03]	[-0.94:0.10]	[-0.57:0.61]	[-0.61:1.10]	[-0.27:1.00]	[-0.94:1.01]	[-0.28:0.26]	[-0.66:0.18]
	[-0.07:0.04]	[-0.96:0.12]	[-0.56:0.60]	[-0.62:1.12]	[-0.28:1.01]	[-0.88:0.95]	[-0.27:0.26]	[-0.66:0.18]
num. obs	245	245	245	245	245	218	263	225

OLS regression estimates. The outcomes are placebos that should not be affected by district magnitude (after accounting for district-specific effects). 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (1).

Table A9: Intermediate effect (I), adding controls + small provinces (Argentina only)

	# list seats	ENPS	*Party magnitude* median	mean	mean, wt.	largest
(a) Adding controls	(1)	(2)	(3)	(4)	(5)	(6)
Magnitude	0.07	-0.02	0.39	0.44	0.49	0.74
(pre-quota)	[-0.13:0.28]	[-0.18:0.14]	[0.26:0.53]	[0.30:0.59]	[0.38:0.60]	[0.60:0.89]
	[-0.17:0.32]	[-0.21:0.17]	[0.24:0.55]	[0.26:0.63]	[0.36:0.62]	[0.59:0.90]
Magnitude	0.13	0.06	0.37	0.41	0.45	0.65
(post-quota)	[-0.06:0.32]	[-0.08:0.20]	[0.23:0.52]	[0.28:0.54]	[0.37:0.53]	[0.53:0.78]
	[-0.08:0.33]	[-0.09:0.21]	[0.21:0.53]	[0.26:0.56]	[0.36:0.54]	[0.51:0.80]
num. obs	321	321	321	321	321	321

	Women in top list positions (%) *First*	*Second*	*First two*	*Third*	*First three*
Magnitude	0.43	-1.89	-0.73	-8.11	-2.05
	[-4.18:5.04]	[-8.39:4.62]	[-3.30:1.85]	[-13.77:-2.44]	[-3.71:-0.38]
	[-4.85:5.71]	[-9.30:5.53]	[-3.48:2.02]	[-15.21:-1.00]	[-4.46:0.37]
	Women in top list positions (%, weighted by vote shares)				
Magnitude	3.48	-7.77	-2.15	-7.31	-3.27
	[-1.95:8.90]	[-13.47:-2.07]	[-4.06:-0.23]	[-15.18:0.56]	[-5.91:-0.64]
	[-2.83:9.79]	[-13.81:-1.73]	[-4.38:0.09]	[-17.00:2.38]	[-7.55:1.00]
num. obs	228	228	228	168	168

(b) Small provinces (delegation size ≤ 5)	*# list seats*	ENPS	*Party magnitude* median	mean	mean, wt.	largest
Magnitude	0.21	0.04	0.37	0.37	0.41	0.79
(pre-quota)	[-0.04:0.47]	[-0.26:0.34]	[0.21:0.52]	[0.21:0.52]	[0.31:0.52]	[0.53:1.04]
	[-0.03:0.45]	[-0.23:0.32]	[0.22:0.52]	[0.22:0.52]	[0.31:0.52]	[0.55:1.03]
Magnitude	0.31	0.18	0.36	0.36	0.42	0.69
(post-quota)	[0.10:0.52]	[-0.04:0.40]	[0.16:0.57]	[0.16:0.57]	[0.29:0.55]	[0.48:0.90]
	[0.10:0.52]	[-0.05:0.40]	[0.13:0.60]	[0.14:0.58]	[0.28:0.57]	[0.49:0.90]
num. obs	168	168	168	168	168	168

	Women in top list positions (%) *First*	*Second*	*First two*	*Women in top list positions (%, wt.)* *First*	*Second*	*First two*
Magnitude	-0.48	-2.99	-1.73	3.43	-8.61	-2.59
	[-6.76:5.81]	[-10.81:4.83]	[-4.36:0.90]	[-6.35:13.20]	[-17.23:0.00]	[-4.53:-0.65]
	[-13.07:12.12]	[-11.30:5.32]	[-5.05:1.59]	[-6.05:12.90]	[-17.97:0.74]	[-4.58:-0.60]
num. obs	120	120	120	120	120	120

OLS regression estimates. Panel (a) replicates the specifications in Table 1a and c, but adding the following dummies plus all their possible interactions: concurrency with (a) presidential; (b) Senate; (c) gubernatorial; or (d) local legislative elections; whether the incumbent governor (e) was allowed to run for re-election at the end of her term, regardless of whether (s)he was actually running; (f) was actually running for reelection; or (g) appeared in the ballot in any way (i.e., as a candidate for the Senate). Panel (b) replicates the specifications in Table 1a and c but restricting the sample to the ten provinces with a delegation size of 5 or lower. All specifications include district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom.

Table A10: Women's position in lists ⇒ Mediators (Argentina, 1995-2017)

			Party magnitude			
	# list seats	**ENPS**	**median**	**mean**	**mean, wt.**	**largest**
	(1)	(2)	(3)	(4)	(5)	(6)
Women at the top of party lists						
Women first	0.14	0.19	-0.06	-0.02	0.04	-0.18
(%)	[-0.36:0.64]	[-0.31:0.70]	[-0.56:0.43]	[-0.47:0.42]	[-0.26:0.34]	[-0.68:0.32]
	[-0.41:0.69]	[-0.37:0.76]	[-0.58:0.46]	[-0.44:0.39]	[-0.25:0.33]	[-0.72:0.37]
Women in the second position of the party list						
Women second	-0.20	-0.15	0.33	0.28	0.02	0.10
(%)	[-0.68:0.29]	[-0.56:0.26]	[-0.18:0.85]	[-0.22:0.78]	[-0.26:0.30]	[-0.33:0.52]
	[-0.72:0.33]	[-0.54:0.24]	[-0.25:0.92]	[-0.26:0.82]	[-0.25:0.29]	[-0.34:0.54]
Women in the first two positions of party lists						
Women first two	-0.35	-0.12	0.94	0.84	0.14	-0.02
(%)	[-1.94:1.23]	[-1.43:1.20]	[-0.65:2.53]	[-0.67:2.36]	[-0.88:1.16]	[-1.43:1.38]
	[-2.33:1.62]	[-1.65:1.42]	[-1.13:3.01]	[-1.12:2.80]	[-0.96:1.24]	[-1.62:1.58]
Women at the top of party lists, weighted by vote shares						
Women first	-0.08	-0.02	0.28	0.24	0.08	0.02
(%, wt.)	[-0.42:0.26]	[-0.32:0.29]	[-0.14:0.70]	[-0.13:0.62]	[-0.16:0.31]	[-0.31:0.36]
	[-0.49:0.33]	[-0.36:0.33]	[-0.18:0.75]	[-0.20:0.69]	[-0.20:0.35]	[-0.34:0.38]
Women in the second position of the party list, weighted by vote shares						
Women second	-0.06	-0.05	0.09	0.03	-0.04	-0.05
(%, wt.)	[-0.38:0.25]	[-0.37:0.27]	[-0.23:0.41]	[-0.29:0.35]	[-0.30:0.22]	[-0.42:0.33]
	[-0.39:0.26]	[-0.38:0.28]	[-0.30:0.48]	[-0.33:0.39]	[-0.32:0.24]	[-0.43:0.34]
Women in the first two positions of party lists, weighted by vote shares						
Women first two	-0.47	-0.24	1.15	0.81	0.08	-0.10
(%, wt.)	[-1.66:0.73]	[-1.45:0.98]	[0.19:2.11]	[-0.30:1.92]	[-0.92:1.09]	[-1.66:1.46]
	[-1.89:0.96]	[-1.87:1.39]	[-0.13:2.43]	[-0.62:2.23]	[-1.24:1.41]	[-2.66:2.46]
num. obs	228	228	228	228	228	228

OLS regression estimates. Estimates and confidence intervals are multiplied by 100 for presentation purposes. Specifications replicate those from Table 1a, but replacing *Magnitude* with different measures of women's positions in party lists and adding magnitude fixed effects. All specifications include magnitude, district and year fixed effects. The sample is restricted to Argentina between 1995 and 2017. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom.

Table A11: Intermediate effect (IIa), adding controls + small provinces (Argentina only)

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
(a) Adding controls	(1)	(2)	(3)	(4)
Number of lists receiving seats				
# lists seats†	-9.95	-1.00	-30.18	-19.69
(pre-quota)	[-17.37:-2.52]	[-1.53:-0.46]	[-51.57:-8.79]	[-36.77:-2.61]
	[-19.56:-0.33]	[-1.66:-0.33]	[-57.84:-2.52]	[-40.43:1.05]
# lists seats†	-9.87	-0.35	-22.36	-6.34
(post-quota)	[-15.51:-4.23]	[-0.50:-0.19]	[-33.36:-11.37]	[-13.17:0.48]
	[-17.85:-1.89]	[-0.52:-0.18]	[-35.83:-8.90]	[-12.15:-0.53]
Party magnitude				
Party magnitude	4.27	-0.20	-0.01	-18.52
(median)‡	[-0.47:9.00]	[-0.48:0.08]	[-19.18:19.17]	[-35.34:-1.69]
(pre-quota)	[-0.06:8.59]	[-0.53:0.14]	[-21.82:21.81]	[-47.46:10.43]
Party magnitude	8.35	0.46	17.28	11.06
(median)‡	[3.65:13.05]	[0.32:0.59]	[7.14:27.41]	[1.39:20.74]
(post-quota)	[2.99:13.71]	[0.31:0.61]	[5.02:29.54]	[0.17:21.96]
num. obs	321	321	321	321
(b) Small provinces (delegation size ≤ 5)				
Number of lists receiving seats				
# lists seats†	-6.28	-0.30	-26.82	-1.47
(pre-quota)	[-20.77:8.20]	[-0.93:0.34]	[-60.57:6.93]	[-7.01:4.07]
	[-26.15:13.58]	[-2.16:1.57]	[-77.17:23.53]	[-8.06:5.12]
# lists seats†	-12.51	-0.33	-32.24	6.54
(post-quota)	[-23.13:-1.90]	[-0.57:-0.09]	[-51.49:-12.99]	[-6.58:19.66]
	[-24.67:-0.36]	[-0.61:-0.05]	[-52.02:-12.46]	[-11.87:24.95]
Party magnitude				
Party magnitude	0.70	-0.16	-20.29	-5.88
(median)‡	[-23.03:24.44]	[-0.64:0.32]	[-68.36:27.77]	[-16.29:4.52]
(pre-quota)	[-30.29:31.70]	[-0.77:0.45]	[-72.71:32.12]	[-19.27:7.50]
Party magnitude	9.42	0.37	27.28	-5.66
(median)‡	[0.11:18.72]	[0.15:0.60]	[10.08:44.48]	[-15.72:4.40]
(post-quota)	[-1.58:20.41]	[0.10:0.65]	[7.69:46.87]	[-17.83:6.51]
num. obs	168	168	168	168

OLS regression estimates. Panel (a) replicates the specifications in Table 3a, but adding the following dummies plus all their possible interactions: concurrency with (a) presidential; (b) Senate; (c) gubernatorial; or (d) local legislative elections; whether the incumbent governor (e) was allowed to run for re-election at the end of her term, regardless of whether (s)he was actually running; (f) was actually running for reelection; or (g) appeared in the ballot in any way (i.e., as a candidate for the Senate). Panel (b) replicates the specifications in Table 3a but restricting the sample to the ten provinces with a delegation size of 5 or lower. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) log(*# list seats*) in column (2). (‡) log(*party magnitude* (median)) in column (2). (§) We added 1 to the outcome before logging.

Table A12: Intermediate effect (IIb), adding controls + small provinces (Argentina only)

	Women elected (%)	*Women elected* (#) (log)‡	*Woman elected* (0/100)	*2+ Women elected* (0/100)
(a) Adding controls	(1)	(2)	(3)	(4)
Women at the top of party lists, weighted by vote shares				
Women first (%, wt.)†	0.37 [0.20:0.53] [0.17:0.56]	0.18 [0.10:0.26] [0.08:0.27]	0.42 [0.19:0.65] [0.17:0.68]	0.46 [0.22:0.70] [0.16:0.76]
Women in the second position of the party list, weighted by vote shares				
Women second (%, wt.)†	-0.17 [-0.32:-0.01] [-0.34:0.00]	-0.08 [-0.21:0.05] [-0.22:0.06]	-0.24 [-0.43:-0.04] [-0.46:-0.01]	-0.09 [-0.39:0.20] [-0.47:0.28]
Women in the first two positions of party lists, weighted by vote shares				
Women first two (%, wt.)†	0.49 [0.14:0.85] [0.09:0.89]	0.13 [-0.05:0.31] [-0.08:0.34]	0.40 [-0.17:0.97] [-0.33:1.12]	1.10 [0.26:1.94] [-0.10:2.29]
num. obs	228	228	228	228
(b) Small provinces (delegation size ≤ 5)				
Women at the top of party lists, weighted by vote shares				
Women first (%, wt.)†	0.39 [0.11:0.68] [0.00:0.78]	0.21 [0.07:0.35] [0.07:0.36]	0.54 [0.15:0.92] [0.09:0.98]	0.36 [0.09:0.64] [0.03:0.69]
Women in the second position of the party list, weighted by vote shares				
Women second (%, wt.)†	-0.28 [-0.50:-0.06] [-0.52:-0.04]	-0.20 [-0.38:-0.01] [-0.40:0.01]	-0.32 [-0.65:0.01] [-0.64:0.00]	-0.26 [-0.48:-0.03] [-0.54:0.02]
Women in the first two positions of party lists, weighted by vote shares				
Women first two (%, wt.)†	0.61 [-0.02:1.24] [-0.08:1.30]	0.18 [-0.14:0.50] [-0.18:0.53]	1.42 [-0.36:3.19] [-1.03:3.86]	0.58 [-0.27:1.44] [-0.36:1.52]
num. obs	120	120	120	120

OLS regression estimates. Panel (a) replicates the specifications in Table 4, but adding the following dummies plus all their possible interactions: concurrency with (a) presidential; (b) Senate; (c) gubernatorial; or (d) local legislative elections; whether the incumbent governor (e) was allowed to run for re-election at the end of her term, regardless of whether (s)he was actually running; (f) was actually running for reelection; or (g) appeared in the ballot in any way (i.e., as a candidate for the Senate). Panel (b) replicates the specifications in Table 4 but restricting the sample to the ten provinces with a delegation size of 5 or lower. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) Logged value of the (vote share-weighted) number of women in column (2). (‡) We added 1 to the outcome before logging.

Table A13: Intermediate effect (IIa), alternative mediators (Argentina only)

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
	(1)	(2)	(3)	(4)
(a) *Effective number of parties in seats*				
ENPS†	-7.30	-0.67	-20.45	-14.12
(pre-quota)	[-12.99:-1.62]	[-1.15:-0.19]	[-38.42:-2.48]	[-31.36:3.12]
	[-14.06:-0.54]	[-1.24:-0.10]	[-40.06:-0.84]	[-29.95:1.71]
ENPS†	-8.79	-0.27	-23.07	-1.47
(post-quota)	[-15.06:-2.52]	[-0.46:-0.09]	[-32.83:-13.30]	[-11.20:8.27]
	[-17.41:-0.17]	[-0.49:-0.06]	[-34.33:-11.81]	[-10.33:7.40]
(b) *Party magnitude* (mean)				
Party magnitude	4.08	-0.21	10.83	-17.33
(mean)†	[-0.71:8.87]	[-0.48:0.07]	[-15.59:37.25]	[-43.23:8.58]
(pre-quota)	[-0.02:8.17]	[-0.53:0.12]	[-47.47:69.12]	[-65.54:30.89]
Party magnitude	7.28	0.42	16.07	8.11
(mean)†	[2.75:11.81]	[0.27:0.58]	[8.12:24.03]	[-2.98:19.20]
(post-quota)	[2.19:12.37]	[0.25:0.60]	[7.59:24.56]	[-5.53:21.75]
(c) *Party magnitude* (mean, weighted by vote shares)				
Party magnitude	4.10	-0.17	14.15	-17.74
(mean, wt.)†	[-1.61:9.81]	[-0.43:0.09]	[-5.07:33.37]	[-39.60:4.13]
(pre-quota)	[-2.17:10.37]	[-0.42:0.08]	[-14.01:42.32]	[-55.39:19.92]
Party magnitude	6.04	0.34	18.43	4.74
(mean, wt.)†	[-0.72:12.79]	[0.14:0.55]	[6.25:30.61]	[-8.10:17.58]
(post-quota)	[-4.25:16.32]	[0.09:0.60]	[0.21:36.66]	[-9.03:18.52]
(d) *Party magnitude* (largest party)				
Party magnitude	3.95	-0.06	13.32	-10.33
(largest)†	[0.22:7.69]	[-0.25:0.12]	[3.72:22.92]	[-24.82:4.16]
(pre-quota)	[-0.52:8.43]	[-0.27:0.14]	[3.47:23.16]	[-34.29:13.63]
Party magnitude	5.16	0.41	16.02	0.86
(largest)†	[-0.24:10.55]	[0.23:0.58]	[4.52:27.52]	[-6.85:8.57]
(post-quota)	[-2.53:12.85]	[0.20:0.61]	[0.20:31.84]	[-5.83:7.55]
num. obs	321	321	321	321

OLS regression estimates. Specifications replicate those in Table 3a, but using alternative mediator variables. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) Logged value of the mediator in column (2). (‡) We added 1 to the outcome before logging.

Table A14: Intermediate effect (IIA), alternative mediators (Buenos Aires only)

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
	(1)	(2)	(3)	(4)
(a) *Effective number of parties in seats*				
ENPS†	-10.28	-0.80	-8.22	-22.79
(pre-quota)	[-20.19:-0.37]	[-1.15:-0.44]	[-45.52:29.09]	[-55.40:9.82]
	[-26.39:5.83]	[-1.39:-0.21]	[-63.92:47.49]	[-79.59:34.00]
ENPS†	-11.00	-0.42	-27.02	-4.46
(post-quota)	[-16.56:-5.44]	[-0.63:-0.21]	[-48.99:-5.05]	[-14.51:5.59]
	[-19.19:-2.81]	[-0.64:-0.20]	[-73.36:19.31]	[-13.27:4.35]
(b) *Party magnitude* (mean)				
Party magnitude	1.14	-0.08	5.63	-4.91
(mean)†	[-0.98:3.25]	[-0.29:0.13]	[-3.76:15.02]	[-13.89:4.06]
(pre-quota)	[-1.71:3.98]	[-0.31:0.14]	[-2.72:13.97]	[-13.75:3.92]
Party magnitude	3.33	0.57	5.02	4.58
(mean)†	[-0.18:6.84]	[0.30:0.85]	[-5.32:15.36]	[-3.45:12.61]
(post-quota)	[-3.55:10.21]	[0.08:1.07]	[-13.77:23.82]	[-7.01:16.17]
(c) *Party magnitude* (mean, weighted by vote shares)				
Party magnitude	3.70	0.35	4.72	3.50
(mean, wt.)†	[-0.80:8.20]	[0.01:0.69]	[-10.82:20.26]	[-5.76:12.76]
(pre-quota)	[-0.62:8.03]	[-0.03:0.73]	[-11.10:20.54]	[-5.39:12.40]
Party magnitude	5.24	0.76	1.33	9.69
(mean, wt.)†	[-0.59:11.07]	[0.40:1.11]	[-16.90:19.57]	[-7.23:26.60]
(post-quota)	[-1.64:12.12]	[0.21:1.31]	[-22.44:25.11]	[-14.04:33.41]
(d) *Party magnitude* (largest party)				
Party magnitude	2.12	0.15	8.08	-0.92
(largest)†	[-0.71:4.94]	[-0.20:0.49]	[-4.82:20.97]	[-9.07:7.23]
(pre-quota)	[-1.66:5.89]	[-0.42:0.71]	[-11.23:27.38]	[-16.45:14.61]
Party magnitude	3.18	0.63	5.47	3.06
(largest)†	[-0.45:6.81]	[0.32:0.95]	[-8.60:19.55]	[-4.33:10.45]
(post-quota)	[-2.44:8.79]	[0.09:1.18]	[-19.32:30.26]	[-6.23:12.35]
num. obs	128	128	128	128

OLS regression estimates. Specifications replicate those in Table 3b, but using alternative mediator variables. All specifications include magnitude, district and year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) Logged value of the mediator in column (2). (‡) We added 1 to the outcome before logging.

Table A15: Out-of-sample results: Excluding Argentina

(a) Overall	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
effect	(1)	(2)	(3)	(4)
Magnitude†	-0.05	0.28	0.87	3.59
(pre-quota)	[-0.74:0.63]	[0.07:0.50]	[-1.86:3.59]	[0.38:6.81]
	[-0.71:0.60]	[0.04:0.53]	[-3.09:4.83]	[-3.84:11.03]
Magnitude†	0.05	0.47	0.07	3.86
(post-quota)	[-0.66:0.76]	[0.25:0.69]	[-2.98:3.13]	[0.03:7.68]
	[-0.63:0.73]	[0.23:0.71]	[-4.51:4.66]	[-3.42:11.13]

(b) Intermediate effect (I): District magnitude ⇒ Mediators

	# list seats	**ENPS**	***Party magnitude* median**	**mean**	**largest**
Magnitude	0.31	0.19	0.05	0.07	0.20
(pre-quota)	[0.17:0.45]	[0.08:0.29]	[-0.02:0.13]	[-0.03:0.17]	[0.03:0.37]
	[0.03:0.58]	[0.01:0.36]	[-0.03:0.13]	[-0.19:0.33]	[-0.08:0.48]
Magnitude	0.35	0.18	-0.10	-0.03	0.20
(post-quota)	[0.20:0.50]	[0.07:0.29]	[-0.22:0.01]	[-0.16:0.10]	[0.01:0.38]
	[0.04:0.66]	[-0.01:0.38]	[-0.31:0.10]	[-0.43:0.37]	[-0.16:0.55]

(c) Intermediate effect (II): Mediators and female representation

Number of lists receiving seats	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
# lists seats†	-3.05	-0.26	-6.79	-6.30
(pre-quota)	[-5.20:-0.90]	[-0.44:-0.09]	[-12.17:-1.41]	[-10.55:-2.05]
	[-5.45:-0.65]	[-0.45:-0.08]	[-12.02:-1.57]	[-10.77:-1.83]
# lists seats†	-0.57	0.03	-0.65	-0.36
(post-quota)	[-3.09:1.96]	[-0.15:0.22]	[-5.94:4.64]	[-7.61:6.88]
	[-3.23:2.10]	[-0.18:0.24]	[-6.12:4.81]	[-7.74:7.01]
Party magnitude (median)				
Party magnitude	0.75	0.09	2.53	1.61
(median)†	[-0.63:2.12]	[-0.06:0.23]	[-0.69:5.75]	[-0.95:4.17]
(pre-quota)	[-0.87:2.37]	[-0.08:0.25]	[-0.29:5.36]	[-1.38:4.61]
Party magnitude	0.58	0.06	1.19	1.23
(median)†	[-0.28:1.44]	[-0.07:0.18]	[-0.73:3.11]	[-0.95:3.42]
(post-quota)	[-0.15:1.31]	[-0.09:0.20]	[-0.52:2.90]	[-0.54:3.01]
num. obs	594	594	594	594	594

OLS regression estimates. Specifications report those in Table 5, but excluding all observations from Argentina. All specifications include district and country-year fixed effects. Specifications in panel (c) also include magnitude district effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (2). (‡) We added 1 to the outcome before logging.

Table A16: Out-of-sample results: Counting strong quotas only

(a) Overall	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
effect	(1)	(2)	(3)	(4)
Magnitude†	-0.04	0.29	0.72	3.64
(pre-quota)	[-0.73:0.66]	[0.07:0.51]	[-2.09:3.52]	[0.36:6.92]
	[-0.77:0.70]	[0.05:0.53]	[-3.36:4.80]	[-3.95:11.23]
Magnitude†	0.46	0.91	-0.20	4.99
(post-quota)	[-0.31:1.23]	[0.67:1.15]	[-3.17:2.78]	[1.43:8.54]
	[-0.33:1.26]	[0.65:1.17]	[-4.14:3.74]	[-1.46:11.44]

(b) Intermediate effect (I): District magnitude ⇒ Mediators

	# list seats	**ENPS**	***Party magnitude* median**	**mean**	**largest**
Magnitude	0.31	0.19	0.02	0.05	0.20
(pre-quota)	[0.18:0.44]	[0.08:0.29]	[-0.04:0.09]	[-0.02:0.13]	[0.03:0.37]
	[0.05:0.58]	[0.01:0.36]	[-0.05:0.10]	[-0.13:0.24]	[-0.07:0.47]
Magnitude	0.32	0.19	0.01	0.06	0.19
(post-quota)	[0.18:0.45]	[0.09:0.30]	[-0.05:0.08]	[-0.02:0.14]	[0.01:0.36]
	[0.06:0.57]	[0.02:0.37]	[-0.07:0.09]	[-0.10:0.22]	[-0.08:0.45]

(c) Intermediate effect (II): Mediators and female representation

Number of lists receiving seats	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**	
# lists seats†	-1.99	-0.19	-3.98	-3.07	
(pre-quota)	[-3.85:-0.12]	[-0.40:0.02]	[-8.70:0.74]	[-7.83:1.70]	
	[-3.87:-0.10]	[-0.45:0.06]	[-8.74:0.79]	[-7.92:1.79]	
# lists seats†	-0.93	0.18	-5.17	-2.14	
(post-quota)	[-3.29:1.43]	[-0.08:0.43]	[-9.73:-0.61]	[-12.58:8.30]	
	[-3.42:1.56]	[-0.20:0.55]	[-11.58:1.23]	[-15.06:10.78]	
Party magnitude (median)					
Party magnitude	-0.07	-0.05	1.78	0.36	
(median)†	[-1.05:0.90]	[-0.19:0.10]	[-0.29:3.85]	[-1.88:2.59]	
(pre-quota)	[-1.08:0.93]	[-0.21:0.12]	[0.11:3.45]	[-1.31:2.02]	
Party magnitude	1.26	0.36	0.08	4.46	
(median)†	[0.31:2.21]	[0.22:0.50]	[-2.55:2.70]	[1.01:7.91]	
(post-quota)	[-0.22:2.74]	[0.16:0.57]	[-4.18:4.34]	[-1.83:10.75]	
num. obs	679	679	679	679	679

OLS regression estimates. Specifications report those in Table 5, but only counting "strong" quotas, meaning that at least 30% of candidates in general elections must be women, there are placement mandates, and quotas are effectively enforced. All specifications include district and country-year fixed effects. Specifications in panel (c) also include magnitude district effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (2). (‡) We added 1 to the outcome before logging.

Table A17: Out-of-sample results: Small-magnitude districts ($M \leq 5$) only

(a) Overall	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
effect	(1)	(2)	(3)	(4)
Magnitude†	-2.14	0.08	2.55	1.72
(pre-quota)	[-8.19:3.90]	[-0.06:0.23]	[-11.57:16.67]	[-2.67:6.11]
	[-8.79:4.50]	[-0.06:0.23]	[-14.85:19.95]	[-3.18:6.61]
Magnitude†	2.44	0.46	20.14	11.13
(post-quota)	[-4.05:8.93]	[0.14:0.78]	[4.75:35.53]	[2.72:19.55]
	[-4.34:9.22]	[0.05:0.87]	[2.28:38.00]	[-1.11:23.38]

(b) Intermediate effect (I): District magnitude ⇒ Mediators

	# list seats	**ENPS**	***Party magnitude* median**	**mean**	**largest**
Magnitude	0.46	0.40	0.21	0.18	0.32
(pre-quota)	[0.31:0.62]	[0.25:0.55]	[0.08:0.33]	[0.10:0.27]	[0.21:0.43]
	[0.27:0.66]	[0.21:0.58]	[0.07:0.34]	[0.08:0.29]	[0.20:0.44]
Magnitude	0.51	0.41	0.14	0.12	0.32
(post-quota)	[0.28:0.75]	[0.20:0.63]	[-0.07:0.35]	[-0.02:0.26]	[0.14:0.49]
	[0.19:0.84]	[0.13:0.70]	[-0.17:0.45]	[-0.08:0.31]	[0.10:0.53]

(c) Intermediate effect (II): Mediators and female representation

Number of lists receiving seats	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**	
# lists seats†	-3.51	-0.16	-9.14	-2.22	
(pre-quota)	[-8.30:1.28]	[-0.35:0.03]	[-21.14:2.87]	[-5.63:1.20]	
	[-9.09:2.07]	[-0.37:0.05]	[-22.34:4.06]	[-5.53:1.10]	
# lists seats†	-4.71	-0.16	-5.06	-9.21	
(post-quota)	[-8.40:-1.03]	[-0.31:-0.01]	[-14.48:4.36]	[-15.77:-2.65]	
	[-8.82:-0.61]	[-0.33:0.01]	[-16.90:6.79]	[-15.74:-2.67]	
Party magnitude (median)					
Party magnitude	1.99	0.05	2.44	-0.94	
(median)†	[-3.69:7.66]	[-0.11:0.22]	[-11.94:16.83]	[-6.38:4.51]	
(pre-quota)	[-4.34:8.32]	[-0.13:0.23]	[-12.25:17.14]	[-6.00:4.13]	
Party magnitude	6.59	0.22	11.84	14.10	
(median)†	[2.43:10.74]	[0.10:0.34]	[3.91:19.76]	[5.07:23.14]	
(post-quota)	[2.35:10.82]	[0.08:0.36]	[2.93:20.74]	[4.27:23.94]	
num. obs	487	487	487	487	487

OLS regression estimates. Specifications report those in Table 5, but restricting the sample to districts with a magnitude of 5 or less. All specifications include district and country-year fixed effects. Specifications in panel (c) also include magnitude district effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (2). (‡) We added 1 to the outcome before logging.

Table A18: Out-of-sample results: Alternative mediators

	***Women elected* (%)**	***Women elected* (#) (log)‡**	***Woman elected* (0/100)**	***2+ Women elected* (0/100)**
ENPS	(1)	(2)	(3)	(4)
ENPS†	-2.99	-0.26	-6.93	-4.85
(pre-quota)	[-5.28:-0.70]	[-0.43:-0.09]	[-12.21:-1.65]	[-9.10:-0.60]
	[-5.44:-0.54]	[-0.44:-0.07]	[-12.09:-1.77]	[-9.10:-0.60]
ENPS†	-1.29	0.07	-3.04	-0.13
(post-quota)	[-4.00:1.43]	[-0.10:0.24]	[-8.88:2.79]	[-9.74:9.47]
	[-4.21:1.63]	[-0.11:0.24]	[-8.35:2.27]	[-11.80:11.54]
Party magnitude (mean)				
Party magnitude	0.14	-0.03	3.66	-0.69
(mean)†	[-1.40:1.67]	[-0.22:0.16]	[0.24:7.08]	[-5.06:3.69]
(pre-quota)	[-1.29:1.56]	[-0.24:0.18]	[0.20:7.11]	[-4.76:3.38]
Party magnitude	1.27	0.30	1.53	2.53
(mean)†	[0.30:2.25]	[0.10:0.49]	[-1.03:4.08]	[-0.88:5.93]
(post-quota)	[0.31:2.23]	[0.04:0.56]	[-1.30:4.36]	[-0.98:6.03]
Party magnitude (largest party)				
Party magnitude	1.23	0.03	5.79	-0.17
(largest)†	[-0.10:2.56]	[-0.12:0.17]	[2.67:8.92]	[-3.45:3.11]
(pre-quota)	[-0.24:2.71]	[-0.13:0.19]	[2.77:8.82]	[-3.28:2.94]
Party magnitude	1.85	0.32	4.37	1.37
(largest)†	[0.63:3.06]	[0.16:0.47]	[1.43:7.31]	[-1.69:4.43]
(post-quota)	[0.52:3.17]	[0.13:0.51]	[1.49:7.24]	[-1.79:4.53]
num. obs	679	679	679	679

OLS regression estimates. Specifications report those in Table 5c, but for a set of alternative mediators. All specifications include magnitude, district and country-year fixed effects. 95% CIs based on standard errors clustered by district and adjusted by the number of clusters are reported at the top; wild bootstrapped CIs are reported at the bottom. (†) logged value in column (2). (‡) We added 1 to the outcome before logging.

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