

# The Representational Consequences of Electronic Voting Reform: Evidence from Argentina

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Cambridge Elements in Campaigns and Elections

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**Abstract.** Ballots and voting devices are fundamental tools in the electoral process. Despite their importance, scholars have paid little attention to the broader implications of voting procedures. We contend that ballots have significant implications for democratic representation, as they affect the cost associated with voting for citizens and electioneering for elites. In this book, we explain how ballot designs affect the behavior of voters, the performance of candidates, and the strategies of parties. As for voters, we show how voting procedures structure the likelihood of vote splitting and ballot roll-off. This in turn has implications for candidates. Focusing on gender and experience, we show how ballot form alters the salience of personal vote earning attributes. With respect to political parties, ballot structure can shift both the cost, strategies, and ultimately electoral fortunes of political parties. Finally, we discuss the profound implications ballot forms have for party campaigns and election outcomes.

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We presented the very first poster of this research about 10 years ago. The main ideas in that poster ended up being an article published in *The Journal of Politics* examining the effects of the ballot design on split-ticket voting. Later on, we continued working on other aspects of election also shaped by voting procedures, presenting this research in conferences and workshops. Two years ago, we thought that putting all the empirical findings in a book was the best way to present a comprehensive perspective of the outcomes of an electoral reform.

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# Chapter 1

## Introduction

Democracy rests on the idea that the government should reflect the will of the people. In practice, however, democratic institutions vary dramatically in their representativeness. Whereas some institutions are designed to represent a diversity of interests, forcing parties to share power, other institutions manufacture majorities, prioritizing effective government over representation (Lijphart 2012; Moser et al. 2018). Thus, as a result of institutional design, groups face varying levels of access and inclusion. Copious research seeks to understand the trade-offs in electoral institutions and how different electoral rules and procedures can increase the representation of different groups in society, ranging from small political parties, to women and ethnic minorities.

Ballots and voting devices, in particular, are fundamental tools in the electoral process (Barnes, Tchintian, and Alles 2017; Calvo et al. 2009; Engstrom and Roberts 2020; Katz et al. 2011). The voting instrument connects competing candidates and parties with voters. Notably, there is substantial variation in the design of ballots and voting devices used around the democratic world (Claus and Valdini 2014; Reynolds and Steenbergen 2006; Herrnson et al. 2008). Ballots differ in how candidates and parties are displayed, either organized along party or office lines. Ballots differ in how voters must indicate their choices, for example marking a box, punching a card, or manually tearing the ballot. Ballots differ in the use of photographs of candidates and party logos. Ballots involve different transmission devices, ranging from paper alone to electronic machines. In brief, even in cases when all other electoral rules remain the same, voting procedures vary across countries, within countries, and over time.

Despite the importance of ballots and associated voting procedures, scholars have paid little attention to the ways that these features of elections shape representation. Indeed, although many scholars have investigated the adoption of e-voting, most have done so with an eye towards the implications of electronic voting for election integrity (e.g., Alvarez et al. 2013; Alvarez et al. 2018; Beaulieu 2014, 2016). In this study we argue there can be important representational consequences associated with the adoption of e-voting and the way the electoral offer is presented on the ballot. Our research contends that any changes to the ballot may have significant implications for democratic representation, as they affect the cost associated with voting for citizens and electioneering for elites. The precise consequences of a reform will, of course, depend on the procedure that was previously in place as well as the way the new voting instrument interacts with the other electoral rules in place. In this book, we leverage an e-voting reform that resulted in some modifications to the existing ballot to demonstrate how ballot designs affect the behavior of voters, the performance of candidates, and the strategies of parties.

### **Ballot Design and Representational Consequences: Voters, Candidates, and Parties**

It is well established that ballot designs have important consequences for what happens in the voting booth (Rusk 1970; Barnes, Tchintian, and Alles 2017; Engstrom and Roberts 2020; Muraoka 2021; Tchintian 2018). In this book, we take the voting booth as a starting point,

assessing the consequences of ballot design on voter's behavior at the polls. After that, we consider the representational ramifications of these behavioral changes, looking into the broader implications of the ballot design for the entire electoral process.

To begin, in thinking about voters, voting demands time and effort. The manner in which the electoral offer is presented to the voter and the process through which votes are cast structure the way voters' preferences are translated into outcomes.

In particular, more complicated processes may discourage some citizens from fully expressing their preferences at the polls. Consider, for instance, the case of partisan paper ballots—a ballot that requires voters to physically tear a piece of paper in order to split their vote. For a voter who prefers to vote for candidates from different parties in different contests at stake (i.e., split-ticket voting), this ballot is more demanding than one that simply requires voters to check a box associated with each candidate in each race. Whereas the former is likely to encourage straight-ticket voting, the latter is likely to facilitate a larger share of split-ticket voting.

The same ballot that encourages split-ticket voting also discourages roll-off (i.e., when voters cast a valid vote for candidates at the top of the ballot but not for candidates further down the ballot). For example, some ballot structures automatically re-engage voters in the voting process each time they split their ballot by presenting them with the slate of candidates for subsequent contests on successive screens. This structure makes it easy for voters to vote in subsequent contests, even if they choose to split their ballot. This is because the ballot requires voters to actively choose an option, either to vote for a candidate or to vote blank, rather than simply allowing them to discard the bottom portion of the ballot after tearing the ballot in two. For this reason, ballots that require, or even facilitate, voters to make a decision for every contest at stake, decrease the likelihood of roll-off.

Voters' behavior subsequently informs parties and candidates strategic electioneering decisions. With respect to individual candidates, a ballot form that facilitates split-ticket voting undermines the strength of the coattails at the top of the ticket. Since voters are somewhat more likely to make separate choices about each contest at stake, personal vote earning attributes or other information cues may be more salient for down-ballot candidates than in contexts that facilitate straight-ticket voting. The added emphasis on personal vote earning attributes in down-ballot races may ultimately strengthen candidates' incentives to cultivate a personal reputation.

As for parties, when voters are making discrete choices for each race, the opportunities to center their campaigns around specific down-ballot races grow significantly. Small parties that are not viable in executive races such as presidential or gubernatorial elections may focus their efforts on campaigning for their legislative candidates. Moreover, when electoral rules require individual political parties (or even candidates) to procure and distribute their own ballots to polling stations, parties are incentivized to concentrate their campaign resources in geographical areas where they will get a larger electoral pay-off. Smaller parties, for example, may forgo distributing ballots across the entire district—as doing so is costly—and instead concentrate exclusively on areas where they can count on local networks to fill in logistic campaign roles. But, if the election authority is responsible for printing and distributing ballots across the entire territory, then smaller political parties will face lower constraints when planning where to campaign. Consequently, we would expect to observe a more homogeneous geographical distribution of votes when the electoral authority guarantees the provision of ballots at every voting booth, than under electoral rules where individual parties are responsible for filling in that role.

Overall, the ballot form shapes the effort, information, and attention that voters need to translate their preferences into votes and the resources that candidates and parties have to invest in order to reach voters.

## Exploiting an Incremental Ballot Reform: A Quasi-Experiment

To investigate the representational consequences of ballot design, this book takes advantage of a ballot reform in Argentina, in which e-voting was incrementally implemented. We exploit observational data from seven consecutive election cycles, over a twelve-year period when a province in Argentina switched from partisan paper ballots to electronically administered Australian ballots.<sup>1</sup> In Chapter 2, we describe the procedures for voting using the partisan paper ballots compared to the procedure for voting using the new, electronically administered ballot, and explain how the ballot reform was implemented across the province. To examine the ballot effects on voters, candidates, and parties, we develop two main identification strategies in the subsequent chapters.

First, in Chapter 3, to test our expectations about voters, we employ a quasi-experimental design, leveraging the simultaneous use of the two voting procedures—the traditional partisan paper ballots in some precincts compared to the electronically administered Australian ballots in other precincts—to examine how the ballot form affects individual choices, such as split-ticket voting and ballot roll-off. We use matching techniques to address threats to random assignment and a difference-in-difference approach to estimate the ballot effect. This same strategy is used to test the ballot effect on electoral coordination in Chapter 6 and is used to provide supplementary evidence in Chapter 4 regarding the ballot effect on incumbency advantage.

Second, we employ cross-sectional statistical analyses to examine how the ballot form affects the performance of candidates and the strategies of parties. In Chapter 4, we examine municipality-level data from about 1,200 mayoral candidates between 2007 and 2019, to assess the effects of the ballot form on the performance of incumbent and women candidates. Finally, turning to the ballot implications for parties, in Chapter 5 we rely on department-level data from about 950 province House and Senate party lists between 2009 and 2019.

## The Importance of Studying Ballot Structure

This book contributes to a growing body of research investigating the effects of ballot forms and voting procedures on elections and representation. Ballots differ in terms of the cognitive and physical demands they place on voters to cast their vote. And there is evidence that variation in ballot features affect voters' behavior. Critical features range from the length of the ballot (Wattenberg et al. 2000; Walker 1966; Darcy and Schneider 1989; Aguilar et al. 2015) and the order and placement of parties and candidates (Ho and Imai 2008; Miller and Krosnick 1998;

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<sup>1</sup> Throughout the book, we use the terms partisan paper ballots, paper ballots and the ballot-and-envelope system interchangeably. When referencing this ballot reform in Argentina, we use the terms electronic ballot, and e-voting interchangeably. A detailed description of the adopted procedure is provided in: **Tribunal Electoral de la Provincia de Salta**. 2019. "Manual de Capacitación para Autoridades de Mesa. Sistema de Boleta Única Electrónica," available at: <http://www.electoralSalta.gob.ar/informacion/2019/manual-de-capacitacion-2019.pdf> (accessed April 15, 2022).



Villodres 2008; Söderlund et al. 2021; Casas et al. 2020), to the inclusion of informational cues such as pictures, images, and party symbols (Laskowski and Redish 2006; Kimball and Kropf 2005; Banducci et al. 2008; Lau and Redlawsk 2006; Conroy-Krutz et al. 2015; Moehler and Conroy-Krutz 2016; Tchintian 2018).

One of the most well-tread ballot design questions addressed by political science is whether the ballot form affects how voters translate their preferences into votes. Though voters may prefer to split the ticket for a variety of reasons, such as producing partisan balance (Burden and Helmke 2009) or voting strategically to avoid wasting their vote (Cox 1997; Moser and Scheiner 2009), the actual decision to split the ballot is conditioned by the ballot design (Barnes, Tchintian, and Alles 2017; Tchintian 2018; Darcy and Schneider 1989; Walker 1966; Campbell et al. 1960).

Complicated ballots may also result in the omission of voter's preferences. In the case of Japan, for instance, voters are required to write candidates' names on a blank ballot. Muraoka (2021) demonstrates that voters may forgo voting for their most preferred candidate when the candidate's name is sufficiently complex, and instead opt for an easier name to write. Along similar lines, some ballot structures may cause confusion and frustration for voters, ultimately increasing the number of mistaken, invalid, and/or unrecorded votes (Herrnson et al. 2012; Pachón et al. 2017; Kimball and Kropf 2005; Ansolabehere and Stewart 2005; Hammer et al. 2010; Power and Garand 2007; Niemi and Herrnson 2003; Sievert 2020).

Importantly, such errors might not be randomly distributed. Instead, they may be biased against particular groups of voters such as ethnic minorities and the less educated (Tomz and Van Houweling 2003; Knack and Kropf 2003; Engstrom and Roberts 2020). Complicated ballots may even deter voters from turning out when voting is not mandatory, as is the case with the elimination of straight-ticket voting in the U.S. (Engstrom 2012; Card and Moretti 2007).

## **Candidates and Parties**

While some scholars have considered how ballot designs and election administration shape what happens in the voting booth (e.g., split-ticket voting, roll-off, unintentional under/over vote), far less research attempts to understand how ballot features affect behavior beyond the polls. This is one of the main contributions of this Element: to move beyond the voting booth. In doing so, we build on recent studies that advance our considerations of how ballot types shape representational outcomes more broadly. To understand where our study fits in, it is important to first review what we know about the relationship between ballot features and candidates' and parties' behavior.

With respect to candidates in particular, ballots affect the extent and importance of either cultivating the personal vote or relying on the relevance of the party machinery to advance one's electoral fortunes (Roberts 2008). By the same token, ballot structures can strengthen (or weaken) the electoral connection and legislative responsiveness of representatives once in office (Katz and Sala 1996; Engstrom and Kernell 2005; Wittrock et al. 2008; Roberts 2009). Research by Engstrom and Roberts (2020), for instance, considers how the ballot type shapes legislative behavior, by affecting which candidates succeed at the polls. They argue that ballots that are organized by the office at stake, rather than by political party, heightens the importance of candidates' name recognition. Name recognition is so much stronger for candidates competing under office-centered ballots that they "scare off" challengers. This, in turn, has a host of implications for how legislators behave once in office. Indeed, they demonstrate that the

U.S. Members of Congress who depend more on name recognition to get into office spend more time cultivating their own personal reputation—sponsoring more legislation, exercising more discretion when siding with the president, and being more effective legislators.

Tchintian (2018) similarly shows how ballot design alters the significance of personal attributes in elections. Using survey and observational data from El Salvador and Ecuador, she examines whether candidates' personal attributes in their ballot pictures affect the probability of being elected. She finds that personal attributes are important, but the weight of these factors varies depending on ballot design features. The fates of candidates featured on longer or more crowded ballots are more closely tied to the attributes conveyed by their ballot image, especially those candidates at the bottom of the ticket. Importantly, in a separate study, Tchintian shows how the emphasis on personal vote earning attributes during elections influences legislators' behavior once in office. Taking advantage of a ballot reform in Brazil, she shows that when legislators' pictures are featured on the ballots, candidates respond by breaking with party ranks more frequently—voting independent of their party in an effort to make a name for themselves. Herein we extend this logic to consider how other personal vote earning attributes, in our case gender, shape candidates' success at the polls.

From the parties' perspective, different voting procedures vary in terms of the effort demanded by elites to maximize their electoral results and thus, determine parties' campaign strategies and performance (Alles et al. 2021). For example, previous research has shown that ballots shape the incentives of parties to mobilize voters on election day (Heckelman 2000; Schaffner et al. 2001). Although scholars have paid less attention to the implication of ballot reform on parties' behavior, there are some notable examples.

In Colombia, for instance, partisan paper ballots were replaced by Australian ballots in the early 1990s. Whereas prior to the Australian ballot not every candidate or every party was able to coordinate and finance the distribution of their ballot, the adoption of the Australian ballot guaranteed that every party and every candidate was present at the ballot box everywhere, regardless of their campaign resources. Parties, and most especially the smaller ones, took advantage of the newfound universal distribution of ballots by extending the geographical coverage of their campaigns, appealing to new electoral audiences and reshaping their bases. Moreover, the transformation of campaigning strategies undermined the territorial machines of traditional parties. Local leaders, who used to control well-organized mobilization networks, now faced the rise of new competitors in their electoral strongholds (Alles et al. 2021).

The adoption of the secret ballot in the U.S. likewise changed parties' strategies (Heckelman 2000). As party bosses could no longer verify how constituents voted with the advent of the secret ballot, they were dissuaded from buying and selling votes—ultimately forcing parties to rely on different strategies to cultivate voters' support. Along these same lines, some ballot features make it more difficult to turn out voters. In the US, for instance, the abolition of straight-ticket voting in some state elections made voting more costly for voters who preferred to cast their ballot for candidates from the same party for all contests at stake (Engstrom and Roberts 2020). Absent a straight-ticket voting option, it takes individual voters more time to fill out their ballot, and the extra time individuals spend at the ballot box accumulates in longer lines at the polls, discouraging voters from turning out. And, as African-American voters are a key stronghold of the Democratic Party, Engstrom and Roberts find that African-American neighborhoods were more likely to be inflicted with longer lines and subsequently lower turnout. The suppression of African-American voters, no doubt, has implications for how the Democratic party mobilizes and campaigns to this key constituency.

## **Ballot Design in Comparative Perspective**

Ballot structures vary dramatically across and within countries, and yet comparative politics scholars have rarely considered how ballot types influence the way voters translate their preferences into votes and how elites react with different strategies to different ballot structures. There are, of course, notable exceptions to this. As mentioned above, Tchintian (2018) considers a number of cases across Latin America including El Salvador and Honduras. Alles and his coauthors (2021) likewise provide an extensive treatment to the ballot reform in Colombia. And, Muraoka (2012), illustrates the unintended implications of ballot design in Japan.

Notably, electronic voting reform has received considerable attention in a cross-national setting. Electronic voting devices have been adopted in the last 20 years in an attempt to improve electoral processes by offering more user-friendly procedures for voters, bolstering confidence in elections and automatizing vote tallying (Beaulieu 2014, 2016; Alvarez and Hall 2008; Alvarez et al. 2009; 2011; Tula 2005; Tchintian 2018). The adoption of electronic voting in Salta, Argentina, along with a handful of reforms in other provinces throughout Argentina, has gained notable attention (Pomares, Levin, Alvarez 2014; Barnes, Tchintian, and Alles 2017; Dodyk and Nicolini 2017). In each of these cases, electoral institutions were held constant and only the ballot form was changed.

Though scholars have recently started to think about the broader representational consequences of voting procedures and extending this work beyond the U.S. (Alles et al. 2021; Barnes, Tchintian, and Alles 2017; Katz et al. 2011; Calvo et al. 2009), we contend that more attention is needed to understand the ways that seemingly small adjustments to the ballot structure have the propensity to affect the entire political process, from campaigns to voting, which has implications for policy representation (Engstrom and Roberts 2020). This book extends this body of research, offering one of the first comprehensive studies of the consequences of ballot structure for voters, candidates, and parties beyond the U.S.

## **The Critical Impact of the Ballot**

The findings in this Element indicate that the ballot structure influences voters, candidates, and parties. With respect to voters, the change from partisan paper ballots to an electronically administered Australian ballot has significantly increased the share of split-ticket voting, resulting in a composition of the legislative assembly that is more independent from the results of the executive race. At the same time, the electronic devices are linked to a substantial reduction of ballot roll-off: a larger number of voters engaged in down-ballot races as compared to elections using the paper ballots, invigorating the democratic legitimacy of elected local officials.

As for individual candidates, electronic devices have heterogeneous effects on candidates competing in down-ballot races. Whereas the ballot form exerts only a weak influence over the electoral fates of women (as compared to men) mayoral candidates, incumbent candidates enjoy a significant bonus in elections using electronic devices. Incumbent mayors standing for reelection, already natural front-runners in the competition, are uniquely positioned to exploit the increased salience of the personal vote afforded by the electronic Australian ballot.

Finally, as for political parties, we focus on two phenomena. First, different ballot forms involve different logistical burdens that affect the strategic response of parties. When parties are

responsible for the provision of ballots to each voting center, some small parties without the resources to distribute ballots to all voting centers choose to concentrate their efforts in a limited area. This results in a geographically concentrated distribution of votes for their party. Under the electronically administered Australian ballot parties are no longer responsible for the provision of ballots. Instead, it guarantees that all party options are available in every voting booth. For this reason, small political parties with fewer resources can expand the geographical reach of their campaign, resulting in a more homogeneous geographical distribution of votes.

Second, our findings show that parties adapt their campaign strategies to take advantage of the opportunities created by the ballot structure. Because the electronic devices eased vote splitting, the legislative election became more independent from the gubernatorial race. Some parties (though not all) were able to exploit this environment, encouraging voters to split their ballots, and attract a significant portion of new disposable votes to the legislative portion of their ticket. This facilitates the election of small parties to the legislature.

The remainder of the Element is organized as follows. Chapter 2 introduces the ballot reform under study and examines the treatment assigned voting machines to different precincts. Chapter 3 examines how e-voting reform influences voters' behavior, specifically how it conditions the likelihood of vote splitting and ballot roll-off. Then, Chapter 4 turns to the implications of reform for candidates competing in elections. Focusing on two candidate attributes, experience and gender, we show how the new ballot form alters the salience of personal vote earning attributes. Chapters 5 and 6 analyze the influence of e-voting reform on political parties, considering its impact on parties' electioneering efforts throughout the territory and evaluating how parties are differentially affected by the strategic coordination of voters. The final chapter concludes, discussing the implications of our book for research on electoral institutions and reform.

## Chapter 2

# Electronic Voting in Salta: From Adoption to Implementation

Voting instruments have experienced significant transformations over time. In Latin America, the first era of ballot reforms was centered on the adoption of secret balloting (Hartlyn and Valenzuela 1995). Argentina and Uruguay established secret balloting in the 1910s, followed by Chile and Costa Rica a few years later. Despite periodic elections, democratic institutions, with few exceptions, did not consolidate until the 1980s, when a wave of democratization swept throughout the entire region for the first time (Hagopian and Mainwaring 2005). In this context of democratic transitions a more careful design of electoral institutions came to be seen as a tool to foster stable democracies. Recent decades have witnessed reforms in voting procedures in numerous countries around the world seeking to make elections more efficient and reliable, and in this respect Latin American democracies have presented an active laboratory of innovation (Reynolds and Steenbergen 2006).

Historically, two types of ballot forms were widely used in the region. The first ballot type is the partisan paper ballot—which was also common in the United States in the nineteenth century (Engstrom and Kernell 2014). As Reynolds and Steenberg (2006: 573) describe it, a partisan paper ballot is “a system where voters deposit a pre-printed party or candidate ballot in the ballot box—usually no mark is made on the pre-printed ballot. Oftentimes this system is accompanied by the use of envelopes for the ballots placed in the box.” Often the electoral authority delegates the responsibility for printing and distributing the ballots to parties and candidates. This form has some comparative advantages in terms of implementation—namely, it is not technologically demanding for election administrators, and it is not cognitively demanding for voters. Still, these advantages come with clear tradeoffs. Critics voiced concerns about inefficiencies, the burdens partisan paper ballots impose on political parties, and the opportunities it creates for election corruption, such as ballot theft and ballot sabotage.

**Figure 2-1. Voting Procedures in Latin America**  
Most recent national elections, by 2021



Note: The figure presents the ballot form used in national elections by Latin American countries in the most recent election cycle prior to 2021.

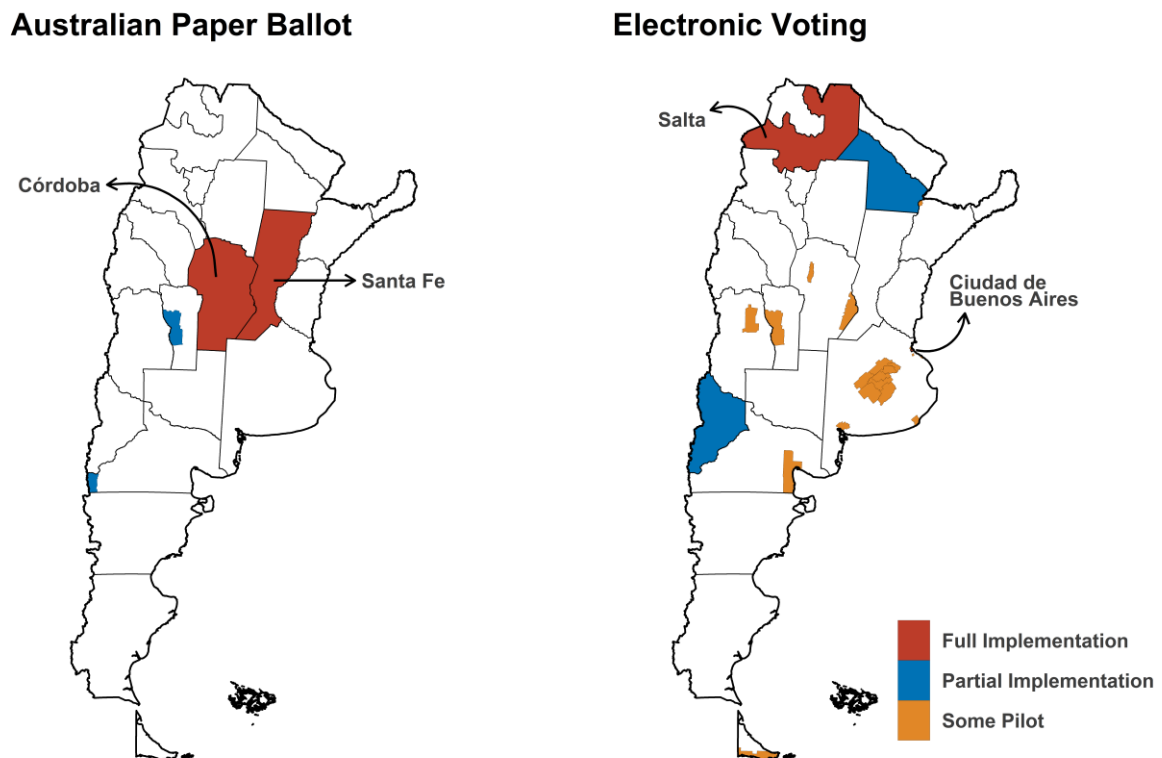
The second ballot type, an Australian ballot, is a procedure in which voters use a uniform ballot that presents all the parties and candidates on a single ticket. Voters express their preference with a mark on the ballot, before depositing it in the ballot box. The Australian ballot is, however, a family of ballot forms that covers a variety of designs. The most important distinction within this group is whether they are arranged on party or office lines. A ballot organized on party lines highlights the attachment of candidates, providing a clear partisan clue to voters. By contrast, ballots arranged on office lines water down party linkages, forcing voters to make a deliberate effort when they want to vote for the same party across races.

As criticisms of the partisan paper ballot gained more traction overtime, and as countries sought to modernize their electoral administration, the partisan paper ballots were gradually replaced. Partisan paper ballots across the region have gradually been replaced by Australian ballots. Chile, for example, adopted an Australian ballot in 1958, long before the last wave of democratization, seeking to prevent voting corruption (Gamboa 2011). Similarly, Colombia abandoned partisan paper ballots in favor of an Australian ballot in 1991, and it has been used in every election since then, both electing national and local offices (Alles et al. 2021; Pachón and Shugart 2010). The landscape in the region is currently dominated by the use of some form of Australian paper ballot in national elections, as shown in Figure 2-1, listing the ballot form in place in the most recent election cycle. By 2021, only Argentina and Uruguay continued employing partisan ballots in national elections.

The adoption of electronic voting, although limited worldwide, has been part of this wave of reforms. Brazil features the largest implementation of electronic voting in the region. Between the late 1990s and early 2000s, Brazil gradually replaced paper ballots with electronic devices. Today electronic ballots are used for all elected officials across every level of government in Brazil (Nicolau 2012). The reform has often been praised as successful in enfranchising voters of lower socioeconomic status (Fujiwara 2015) and in reducing blank and spoiled ballots (Nicolau 2015).

Other countries have adopted or piloted electronic devices. Venezuela implemented electronic voting in 1998. Notwithstanding a few minor changes, the procedure was still in place more than 20 years later. The use of electronic voting in Paraguay, by contrast, was short-lived: it was implemented at the national level in 2001, but its use was discontinued in 2007. Electronic voting has been piloted or adopted in a limited number of local elections in Argentina, Perú, Ecuador, Guatemala, and México (Alvarez et al. 2009; Di Primio 2019).

**Figure 2-2. Innovations in Voting Procedures in Argentina**



Note: The figure presents the ballot innovations piloted or adopted in sub-national elections in Argentina between 2003 and 2021: Santa Fe and Córdoba adopted paper-based Australian ballots in 2011, while Salta and the City of Buenos Aires fully implemented electronic voting at least once.

Source: Tile map by INDEC <<https://www.indec.gov.ar/indec/web/Institucional-Indec-Codgeo>>.

Since 2003, numerous provinces across Argentina have undertaken voting reforms. The election of subnational offices is regulated by provincial constitutions and laws (Calvo and Micozzi 2005; Calvo and Escolar 2005), and each province has its own electoral authorities in charge of conducting province-level elections. Although electoral rules vary considerably across provinces, until very recently, all the provinces used the same partisan paper ballot. Figure 2-2 illustrates the scope of the ballot innovations across Argentina.<sup>2</sup> Two provinces, Santa Fe and

<sup>2</sup> For an extended discussion of variation in voting procedures across subnational elections in Argentina, see Appendix I.

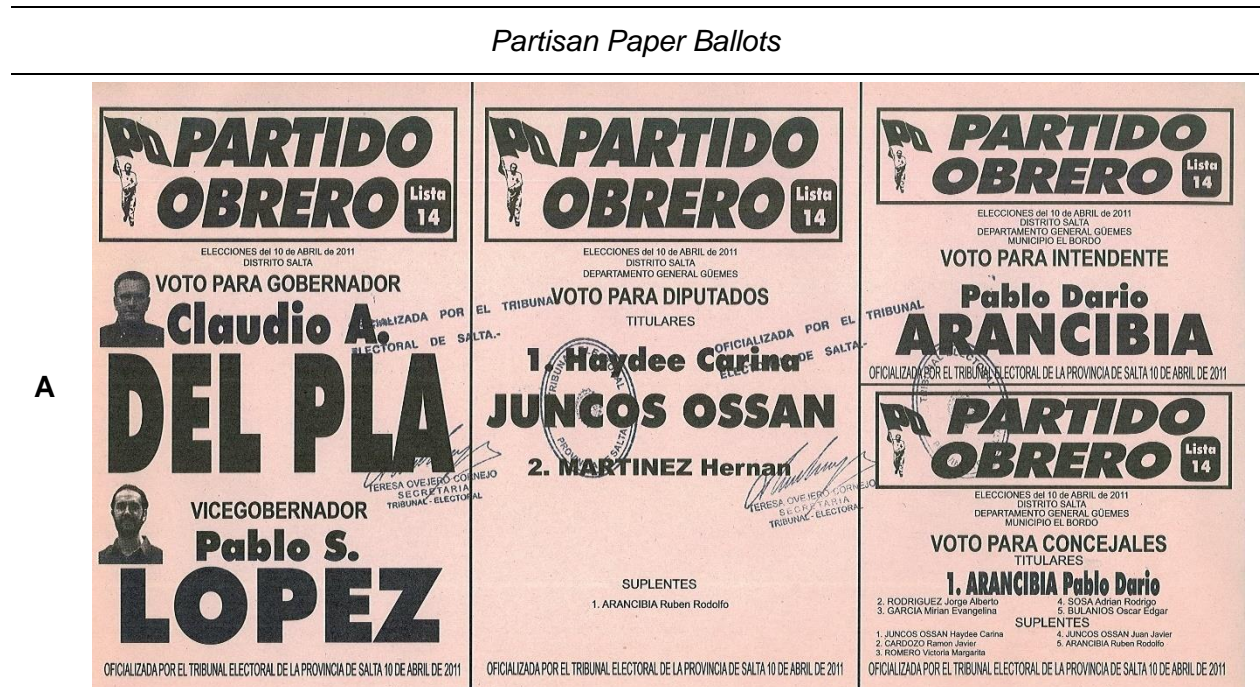
Córdoba, adopted paper-based Australian ballots in 2011 for all provincial and local elections. Despite the dominance of the Australian ballot across Latin America, just a few municipalities in other provinces have emulated Santa Fe and Córdoba, and only did so partially.

Electronic voting has attracted relatively more attention from Argentine reformers. Thirteen provinces currently allow use of some type of electronic device in province- and local-level elections (Observatorio Político Electoral 2021), but the scope of the actual implementation has varied widely. The province of Salta and the City of Buenos Aires have used electronic voting across the entire district to elect the executive and the assembly in at least one election, though Buenos Aires subsequently discontinued its use. Two other provinces, Neuquén and Chaco, began gradual but incomplete adoption throughout their districts. Of all the cases of e-voting adoption in Argentina, Salta, was the first and most resolute implementer.

## From Partisan Paper Ballots to E-Voting: The Case of Salta, Argentina

Over the course of several years, Salta implemented electronic voting in province- and local-level elections. To understand the representational consequences of this ballot reform, it is necessary to be familiar with the original ballot structure in place, and with the changes to the ballot introduced by e-voting. In this section we first detail the traditional partisan paper ballot that has historically been used throughout Argentina. Then, we discuss the adoption of the electronic Australian ballot across Salta.

**Figure 2-3. Examples of Paper and Electronic Ballots in Argentina**





**WAYAR** LISTA 17 GOBERNADOR VOTO PARA GOBERNADOR Y VICEGOBERNADOR

**WAYAR** LISTA 17 GOBERNADOR VOTO PARA DIPUTADOS PROVINCIALES DEPARTAMENTO GENERAL GÜEMES

**WAYAR** LISTA 17 GOBERNADOR VOTO PARA INTENDENTE MUNICIPIO EL BORDO

**WAYAR** LISTA 17 GOBERNADOR VOTO PARA CONCEJALES MUNICIPIO EL BORDO

**WILLY" CARRIZO,**  
**WILFREDO EDGAR**

**JORGE GUAYMAS**

**MARQUEZ,**  
**JUAN ROBERTO**

**"PELUSA" ACUÑA,**  
**MILAGRO DEL CARMEN**

**RESINA, JOSE RAMON**  
**BAZAN, ELDA CRISTINA**  
**RAMOS, DONATA**  
**RUEDA, CANDIDO**    **SOTO, MABEL LEONOR**

Oficializada por el H. Tribunal Electoral de la Provincia Salta 10 de Abril de 2011

B

**LISTA 133 FRENTE DE IZQUIERDA Y DE TRABAJADORES UNIDAD**

**LISTA 133 FRENTE DE IZQUIERDA Y DE TRABAJADORES UNIDAD**

**LISTA 133 FRENTE DE IZQUIERDA Y DE TRABAJADORES UNIDAD**

**NICOLAS DEL CAÑO**  
CANDIDATO A PRESIDENTE DE LA NACIÓN

**ROMINA DEL PLA**  
CANDIDATA A VICEPRESIDENTA DE LA NACIÓN

**TITULARES**

1. **NESTOR A. PITROLA**

2. **LUANA SIMIONI**

**CHRISTIAN C. H. CASTILLO**  
CANDIDATO A GOBERNADOR

**MARIA DE LAS MERCEDES TRIMARCHI**  
CANDIDATA A VICEGOBERNADORA

PTS PARTIDO Obrero PROGRESISTA MESA

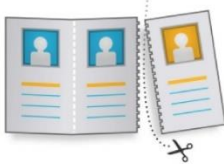
C


Electronic Ballots

D

Chicoana - Chicoana  
Elección de demostración - Uso no oficial  
Tribunal Electoral de la Provincia de Salta

Elija la forma de conformar su voto

 **Votar por Categorías**

 **Votar Lista Completa**

Vista alto contraste

E

Chicoana - Chicoana  
Elección de demostración - Uso no oficial  
Tribunal Electoral de la Provincia de Salta

SENADOR

 <b>GANA SALTA</b> LISTA 450 Gana Salta Castilla, Miguel "Cayin"	 <b>Juntos por el CAMBIO+</b> LISTA 430 Juntos por el Cambio + Dieguez, Virginia Mabel	 <b>PRS</b> LISTA 152 Partido Renovador de Salta D Andrea Cornejo, Esteban
 <b>TODOS</b> LISTA 440 Frente de Todos Baez, Norma	 <b>SALTA PARA TODOS</b> LISTA 410 Salta para Todos Ontiveros, Sergio Gabriel	

Vista alto contraste   Volver Atrás   Votar en Blanco



F

Note: The first three pictures present examples of partisan paper ballots, two from provincial elections in Salta (pictures A and B), and one from a national election (picture C). The following three are pictures of the electronic device adopted in Salta.

Source: All ballot copies come from the provincial and national electoral authorities. An electronic ballot simulator (pictures D to F) is available at: <https://simulador.electoralsalta.gob.ar/sufragio.html> (accessed April 15, 2022).

## The Partisan Paper Ballot

Before the midterm election in 2009, every precinct in Salta used partisan paper ballots that were ubiquitous across Argentina. In this system every political party has its own ballot. That is, only one political party is featured on each ballot. The ballot, as it is depicted in Figure 2.3 (pictures A to C), contained all of the party's candidates for each contest at stake. Each election at stake is displayed side-by-side, on a single piece of paper, and divided by a dashed line. This ballot design has several important consequences for political parties, candidates, and voters alike.

First, and perhaps most obviously, the ballot design has implications for voters. To cast a vote, the voter enters a private voting booth where she finds the ballots of all contending political parties displayed on a table, organized by party or coalition ID number in ascending order. Ballots contain the name, number and logo of the party, the name of the candidates, and sometimes pictures of the candidates at the top of the ticket.

To cast a straight ticket vote, the voter simply chooses the party's ballot of her preference, folds it up, places it into the envelope, and slips the envelope into the ballot box. But, when the voter chooses to split her vote, the process is more demanding. To cast a split-ticket vote, the voter must physically "split" the ballot by cutting out the elected position she supports from each party. Then, she must put the pieces of the ballot that correspond to the candidates she supports in the envelope and deposit the envelope into the ballot box.

For instance, a voter chooses to vote Party A's candidate for governor and Party B's candidate for the provincial assembly. To do this, she must cut out the gubernatorial portion of the Party A ballot and place it in the envelope. Then, she must cut out the portion of the Party B ballot with the legislative candidates and place it in the same envelope.<sup>3</sup> Given this laborious process, voters may be less likely to cast a split ticket. But, when voters do cut their ballot, they may be less likely to re-engage with the ballot and more likely to rolloff. This is because not rolling off requires voters to physically locate the other ballot of choice and physically cut portions of the other party ballot to continue voting in the election.

The ballot also has clear implications for candidates—particularly those competing in down-ballot races. Since voters must physically split their ballot to vote for candidates from different parties, the fates of down-ballot candidates are literally tethered to the fates of top of the ticket candidates. Indeed, as we elaborate in Chapter 4, the physical design of the ballot, and consequently the reform we study in this book, has clear implications for the electoral fortunes of down-ballot candidates.

Finally, for political parties, this physical connection of candidates on the ticket limits small parties' ability to field candidates and win elections in down-ballot races. The partisan paper ballot places an enormous burden on individual political parties to print and distribute their own ballots, and monitor polling places to ensure their availability on election day—i.e., ensure they do not run out of ballots and their ballots are not stolen or damaged by their opponents. The burdens of printing and distributing ballots inform the campaign choices parties make and, consequently, their ability to cultivate supporters.

## **The Electronic Ballot**

The electronic voting devices altered the voting routine in several ways. Salta's electronic vote, depicted in Figure 2.3 (pictures D to F), is composed of four basic elements: a touch-screen, a printer, a scanner, and a paper ballot. The voting process starts when the voter receives a paper ballot containing an electronic chip at the voting station. The ballot has no inscriptions and the chip holds no information. The voter inserts the ballot into the printer. Then, the voter approaches the touch screen as depicted in Figure 2-3 D. She can choose to view the candidates sorted by elected positions, in which case the voter goes race by race, selecting the party she prefers for each office (Figure 2-3 E); or by political party, in which case the voter can cast a straight ticket vote by selecting the preferred party in one single step (Figure 2-3 F). In both cases, the ballot provides the option of voting blank for all or some races (as seen in the bottom right corner of both images). Once the voter has finished making her choices, the voting machine prints the ballot, and to complete the process, the voter places it in the ballot box.

The reform makes several changes to the voting process, which we will argue have critical implications for representation. The new ballot structure eliminates the need for voters to physically split their ticket, resulting in more ease and flexibility for voters who wish to vote for candidates from different political parties for the various offices at stake. Equally important, after voters split their ticket, they can easily reengage with the ballot to cast a vote in the next

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<sup>3</sup> To cast a blank vote for the entire slate of candidates the voter has to place an empty envelope into the ballot box. But, if she wants to cast a blank ballot for only some of the categories at stake, the voter must physically split the ballot, place the portions of the ballot that she is expressing a preference over in the envelope, and omit the portions of the ballot for those she wants to cast the "blank" vote.

context, by simply advancing to the next screen. In terms of physical requirements, voting in the next contest is no more demanding than voting blank or rolling off.

This ballot form has large implications for parties as well. As down-ballot candidates are not physically connected to top-of-the-ballot candidates, it weakens party coattails in down-ballot elections. Additionally, under electronic voting, the electoral authority is charged with providing the devices and all the voting materials to the voting centers. Individual political parties are no longer responsible for the provision of ballots and so every party competing can count on a presence in every voting booth. As it is discussed in chapters 5 and 6, this change has implications for how parties campaign across the state and which parties have a viable shot at winning a seat.

Although the adoption of e-voting was simply designed to facilitate the administration of elections and improve voters' experience, the coming chapters will show that it fundamentally changed the way voters vote, and consequently the strategic calculations and electoral payoffs for candidates and parties. This brief discussion is intended to provide the basic intuition about how this simple ballot reform, replacing a partisan paper ballot with an electronic Australian ballot, can have profound consequences for voters, candidates, and parties. We develop the logic further and provide evidence for each of these claims in chapters 3 to 6. But first, before turning to our evidence, it is important to explain how we can use this reform to make inferences.

## **The Partial Rollout of E-Voting and Opportunities for Causal Inference**

This book examines the ballot reform in Salta to understand the representational consequences of e-voting reform. In general, it can be difficult to draw causal inferences from institutional reforms. To begin, most reforms happen all at once. Thus, even though there might be a clear before and after, because institutional reforms do not happen in a vacuum, it is hard to isolate the effect of a reform from other contextual factors that may be changing over the same time.

Moreover, the people who have the power to alter political institutions are typically the same people who stand to benefit from the laws. Indeed, distributive models, which are the dominant explanation throughout the literature on electoral reform (see Benoit 2007), argue that parties and politicians derive their preferences by weighing whether they would get a competitive advantage from an alternative set of electoral rules, and seek to pass reform that secures their future political position (Colomer 2004; Remmer 2008). In Argentina, for instance, Calvo and Micozzi (2005) present evidence that, after the adoption of an electoral reform, incumbent governors controlling the reform process won about 8% more legislative seats than those expected by any other party with comparable vote shares. As some leaders may implement reforms in anticipation of a change in voter, candidate, or party behavior, it is difficult to rule out reverse causality.

Although we can never fully alleviate concerns with endogeneity associated with institutional reforms, there are several features of the ballot reform in Salta that strengthen our ability to draw causal inferences. First, e-voting reform was implemented over the course of multiple elections. This partial rollout strategy allows us to treat the reform as a quasi-experiment.

Beyond this, elites do not always have complete control over the reform process, and other actors—most importantly voters, but also courts—may influence the final outcome by constraining the reformers' options (Renwick 2010; Sughart 2008). In Salta's case, despite the

governor initiating the reform, the implementation was mostly delegated to the Electoral Court and implemented by non-partisan actors. Consequently, we have fewer concerns that the reform was initially implemented in locations where the government foresaw an electoral benefit.

In this section we detail the partial implementation of e-voting in Salta. In doing so, we trace the history of the adoption and implementation to explain how the politicians were effectively removed from the ballot roll-out. In the final section of the chapter, we predict the partial implementation of e-voting to show that bureaucratic concerns informed the initial placement of electronic voting machines, and political concerns were largely absent in this process. We then use the information we learn from the analysis in this chapter, to inform our research design in subsequent chapters—thus improving our ability to draw causal inferences about the effects of the e-voting reform.

### **Incremental Implementation of Electronic Voting: A Bureaucratic Process**

Electronic ballots were incrementally implemented over five years. In 2007, the entire province used a partisan paper ballot to cast their votes. In 2008 the newly-elected incumbent governor, Juan Manuel Urtubey, sent a bill to the Legislature that would allow the introduction of “new voting technologies” in provincial elections under the oversight of the Electoral Court. Later that year, the Legislature passed the reform, Law 7,540 and the implementation of the reform was delegated to the Court. The Court was responsible for deciding the location and scope of each stage of the implementation, the design of the electronic devices, and publicizing the new procedures to voters and parties.

The first stage of the electronic ballot rollout occurred in the 2009 primary and general elections. The Court conducted a small pilot comprising 10 voting booths in a single municipality, San Lorenzo, in the Peronist primaries. In-person surveys administered at the polling places indicated that voters were satisfied overall with the voting experience, motivating the Electoral Court to expand the use of electronic devices. The general election later that year hosted electronic voting in 36 booths distributed across six voting centers in the City of Salta and San Lorenzo (Page et al. 2016). The overall experience was viewed as a success, leading to a governor’s decree establishing a timetable for the rest of the reform to occur in two steps: 1) in 2011, one third of registered voters would use electronic devices, and 2) by 2015, the entire province would vote using electronic devices (Decree 930/2010).

Prior to the 2011 election, the Electoral Court was responsible for designing and supplying the electronic ballots in a process that included some consultation with political parties (Page et al. 2016). The Court presented the electronic devices to parties (*El Tribuno* 12/02/2010), and with the parties’ input, determined design aspects, such as the screen layout and the use of pictures and party logos (*El Tribuno* 01/03/2011, 01/22/2011). The Court also handled community relations, implementing training demonstrations for public officers and voters on the new voting devices in government local offices, community centers, and other local spots (*El Tribuno* 09/14/2010, 01/29/2011). Despite some complaints about the process being politicized (Pomares et al. 2011; Page et al. 2016), the implementation was largely concentrated in the hands of the Electoral Court.

**Table 2.1. Implementation of E-Voting over Time, by Type of Election**  
Province of Salta, 2007-2019

2007	2009	2011	2013	2015	2017	2019
No Implementation		Partial Implementation	Full Implementation			
All Paper Ballots		Some E-Voting Some Paper	All Electronic Voting			
Gov		Gov		Gov		Gov
Leg	Leg	Leg	Leg	Leg	Leg	Leg
Mayor		Mayor		Mayor		Mayor

Note: The abbreviations code the type of province- or local-level election by year in the book’s dataset: *Gov*, Gubernatorial; *Leg*, Province House and Senate; *Mayor*, Mayoral and City Council.

Non-mandatory party primaries in 2011 offered another opportunity for an early test of the reform, and a total of 325 electronic devices were in place across three departments (*El Tribuno* 01/03/2011, 01/19/2011). For the general election, a few months later, the number of electronic devices was almost double: more than 700 machines were in place, comprising half of the voters in the Capital Department, as well as different fractions of the voters in four other departments (*El Tribuno* 02/06/2011). By the first implementation of electronic voting in a general election in 2011, approximately one third of Salta voters cast their ballots electronically. Post-election surveys indicated that, although older voters and voters with lower levels of education faced relatively more difficulties, the vast majority of voters found the new procedure easy to use (Pomares et al. 2011).

The following mid-term election in 2013 was the first time all voters across Salta used the electronic devices. The same device was used in the subsequent three elections. Table 2.1 summarizes the implementation of electronic voting in general elections in Salta. Throughout this book, we draw on data from these seven election cycles, exploiting data of all gubernatorial, legislative and mayoral elections, to draw inferences about the implications of the e-voting reform.

### **The Initial Placement of Electronic Devices & a Quasi-Experimental Design**

Up until this point, we traced the implementation of e-voting to demonstrate that the devices were partially implemented over the series of multiple elections, under the control of bureaucrats. Both of these features improve our ability to leverage the election reform in Salta to draw causal inferences. In particular, the partial implementation of the reform in 2011 offers a unique opportunity to assess the impact of ballot structures on several outcomes of interest using a quasi-experimental design in which we compare the likelihood of outcomes of interest in those precincts with and without electronic voting.

Nonetheless, the partial implementation of the ballot reform required a decision on where electronic devices were going to be piloted. Despite that the reform was a largely bureaucratic process, there may be some concerns that the initial placement of voting devices (during the partial roll-out) were placed in precincts where we are more likely to observe changes in our outcome variables of interests. Indeed, a key feature of quasi-experiments is that they do not involve an explicit random assignment. As such, it is important to understand the initial placement of the electronic devices, as incorporating this information into our research designs

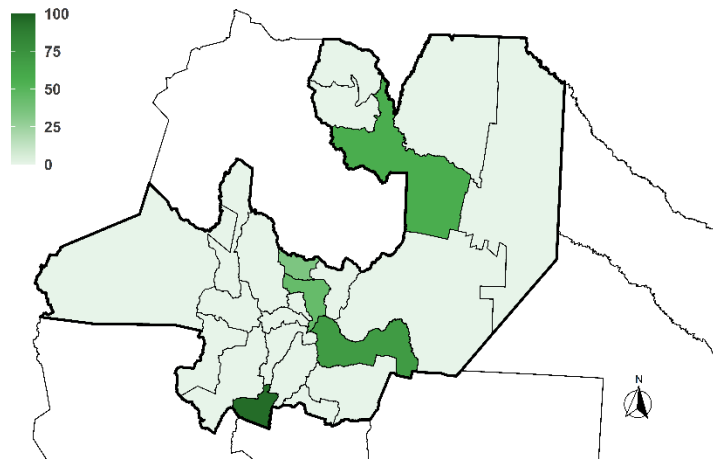
in subsequent chapters can improve our ability to draw causal inferences. To this end, we first describe the initial placement of the e-voting machines. Then, in the penultimate section of this chapter we systematically predict initial placement.

The province of Salta is divided into 23 departments, comprising 60 municipalities. Although many of these departments are mostly rural, most of the population lives in urban areas (83.9%, slightly behind the national average). Of the 1.4 million people now living in the province according to census projections, almost a half live in the Capital Department, which hosts the City of Salta. Other than the provincial capital, no city is larger than 100,000 people. The province is, moreover, relatively poor in comparison to the national average: one-fifth of the households, according to census data, report unsatisfied basic needs; twice the national rate. And the province's geography is relatively complex—warm low plains in the east with areas of thick jungle; cold high altitudes in the west, that includes a plateau three to four thousand meters above sea level; and valleys between them, where most of the population and economic activities are concentrated. This diverse geography adds to the difficulties that parties face when campaigning in very different environments.

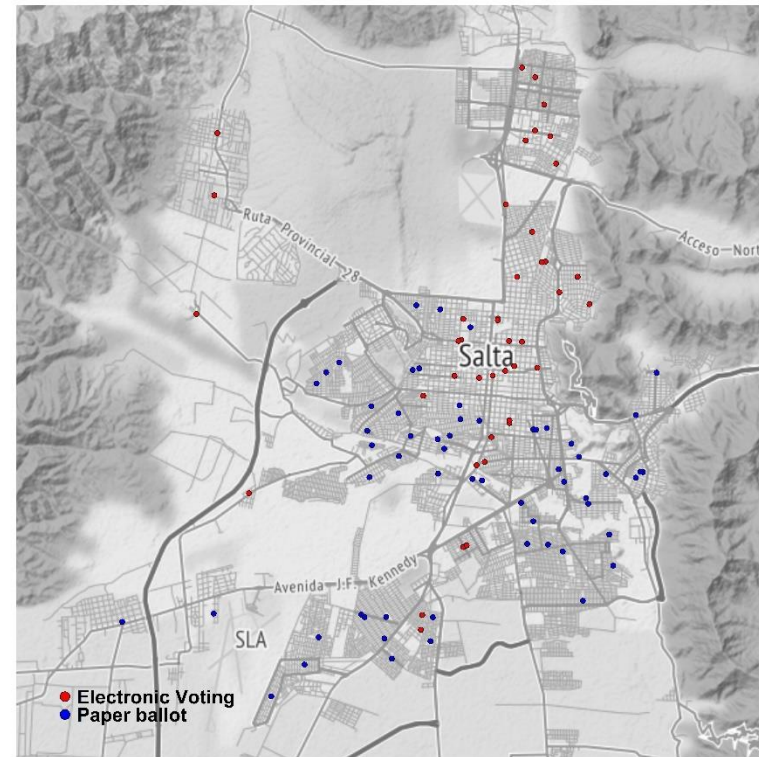


**Figure 2-4. Mapping the Reform Implementation in Salta**

Votes casted with Electronic Devices  
(%, Province of Salta, 2011)



Geo-Location of Voting Centers using Electronic Devices  
(Capital Department, 2011)



**Note:** One polling station that belongs to the same municipality and located in El Chamental, a rural area about 37 kilometers away from the city, is omitted from the Capital Department map.

**Source:** Province of Salta's tile map by INDEC <<https://www.indec.gov.ar/indec/web/Institucional-Indec-Codgeo>>; and Capital Department's tile map by Stamen Design <<http://maps.stamen.com/>>, under CC BY 3.0, based on data by OpenStreetMap.

For electoral purposes, each municipality is divided into precincts, and electronic devices were assigned at this level. Every ballot box in a given precinct used the same voting procedure. As a result, the number of votes cast using electronic devices, as it is represented in the left panel of Figure 2-4, varied across departments: (1) all voters kept paper party ballots in 18 departments; (2) two voting procedures were simultaneously in place in four departments; and (3) all voters cast their ballots using electronic devices in only one department (Cafayate). Overall, about 165,000 votes were cast using electronic machines—i.e., 29.5% of the province total.

The bulk of the implementation occurred in the Capital Department, the largest jurisdiction in the province, which is home to almost a half of the provincial voters: 44.2% of the department's votes were cast using electronic devices. The first implementation of electronic voting also included a relatively large department, Orán, where 56.7% of the votes were cast with electronic devices; a middle-size jurisdiction, Metán (69.5%); and two small departments: Cafayate (100.0%) and La Caldera (34.5%).

The Capital Department comprises two municipalities: the capital and largest city in the province, the City of Salta; and the much smaller Villa San Lorenzo. The City of Salta has 51 election precincts and 22 of them used electronic devices in the 2011 election. Electronic devices, as it is represented in the right panel of Figure 2-4, were somewhat more concentrated in the central and north areas of the city. San Lorenzo is a city of fifteen thousand people, located 12 kilometers away from the City of Salta. It only has three election precincts, and all of them used an electronic device in 2011. Overall, the department comprised 54 election precincts. Each precinct hosted one to four polling places and every polling place accommodated an average of ten voting booths.

## **What Factors Explain the Initial Placement of Electronic Voting Machines?**

Once the choice of implementing the reform by precinct had been made, a second-order decision was the selection of the actual precincts where electronic devices were going to be piloted. The assignment criteria to the specific locations of the electronic devices were not random, but the rationale behind that decision was also not described to the public.

According to the national census (INDEC 2010), socioeconomic indicators vary considerably across and, to a lesser degree, within departments.<sup>4</sup> The Capital Department is the wealthiest jurisdiction in the province, presenting the highest levels of educational attainments and the lowest levels of structural poverty—18.8% of the households in the average election precinct were poor. Instead, poverty is significantly higher in other provincial jurisdictions. Electoral precincts in General San Martín and Orán, departments ranking in the second and third place by population size, averaged 45.8% and 43.8% of poor households respectively. Electoral precincts in Rivadavia Department, the poorest province's jurisdiction, averaged 60.6% of households living in poverty.

Bureaucrats and politicians may have faced incentives to pilot e-voting in some precincts rather than others. Elite interviews with the bureaucrats who organized the reform report that gradual

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<sup>4</sup> All the demographics throughout the book rely on the 2010 census data, which is the closest data to the moment of the reform adoption.

implementation was a strategy to assure a successful execution and to avoid any resistance to the reform (Alvarez et al. 2013; Pomares et al. 2014). Thus, it should be expected that electronic devices were located in areas of higher socioeconomic status and higher levels of education (Alvarez et al. 2013; Pomares and Zárate 2014). More educated voters are expected to be more familiar with electronic devices, and thus, have fewer problems in their first experience with e-voting. A similar rationale seemed to have been adopted to assign electronic ballots in the 2009 primary election (Page et al. 2016): the pilot was conducted in a municipality significantly more urban and more educated than average.

*Bureaucratic Hypothesis.* Electronic devices were more likely to be located in precincts with lower poverty and higher educational attainments.

Provincial politics have been dominated by the Peronist Party since the end of the military dictatorship. Roberto Romero and Hernán Cornejo, both peronists, governed the province between 1983 and 1991, one term each. The Unión Cívica Radical (UCR) and the Partido Renovador de Salta (PRS) were the main opposition forces of relatively similar size. Roberto Ulloa, who had been the military governor in the 1970s and who was the founder of the PRS (Adrogué 1995), defeated the Peronist Party in 1991, becoming the only non-peronist governor in the entire period. The 1991 election was also a turning point for the UCR. The UCR finished in a very distant third place and was never competitive in the province again. Four years later, Juan Carlos Romero, son of the former governor, defeated the incumbent PRS, being elected for the first of three consecutive gubernatorial terms. Romero's success in the polls cemented the peronist dominance in the province.

The 2007 gubernatorial election marked the beginning of a new political cycle. Romero was term-limited and did not seek reelection as governor. Two different candidates with Peronist origins competed for the post. Walter Wayar, then three-term lieutenant governor, who had previously been a provincial senator and a provincial representative ran under the label Frente Justicialista para la Victoria. He faced Juan Manuel Urtubey, a two-term House representative, and former cabinet member under the Romero's administration, who ran under the label Convergencia Salteña. Urtubey defeated Wayar in a tight election, 46.4% to 45.2%, winning the first of three consecutive gubernatorial terms, with the electoral support of the PRS.

There were significant regional disparities in Urtubey's electoral performance. He enjoyed a decisive victory in Metán and General San Martín departments where he won by 23.1% and 20.9% points respectively. He lost in the departments Iruya and Santa Victoria by 41.0% and 36.0% respectively. The election results in the Capital Department, however, were much closer to the provincial average with Urtubey winning only by 1.3 points (44.3% to 43.0%).

Given that the governor spearheaded the decision to implement e-voting and to do so incrementally, it is possible that political calculations guided the assignment of electronic devices. The adoption of a new voting procedure might disrupt territorial mobilization networks, hence risk-averse politicians would be expected to pilot the reform outside their electoral strongholds. And if that was their intention, implementing the ballot reform by election precinct would give them considerable flexibility to do it: they could carefully cherry-pick the areas where voters were going to use one or the other procedure.

*Political Hypothesis.* Electronic devices were more likely to be located in precincts where the electoral support of the governor was weaker.

To evaluate support for our two expectations, we develop a new dataset. To begin, the treatment was assigned at the precinct level. Consequently, our unit of analysis is the electoral precinct. One challenge for developing our dataset is that demographic data is only available at the census tract level (INDEC 2010). Census tracts do not map on to electoral precincts. Rather, precincts may span across multiple tracts, including some complete tracts and portions of others. To address this measurement challenge, we built an original data set using ArcGIS to approximate the precinct boundaries based on the location of voting centers. This allows us to assign all of the census tracts to the projected boundaries.<sup>5</sup>

Next, to test our hypotheses we include measures of the level of educational attainment and poverty from the 2010 census.<sup>6</sup> We assume that bureaucrats may assume educated people, and those with access to more resources, are more likely to have experience using electronic devices such as computers. This exposure would have been seen as valuable for facilitating the rollout of electronic voting. If the bureaucratic hypothesis is supported, we expect to observe a positive and significant relationship between education and the assignment of electronic voting devices, and a negative and significant relationship for poverty. To test the political hypothesis, we account for the share of that precinct that voted for the incumbent governor in the previous election. If the political hypothesis is supported, we anticipate a negative relationship between support for the incumbent governor and electronic voting.<sup>7</sup>

To assess whether the bureaucratic and political considerations affect the treatment assignment, we model the assignment of electronic ballots through a logistic model:

$$\Pr(y_i = 1) = \text{logit}^{-1}(X_i\beta)$$

$$X_i\beta = \alpha + \beta_1\text{pov}_i + \beta_2\text{educ}_i + \beta_3\text{gov}_i + \varepsilon_i$$

where  $i$  indexes the electoral precinct, the term  $y_i$  is a dummy variable that captures the type of voting procedure and it is coded '1' for electronic devices,  $\beta$  represents the coefficients capturing the effect of the  $X$  vector of demographic and electoral covariates on  $y_i$ ,  $\alpha$  is an intercept and  $\varepsilon_i$  is an error term for the  $i$ th observation. The  $X$  vector comprises precinct-level demographics as well as precinct-level electoral backgrounds. We evaluate our expectations on three different samples: the precincts located in the province capital, the interior precincts, and the entire province.

The results from this analysis show support for the Bureaucratic Hypothesis and not the Political Hypothesis. To begin, in support of the Bureaucratic Hypothesis, we observe a positive and significant relationship between education and the implementation of electronic voting. We do not, however, observe a significant relationship between poverty and the assignment of electronic voting once we control for education.

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<sup>5</sup> The Appendix II provides a detailed description of the construction of precinct boundaries.

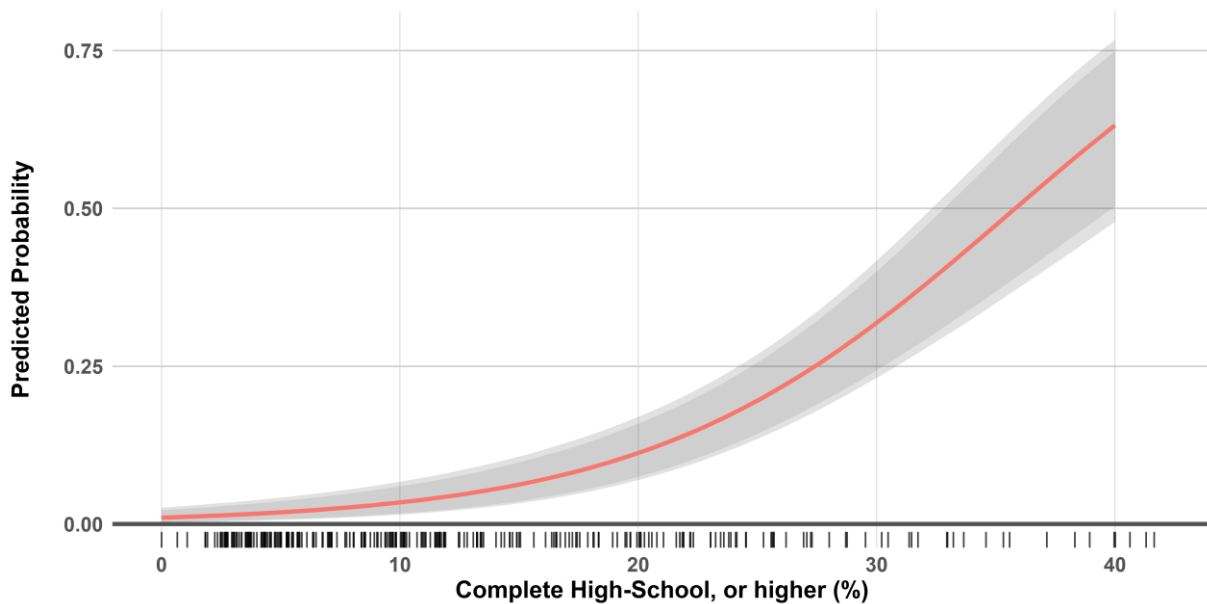
<sup>6</sup> The level of educational attainment is measured as the percentage of the adult population who have a high-school education or higher. The poverty level is measured as the prevalence of structurally deficient households, which is a census-based measure of non-income poverty.

<sup>7</sup> Table II-2-1, in the Online Appendix, presents the model results for three alternative samples: the entire province, the Capital Department, and the departments in the interior of the province.

To illustrate the relationship between education and the assignment of electronic voting, Figure 2-5 presents the predicted probabilities of assigning electronic machines depending on the share of the educated population: the chances of piloting e-voting significantly increase when the population is more educated. A precinct with 20 percent of its residents with complete high-school education (or higher) had about a 11.3% chance of voting using electronic devices, while a precinct with 40% of educated residents had more than a 63.2% chance. These differences are statistically significant.

Importantly, we may think that education could also be a proxy for support for the Peronist Party. Indeed, previous research shows that education (and poverty) is associated with Peronist support (Calvo and Murillo 2019, 2004). That being said, the relationship between education and electronic ballot assignment holds even once controlling for poverty and support for the incumbent Peronist governor.

**Figure 2-5. Predicted Probability of Piloting e-Voting, by level of education (90% and 95% c.i.)**  
Province of Salta, 2011



Note: Model predictions based on model 1, in Table II-2-1, in the Online Appendix. Omitted variables, in their median values.

Finally, turning to the Political Hypothesis, we do not observe that support for the incumbent governor is negatively associated with the assignment of electronic voting. If anything, in some of our models, we observe a positive relationship. This is the opposite of what we would expect to observe if the placement of electronic ballots were politically motivated. Specifically, our models indicate that in the Capital Department, the chances of piloting electronic devices were not associated with Urtubey’s election performance four years before. However, in the interior of the province, chances of assignment were larger in precincts with a larger electoral support for the incumbent governor. Overall, this evidence suggests that reformers weighed the characteristics of precinct when assigning electronic devices, but their considerations seemed to be guided by bureaucratic instead of political considerations. The 2011 general election was the

largest implementation of electronic voting to that day, not only in Salta but in Argentina altogether. Long waiting lines, poorly informed ballot-box authorities, and voters puzzled by the operation of the new voting devices were likely important threats for the electoral authorities, which they appear to have attempted to avoid by placing the first e-voting machines in areas with more educated voters.

## Conclusions

The initial idea of reforming voting procedures in the province may have been motivated by political interests: the reform bill was drafted by the governor's cabinet and passed by the Peronist majority in the assembly. A large body of research indicates that politicians reform election rules or accommodate their implementation seeking partisan benefits, most especially when they have enough power to do it without reaching an agreement with opposition forces (Benoit 2007; Colomer 2004; Remmer 2008; Calvo 2009; Cox and Katz 2002; Engstrom and Kernell 2014). However, this reform process, and its representational consequences, do not seem to fit into this pattern.

From a micro-level perspective, the findings presented in this chapter indicate that the implementation of the reform was mostly driven by bureaucratic (instead of political) considerations. The new procedures were piloted, first and foremost, in areas with more educated constituencies; in the Capital Department, where the largest pilot was carried out, education is the only meaningful predictor. There is little to no evidence that the electronic devices were located in areas where the electoral bases of the governor were larger or slimmer. From a macro-level perspective, as we show in the next chapters, the reform produced effects that did not benefit the incumbent party, such as weakening party coattails or helping opposition parties to penetrate its territorial fiefdoms.

The implementation plan had initially set that the use of electronic voting was going to be extended to two-thirds of the voters in the following election cycle, and later on, to the entire province. However, the electoral authorities decided to speed up the process, and two years later, electronic devices were used in the midterm renovation throughout the entire province—all province-level elections in Salta have used them since then. The adoption of electronic voting in Salta, together with the adoption of paper-based Australian ballots in Córdoba and Santa Fe, brings rich innovations to the manner in which people vote. Such changes are not inconsequential though. This book is devoted to examining how voting procedures shape voting behavior as well as electioneering strategies; the findings in this chapter, combined with the unique partial-implementation of e-voting across the province, will set the ground to address potential threats to our inferences.

## Chapter 3

# Disconnecting Races: The Behavioral Implications of Independent Choices

In August 2011, Mauricio Macri, the mayor of Buenos Aires and leader of the political party Propuesta Republicana (PRO), announced the launch of his party's bid for the national election. Although the PRO was not fielding a presidential candidate, they were hoping to secure seats in Congress. The day of the public announcement, Mauricio Macri and Federico Pinedo (a Congressman from the PRO) arrived at Las Heras Park to launch their campaign with massive scissors in hand. The park was decorated with multicolored balloons and umbrellas. Party advocates were distributing daisy-shaped brochures that read: "Don't cut the flowers, cut the ballot" (*Clarín* 9/21/2011).

From the onset, Macri and Pinedo called on their supporters to split their ballots, voting for the PRO in down-ballot races. As Pinedo explained: "One hundred percent of the citizens who want to vote for the PRO candidates are going to have to split the ballot and include the presidential candidate they want to vote for in the envelope, without the list of House representatives from that party, and with the ballot of the PRO instead" (*Ámbito Financiero* 8/11/2011).<sup>8</sup> The PRO was not fielding a presidential candidate in the upcoming election. For this reason, supporting the PRO would require voters to cast a strategic vote—selecting a candidate from a viable party for president and voting for their preferred party, the PRO, in down-ballot races.

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<sup>8</sup> Original quote: "Nosotros tenemos un problema, o mejor dicho, una dificultad en la próxima elección del 14 de agosto y es que presentamos una boleta para diputados sin candidato a Presidente", dijo Pinedo, en declaraciones al programa "Bajo la Lupa", que se emite por FM Identidad de esta Capital. "Es decir, el 100 por ciento de los ciudadanos que quieran votar a los candidatos del PRO van a tener que cortar boleta e incluir en el sobre al candidato presidencial que quieran votar, sin la lista a diputados de esa agrupación y con la boleta del PRO en su lugar", indicó (*Ámbito Financiero* 8/11/2011). Available at: <https://www.ambito.com/politica/pinedo-tenemos-una-dificultad-ir-candidato-presidente-n3695274>, accessed on May 26, 2022.

**Figure 3-1. National Parties campaigning Split-Ticket Voting**  
Propuesta Republicana (2011)



Source: “El Jefe de Gobierno pidió el voto para su lista de Diputados en Capital: Macri se metió en la pelea de octubre y llamó a cortar boleta.” *Clarín*, September 21, 2011.

Macri made a similar appeal to voters: “It is always good to have balance, so that not everything is [controlled by] one person. Our list goes by itself and we require an effort: that people cut ballots and support this luxury list” (*Clarín* 9/21/2011).<sup>9</sup> One of the nation’s leading newspapers, *Clarín*, predicted: “the word ‘balance’ will be heard often from the PRO leadership during this campaign” (*Clarín* 9/21/2011).<sup>10</sup> Between Macri and Pinedo, the PRO campaign touched on two classic motivations for split-ticket voting: strategic voting (Cox 1997; Moser and Scheiner 2009; Blombäck and de Fine Licht 2017) and ideological/partisan balancing (Burden and Helmke 2009).

Regardless of voters’ motivations to split their ballot, the design of voting procedures can discourage split-ticket voting. As we illustrated in Chapter 2, splitting the partisan paper ballot used across most of Argentina is a very involved process. Thus, it is not surprising that the PRO felt it was necessary to run an aggressive campaign focused on cutting the ballot. Some voters may prefer to split their vote, but they may not always be willing to pay the costs associated with splitting their ticket, when complicated ballot structures create obstacles to doing so (Engstrom and Kernell 2014; Burden and Kimball 2002; Rusk 1970). Evidently, the PRO was keenly aware

<sup>9</sup> Original quote: “Siempre es bueno tener equilibrio, que no todo esté en una sola persona. Nuestra lista va solita y requerimos un esfuerzo: que la gente corte boleta y apoye esta lista de lujo” (*Clarín* 9/21/2011). Available at: [https://www.clarin.com/politica/Macri-octubre-llamo-cortar-boleta\\_0\\_r1SG00hhvme.html](https://www.clarin.com/politica/Macri-octubre-llamo-cortar-boleta_0_r1SG00hhvme.html), accessed on May 26, 2022.

<sup>10</sup> Original quote: “La palabra ‘equilibrio’ se escuchará seguido en el desfile de dirigentes de PRO” (*Clarín* 9/21/2011). Available at: [https://www.clarin.com/politica/Macri-octubre-llamo-cortar-boleta\\_0\\_r1SG00hhvme.html](https://www.clarin.com/politica/Macri-octubre-llamo-cortar-boleta_0_r1SG00hhvme.html), accessed on May 26, 2022.



of this challenge. As Pinedo explained it: “many people do not like” cutting the ballot, despite the fact that it is a “simple procedure.”

In fact, in this chapter we show that needing scissors to split your ballot can be a major deterrent. And, once voters cut their ballot, they may be less likely to re-engage with the ballot and more likely to rolloff. By contrast, we show that more user-friendly ballot structures such as the electronic Australian ballot, that allow voters to split their ballot by simply ticking different boxes, encourages voters to cast votes for different parties. Equally important, once voters split their ballot, we find that they are less likely to roll-off when using the electronic Australian ballot, then when using the traditional partisan paper ballot.

## **The Consequences of Voting Procedures and Ballot Structures on the Choices of Voters**

Voters are frequently called upon to make multiple decisions for different contests in the same election. In presidential democracies, national legislators are often elected on the same day of the presidential election. Different levels of government (e.g., presidents and governors) are commonly elected on the same day. In such cases, straight ticket voting is the dominant form of voting.

Split-ticket voting, wherein voters cast a vote for a different party for different contests in the same election, is a common feature in many elections (Campbell and Miller 1975). Voters may split their ballot to produce ideological or partisan balance (Burden and Helmke 2009), to support candidates who exhibit desirable personal traits (Beck et al. 1992), or to avoid wasting their vote by voting strategically (Cox 1997; Moser and Scheiner 2009; Blombäck and de Fine Licht 2017). Regardless of voters' motivations, the more they split their ballot, the more races for different elected offices become independent of one another. In presidential systems, the degree of connectedness or independence influences the distribution of legislative seats and subsequently, which voters, policies, and preferences are represented in office.

The levels of split-ticket voting, however, vary substantially across political and institutional contexts. In the U.S., for instance, splitting the ticket between presidential and House elections rose from about 12% of the voters in the 1950s, to more than 25% during the 1980s, and it declined again in the 1990s (Burden and Kimball 2002). These values vary across congressional districts, depending in part on how contested the election is (Burden and Kimball 2002). Split-ticket voting tends to be higher in countries with multiparty competition and weakly institutionalized parties (Moser and Scheiner 2009). In Brazil, for example, where the number of effective parties is high, approximately 70% of voters split their ticket between presidential and legislative candidates (Ames et al. 2009). In Mexico, by comparison, where there are far fewer competitive political parties, less than 10% of voters split their ballot during concurrent presidential elections (Helmke 2009). Ticket-splitting in mixed-member electoral institutions also varies substantially, ranging from a low of 8.73% in Hungary to more than 30% in New Zealand and South Korea (Rich 2014).

Although incentives to cast a split ticket are diverse, ballot forms shape the costs that voters face to do so. The manner in which candidates are presented on the ballot affects the centrality of parties and consequently, the likelihood of splitting the vote. Ballots that reinforce party-centric information cues, such as party name or logo, are linked to larger straight-ticket voting (Engstrom and Kernell 2014, 2005; Calvo et al. 2009; Katz et al. 2011; Rusk 1970; Tchintian

2018). And, when ballots do not offer a straight party option, splitting one's vote is no more costly than voting straight-ticket (Walker 1966; Darcy and Schneider 1989).

Ballot structures vary in terms of the cognitive and physical demands they place on voters. Some ballots require voters to select or punch multiple boxes, to cut or tear the ballot, or to use complex machines that demand considerable attention. Such variation in ballot structure informs voters' behavior at the polls, affecting their likelihood of casting a split-ticket vote. Even when voters prefer to split their ticket, the costs imposed by complicated ballot structures may be sufficient to discourage voters from doing so. By contrast, other ballot structures streamline the ticket splitting process, making it easy for motivated voters to split their vote. When voters can split their ballot without incurring any additional costs, they are more likely to do so, even if they do not anticipate it will result in clear electoral payoffs.

Although this logic is general, this research focuses on the implications of the ballot reform introduced in chapter 2. The partisan paper ballots, previously used in Salta, Argentina, is a good example of how the ballot structure can discourage split-ticket voting. To vote straight-ticket all voters need to do is select a ballot, put it in an envelope, and place it in the ballot box. Hence, straight-ticket voting is the most easy and convenient choice. Split-ticket voting, instead, requires voters to manually tear a paper ballot, demanding extra effort and time at the ballot box. By contrast, streamlined voting procedures such as the Australian ballot simplify the vote splitting process. Voters only need to click a button or check a box to choose executive and legislative candidates from different parties. We thus posit:

*Split-ticket Voting Hypothesis.* The average level of split-ticket voting will be lower with the partisan paper ballots than with the Australian ballot.

Ballot design may also influence how often voters roll off (Stewart 2011). Recall, ballot roll-off is the phenomenon where voters cast a valid vote for races at the top of the ticket but not for offices further down the ballot. On some ballots, roll-off may be achieved by skipping over a specific race or contest, as in the U.S., or by removing that portion of the ballot altogether, as is the case for the Argentine partisan paper ballot. Other ballot structures may require voters to actively select an option to vote blank or "voto en blanco," as it appears on the ballots used in some Latin American countries and on the electronic ballot in Salta.

Voters may intentionally avoid casting a vote for down-ballot races, as a result of lack of interest/information or even as a protest vote (Barnes and Rangel 2018; Driscoll and Nelson 2014). Alternatively, roll-off may result from voter fatigue or unintentional errors. High levels of ballot roll-off have implications for electoral outcomes, representation, and democratic legitimacy (Bowler and Donovan 2000; Selb 2008; Sinclair and Alvarez 2004). In general, the same factors that explain overall levels of political participation (e.g., interests, information, and demographics) also explain why some voters intentionally abstain from down-ballot races (Barnes and Rangel 2014, 2018; Wattenberg et al. 2000; Knack and Kropf 2003b; Bullock and Dunn 1996; Vanderleeuw and Sowers 2007; Lamb and Perry 2020).

Importantly, previous research also indicates that under-voting might be linked to voting procedures. In his 1966 study, Walker pointed out that some ballot designs significantly increase roll off due to voter fatigue: "The more complex the design of the ballot, the greater the tendency for voters to neglect races at the bottom of the ticket" (p. 462). A more recent wave of research has provided more evidence that ballot form may induce voter fatigue or even voter confusion (Bowler et al. 1992; Augenblick and Nicholson 2016, Caltech/MIT 2001; Darcy and

Schneider 1989). In this vein, a specific set of voting procedures—such as lever machines, optical scanned ballots and electronic voting machines—has been associated with different rates of ballot roll-off (Ansolabehere and Stewart 2005; Kimball and Kropf 2008; Nichols and Strizek 1995; Alvarez et al. 2013).

In the case of Argentina, the partisan paper ballot disengages voters who split the ballot. After cutting their ballot, to continue voting for down-ballot offices, a voter needs to start the process again: looking for the ballot corresponding to the party she prefers, manually cutting a second ballot, and placing the corresponding sections in the envelope. Every time a voter splits the ticket, the cost of voting for a lower office increases. Some voters may opt to abstain from down-ballot elections, rather than engaging in this elaborate process.

The electronic devices, by contrast, offer voters the option to easily split their votes without rolling off. If, on the one hand, voters choose to view the ballot arranged by a political party, they can easily cast a straight ticket ballot and avoid any roll-off. If, on the other hand, they choose to view their ballot arranged by elected position, voters are required to move through the ballot contest-by-contest, selecting a party for each office at stake. If they choose not to vote for a given contest, they still have to select the option to vote blank (*voto en blanco*). The process of rolling off is the same as the process required to cast a vote. Every time voters split the vote, they are automatically re-engaged in the voting process: the next screen will present them the choices for the next office. Compared to the partisan paper ballots, it makes it simpler to continue voting in down-ballot races. Hence, we posit:

*Ballot Roll-off Hypothesis.* The average level of ballot roll-off will be higher under the partisan paper ballots than under the electronic ballot.

## **Leveraging an Incremental Ballot Reform: A Quasi-Experiment**

Given that the same politicians who stand to benefit from different ballot structures are also typically responsible for selecting and implementing ballots, studies of ballot reform are rife with concerns about endogeneity. A number of factors such as candidate quality, polarization, and the strength of partisan attachments may influence both a politician's incentives to implement ballot reform and voters' decisions to split their ballot and/or roll-off. And yet, these factors can be difficult to observe, and even more tricky to measure.

To alleviate some concerns associated with endogeneity, we leverage a quasi-experimental design, exploiting the incremental implementation of the reform. This research design allows us to test the effect of the ballot structure within a single election while holding a number of confounding factors constant. We develop a quasi-experimental design, by analyzing data from three elections where gubernatorial and provincial legislative elections were held concurrently.<sup>11</sup> In the 2007 election, all voters used partisan paper ballots (no implementation). In 2011, a portion of the voters used electronic devices (partial implementation) and everyone else continued with the paper ballots. In 2015 every voter cast their ballot using the electronic device (full implementation). The incremental ballot reform occurred within a single district, the Capital

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<sup>11</sup> A similar identification strategy has been employed to examine ballot effects by Nicolau 2015; Fujiwara 2015; Zucco and Nicolau 2016; and Barnes, Tchintian, and Alles 2017.

Department, such that all voters voted in the exact same election, for the same contests, and were presented with the same candidate options.

The unit of analysis—also the unit of assignment for the treatment condition—is the electoral precinct. There are 54 precincts in the Capital District. Precincts using electronic devices in the 2011 election are the “treatment group.” Precincts using paper ballots in the 2011 election are the “control group.”

Treatments in quasi-experiments do not involve an explicit random assignment (Gerber and Green 2012). This is the primary feature of our research design that distinguishes it from a natural experiment. The bureaucrats and politicians responsible for the treatment assignment did not make their criteria known. Our empirical analysis in Chapter 2 indicates that electronic devices were more likely to be assigned to precincts with higher socioeconomic status. We also have reason to believe that political concerns may have influenced the treatment criteria. To address these potential threats to random assignment, we match precincts from the treatment and control group over a set of observable socio-demographic and political characteristics.<sup>12</sup>

Matching is a method for preprocessing observational data to improve causal inferences. The goal is to construct a dataset where background conditions in the sample are balanced (and ideally, equal) across the treatment and control groups, before conducting the parametric analysis. This approach allows us to account for the potential confounding effects between the treatment and the outcome variables, and it reduces the probability that the results are model dependent (Morgan and Winship 2014; Ho et al. 2007). We employ Coarsened Exact matching to reconstruct the balance in the sample (Iacus et al. 2012; King and Nielsen 2019). We use two alternative matching thresholds: the stricter threshold creates a more balanced post-matching sample at the cost of reducing the sample size. Model results do not differ significantly due to the selected threshold.<sup>13</sup>

We use a standard difference-in-differences (DiD) approach to examine the causal relationship between ballot form and split-ticket voting and roll-off using the matched sample.<sup>14</sup> In the typical DiD specification, there are only two periods—before and after. But, our data has three observation points, no implementation (2007), partial implementation (2011), and full implementation (2015). Consequently, we conduct two separate DiD analysis: the first comparing the no implementation period to partial implementation, and the second comparing the partial implementation to the full implementation.

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<sup>12</sup> In addition to education, other factors—such as poverty and the incumbent party support—might have some influence on the assignment too. Data, for that reason, has been matched over these three covariates—the percentage of the precinct’s population with complete high-school education or higher, the percentage of the precinct’s population with unsatisfied basic needs, and the electoral support of the incumbent governor in the election before the reform adoption.

<sup>13</sup> Table II-3-1, in the Online Appendix reports the balance improvements after matching the precincts. The use of matching methods significantly reconstructed the sample balance: improvement goes from 79.6 percent for poverty rate, to 90.1 percent for incumbent’s vote share.

<sup>14</sup> Table II-3-2, in the Online Appendix, reports the pre-matching and post-matching sample sizes. As expected, the stricter threshold produces a larger reduction of the sample but a better balance between control and treatment groups.

$$y_{it} = split_{it} \sim N(X_{it}\beta, \sigma^2)$$

$$X_{it}\beta = \alpha + \beta_T T + \beta_A A + \delta(T * A)$$

Each observation in the data is an election precinct. The term  $split_{it}$  is the split-ticket voting in the precinct  $i$  in the period  $t$ . The term  $T$  is a dummy variable that captures possible differences between the treatment and control groups prior to the reform adoption:  $T = 1$  for the treated group. The term  $A$  is a time period dummy that captures aggregate factors that would cause changes in vote splitting even in the absence of a ballot change:  $A = 1$  for the after period. The coefficient  $\delta$  is the DiD estimator.

In sum, the precinct level analysis combined with partial implementation allows us to examine different ballot structures applied in the exact same district, in the exact same election, and under the same electoral rules. This is the primary advantage of a within-election analysis—i.e., it facilitates a controlled comparison across precincts where other potentially confounding factors are held constant. For causal identification, this design is superior to a cross-sectional design wherein institutional and political factors vary substantially, making it more difficult to isolate the effect of the ballot form. The rest of the chapter examines election data from these three cycles in the Capital Department.

## The Influence of the Ballot Structure on Split-Ticket Voting

Split-ticket voting varies considerably across precincts and over time in Salta. Precincts with the highest levels of split-ticket voting showed rates about three times larger than other precincts. On average, the share of split ballots was higher in precincts using electronic devices than in those using the ballot-and-envelope system.<sup>15</sup> In fact, in 2011, the fifteen precincts with the most split-ticket voting all used electronic devices. By contrast, almost all of the precincts with the least split tickets used paper ballots. There is a clear jump in the share of split ballots between the control and treatment precincts in 2011. Importantly, there is no clear pattern between levels of ballot splitting and ballot design in the other two elections, when voting procedures were the same.

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<sup>15</sup> The dependent variable measures the overall share of split tickets by precinct. To calculate the share of split ballots within a precinct,  $split_i$ , we take the absolute value of the difference in the gubernatorial candidate's votes,  $G_{ip}$ , compared to the legislative ticket's votes,  $D_{ip}$ , for each party  $p$  competing in each precinct  $i$ . We sum across all parties in precinct  $i$ , divide by two and weigh the value as a share of the total valid votes,  $V_i$ , in the precinct. This gives us the share of split ticket votes in a given precinct:

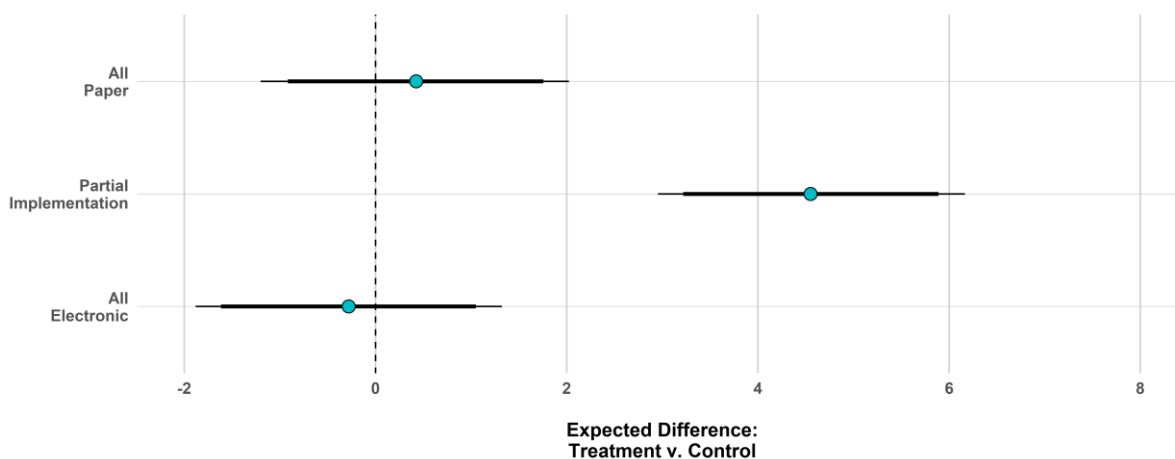
$$split_i = \frac{\sum_{i=1}^n |G_{ij} - D_{ip}|}{2} * 100$$

When the gubernatorial candidate runs with multiple legislative lists, we take the difference between the votes obtained by the gubernatorial candidate and the sum of votes obtained by the different lists attached to his ticket.

The difference-in-differences analysis, comparing the 2007 election (no e-voting) to the 2011 election (partial implementation),<sup>16</sup> shows that the average share of split ballots between the executive and legislative election was 9.10 percent in the control group, and 9.53 percent in the treatment group. The analysis shows that in 2011 the difference was substantially larger. Whereas the share of vote splitting was only 5.67 percent in precincts with paper ballots, the share of split ballots was about double in precincts with electronic devices to 10.22 percent. The DiD comparison between 2007 and 2011 provides strong evidence of the ballot effect: overall, the adoption of e-voting corresponds to a statistically significant increase of 4.13 percentage points.

Four years later, once electronic devices were implemented in all precincts, differences between precincts entirely disappeared. This provides additional evidence for the influence of voting procedures on individual behavior. Whereas the partial implementation resulted in a two-fold increase in ballot splitting between treatment and control groups, the share of split ballots is statistically indistinguishable between the same precincts in 2015, when all precincts used electronic voting: 7.66 and 7.94 percent, in treatment and control groups respectively.

**Figure 3-2. Predicted Vote-Splitting Difference by Treatment Group (90% and 95% c.i.)**  
Based on Data from the Capital Department, 2007-2015



Note: Model predictions based on difference-in-differences analysis, in Table II-3-3, in the Online Appendix.

Figure 3-2 presents the predicted differences between treated and control precincts in each election cycle. The share of split ballots in 2007 and 2015, when voters used the same voting procedure, is statistically indistinguishable between the treatment (+0.43) and control groups (-0.29). Instead, when two voting procedures were in place, there was a significant difference across precincts: +4.56 percent. If some idiosyncratic, unobserved characteristics of the voters in the precincts where electronic devices were implemented were driving the results, similar differences would be expected to emerge in the two remaining elections. On the contrary, we

<sup>16</sup> Table II-3-3, in the Online Appendix, reports the results of the difference-in-differences analysis of split-ticket voting for the 2007 election (no e-voting), the 2011 election (partial implementation), and the 2015 election (full implementation).

observe no such patterns, indicating that differences between precincts observed in the partial implementation are attributable to the voting procedure.

Still, it is important to note that even though e-voting is associated with an increase in split-ticket voting within the exact same election, the overall levels of split-ticket voting decreased between the 2007 (no implementation) and 2015 (full implementation) elections. To understand the difference in the overall level of split-ticket voting between different elections, it is necessary to consider the larger political context: the overall level of split-ticket voting is a function of many factors. In the case of Salta, split-ticket voting was likely higher in 2007 because of a more competitive gubernatorial election and a larger number of parties fielding candidates. Indeed, competitiveness and fragmentation are both associated with increases in split-ticket voting (Ames et al. 2009; Burden and Kimball 2002). Whereas Urtubey was elected governor in 2007 by a narrow margin (1.1%), he was reelected in 2011 and 2015 by a difference of more than 20 points over the runner-up. Moreover, ten political parties fielded gubernatorial candidates in 2007, compared to only eight in 2011 and five in 2015.

## **The Influence of the Ballot Structure on Roll-Off**

In every election, there are a number of voters that turn out, but do not express a preference in a given race. There are two common measures that scholars use to study this phenomenon: residual votes, and ballot roll-off. Residual votes measure votes cast in a given race relative to overall level of turnout; whereas ballot roll-off measures the relationship between the votes cast for a candidate at the top of the ticket compared to those in down-ballot races. In this section, we look first at residual votes to establish a baseline expectation for how many voters do not cast a ballot in a given race. Then we turn to ballot roll-off.

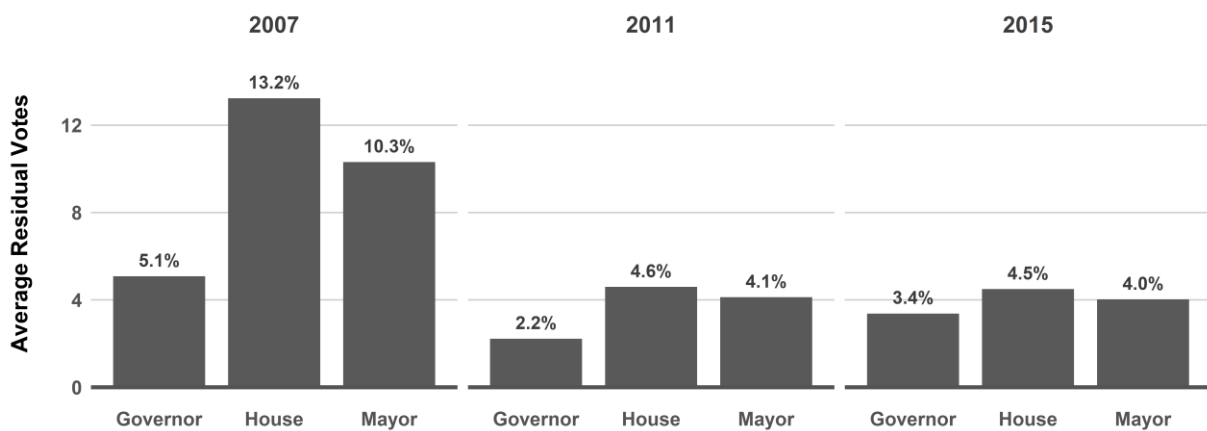
First, we measure residual votes as the percentage of people who turned out and did not cast a vote for any candidate. Residual votes vary significantly across offices. Voters are often more interested in the election of executive offices, hence it is not surprising that there are fewer residual votes in the gubernatorial race, than in the legislative or mayoral races. Residual votes vary across time as well. The average rate in the gubernatorial election at the Capital Department was 5.1 in 2007, it fell to less than a half, 2.2, four years later; and grew again to 3.4 in the last election cycle. Such variations across offices and across time are fairly common elsewhere (see Alvarez et al. 2013; Ansolabehere and Stewart 2005).

Residual votes may vary across races and time depending on office saliency and quality of the pool of candidates, but they may also differ within the same election: descriptive data shows that some precincts may present five or six times more residual votes than others. Differences between treatment and control precincts in the implementation year were, however, significantly above average. Before the implementation of electronic voting, the average of residual votes was roughly the same for the two groups: 4.86 percent in the control group, and 4.09 percent in the treatment group. In 2011, the difference between groups was much larger. Whereas residual votes were only 1.61 percent in precincts with paper ballots, the average increased almost twofold in precincts with electronic devices to 3.20 percent.

To further assess this relationship, we use the same DiD research design that we adopted in the previous section to examine split ticket voting. In this analysis the dependent variable is residual

votes.<sup>17</sup> Consistent with our expectations, the DiD comparison between 2007 and 2011 indicates that the adoption of electronic voting corresponds to a statistically significant increase of 2.36 percentage points. When all the precincts used electronic voting in the following election, differences between groups were not significant.

**Figure 3-3. Average Residual Votes, by Office and Year**  
Capital Department, 2007-2015



Ballot roll-off is the difference of votes cast between the office at the top of the ticket and down-ballot races, and it measures the number of voters that express a preference in the most important race, but abstained from casting a vote in some or all the down-ballot races. Figure 3-3 shows the average residual votes for province- and local-level races between 2007 and 2015.<sup>18</sup> Roll-off in province House and mayoral elections, as it is clear in the figure, was significant in the first election cycle, but much smaller in the following two renovations. Of those who turned out in 2007, 13.2 percent did not vote for any party in the province House election. Engagement in the mayoral election was higher, but still the residual vote rate was 10.3 percent. Instead, in the next two elections, residual votes in House and mayoral elections remained between 4.0 and 4.6 percent.

<sup>17</sup> Table II-3-4, in the Online Appendix, reports the results of the difference-in-differences analysis of ballot roll-off for gubernatorial elections, in the 2007 election (no e-voting), the 2011 election (partial implementation), and the 2015 election (full implementation).

<sup>18</sup> Voters cannot split their ticket between the mayoral race and the city council race. As such the results for city council roll-off are, by definition, the same as the results for mayoral roll-off.



**Figure 3-4. Ratio of Residual Votes, by Implementation Stage and Treatment Group**  
 Capital Department, 2007-2015

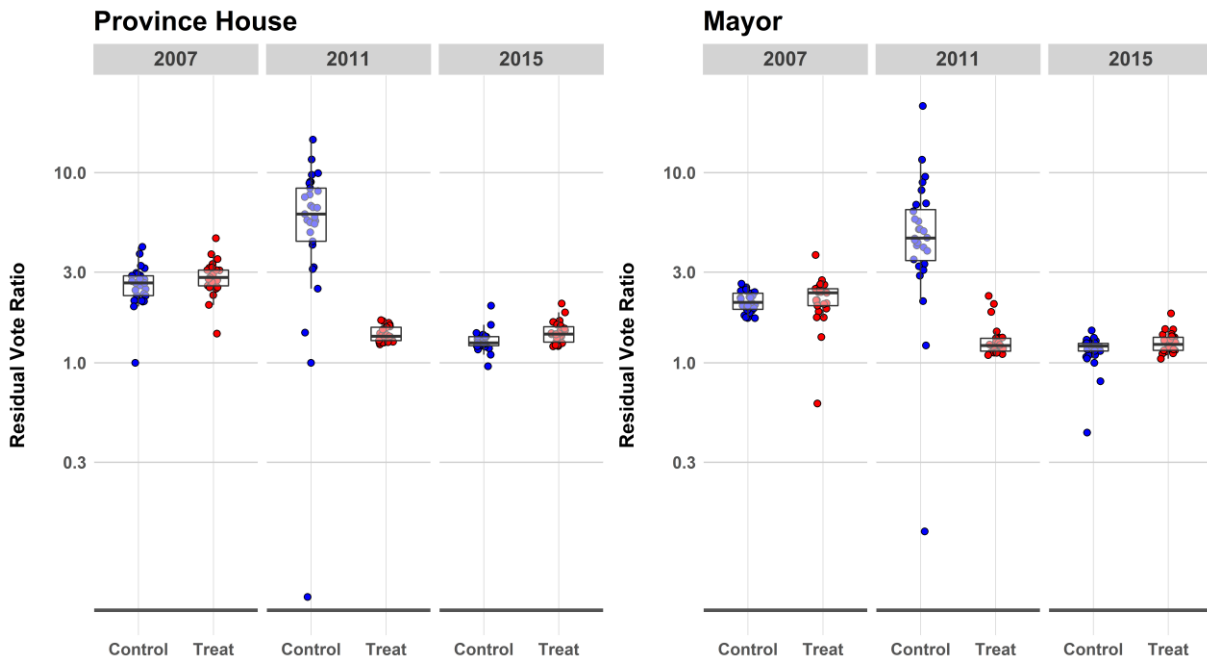
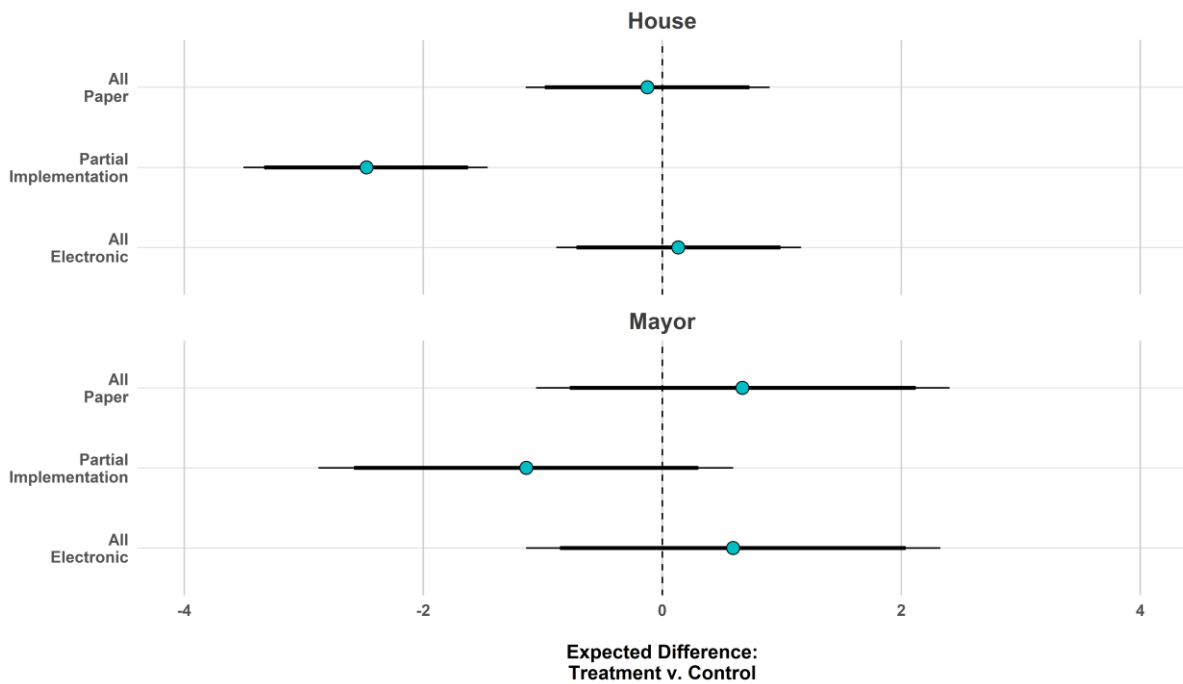


Figure 3-4 illustrates the influence of the voting procedure on ballot roll-off. It presents the ratio of down-ballot residual votes over those in the gubernatorial election, by year and group. A ratio of 1 represents a precinct where residual votes in the gubernatorial race were the same as in the corresponding down-ballot competition, either the legislative or the mayoral election. The ratio rises above 1 when there were more residual votes in the down-ballot race than in the gubernatorial election; and it falls below 1 when there were more votes for candidates in down-ballot offices. The y-axis is logged to keep the symmetry in the representation of the ratio values.

To begin, there are no meaningful differences between precincts when all the voters used the same ballot form, both in 2007 and in 2015, for both legislative and mayoral elections. Instead, the ratio of residual votes was significantly higher among voters in the control group, i.e. using paper ballots, in the partial implementation year; and this was true for both offices. In a nutshell, voters were more frequently engaged in down-ballot races when using electronic devices than when using partisan paper ballots. This pattern holds despite that the saliency of the election and the quality of the pool of candidates were exactly the same.

**Figure 3-5. Predicted Ballot Roll-Off Difference by Treatment Group (90% and 95% c.i.)**  
Based on Data from the Capital Department, 2007-2015



Note: Model predictions based on difference-in-differences analysis, in Table II-3-5, in the Online Appendix.

Figure 3-5 presents the differential effect of electronic voting on treatment versus the control precincts based on the DiD research design. It shows two sets of results, one on the election of the provincial representatives, the other on the election of mayors.<sup>19</sup> Ballot roll-off has been overall larger in House elections, which means that it is the office that voters most frequently skipped over on the ballot. However, ballot roll-off was roughly the same in 2007 across all precincts: 8.33 percent in the control group, and 8.20 percent in the treatment group. Yet, in 2011, the difference between groups was significantly larger. Whereas roll-off was 3.62 percent in precincts with paper ballots, the average roll-off was about a third in precincts voting with electronic devices: only 1.14 percent. The DiD comparison between 2007 and 2011 indicates that the adoption of electronic voting corresponds to a statistically significant decrease in roll-off of about 2.35 percentage points. Instead, when all the precincts used electronic voting in the 2015 election, differences disappeared entirely. Ballot roll-off was 1.20 and 1.06 percent in treatment and control groups, respectively, a statistically indistinguishable difference.

The overall level of ballot roll-off has been lower in mayoral elections; in practice, this means that a portion of voters often skips the House election—which is the race immediately following the gubernatorial ticket—but after that, voters reengage and vote in the local election. The DiD

<sup>19</sup> Table II-3-5, in the Online Appendix, reports the results of the difference-in-differences analysis of ballot roll-off for House and mayoral elections, in the 2007 election (no e-voting), the 2011 election (partial implementation), and the 2015 election (full implementation).

analysis suggests that the same ballot effect is observed in mayoral elections. In 2011, roll-off was 1.92 percent in precincts with paper ballots, while the average roll-off was 0.79 percent in precincts voting with electronic devices. The relationship is, however, statistically weaker than for House elections.

Together, the DiD analyses provide strong support for our hypothesis that the ballot form affects the ability of voters to express their political preferences. The number of residual votes in the gubernatorial election increased in elections using electronic devices, but more importantly, the new voting procedures require voters to continue engaging in down-ballot races whether they choose to vote blank or select a candidate competing for each contest at stake if they want to cast a ballot. This is reflected in how the number of residual votes in down-ballot races, as a proportion of the residual votes at the top of the ticket, became much smaller in precincts voting with electronic devices. It is evident from the 2007-2011 comparison that the implementation of e-voting significantly increased ballot roll-off in House elections, though the effect is less stark in the mayoral race. The 2011-2015 comparison, moreover, makes clear that the differences were not due to some idiosyncratic characteristic of the precincts, but due to the voting procedures, and the extension of the reform also universalizes larger roll-off levels.

## Conclusions

Voting procedures can affect the behavior of voters, and consequently, the election outcomes. Ballot designs differ in terms of the cognitive and physical demands they place on voters. There is evidence that features such as ballot length (Wattenberg et al. 2000), the order and placement of parties and candidates (Augenblick and Nicholson 2015; Ho and Imai 2008; Miller and Krosnick 1998), and the inclusion of informational cues (Lau and Redlawsk 2006; Moehler and Conroy-Krutz 2016) can inform, not only their satisfaction with the voting experience or their trust in the election, but their voting behavior. Our findings throughout this chapter contribute to this body of research by showing that voting procedures affect the choices that voters make.

Our results demonstrate how different ballot structures, within the exact same electoral institutions, can transform the electoral environment from one where voters are effectively discouraged from splitting their votes to one where voters are able to deliberately maximize their interests by more accurately translating their preferences at the polls, undermining the coattails of the candidates at the top of the ticket. Consequently, the electronic ballot would make it easier for voters to split their ticket supporting different parties in the executive and legislative races—just as the PRO was advocating for its supporters when they showed up in Las Heras Park with giant cartoon scissors more than decade ago.

Additionally, our results demonstrate how the voting procedures affect the participation of voters in down-ballot races, either increasing or reducing the costs of reengaging in relatively less visible offices. The strength of the quasi-experimental design employed in this chapter is that it allows us to isolate the effect of the voting procedure from the idiosyncratic characteristics of precinct constituencies, from the qualities of competing candidates, and from the electoral environment of each election cycle, permitting a more precise estimate of the ballot effect.

These findings have important implications for how representation linkages operate in democracies. The influence of the ballot form on vote splitting particularly affects legislative elections, shaping presidential coattails (Engstrom and Kernell 2014, 2005) and incumbency advantage (Carson and Roberts 2013). A closer connection of executive and legislative elections is associated with fewer legislative parties and larger chances of a legislative majority

backing the president's agenda (Cox 1997; Jones 1997; Shugart and Carey 1992). This may facilitate the policy-making process and reduce the likelihood of legislative gridlock. By contrast, a ballot structure that facilitates ballot splitting, weakens the link between the executive and the legislature. Though less efficient for policy making, it may manufacture more inclusive legislative outcomes, demanding bigger efforts from the executive to construct majorities in the assembly. At the same time, large rates of ballot roll-off suggest a significant portion of the electorate fails to participate in low-profile elections, weakening the representativeness of down-ballot offices. A ballot form that reduces undervoting in these province- and local-level races, as the adopted electronic voting did, may reinvigorate the democratic connection of the elected officials with voters.

Importantly, however, the effect of ballots does not end at the ballot box. The ballot forms, by shaping the behavior of voters at the ballot box, also affect the electoral opportunities of candidates, as well as the electioneering strategies of parties. The next chapter examines the first of these two aspects: how ballot forms that increase personal vote, as the adopted electronic voting device does, affect the chances of incumbents running for reelection and of female candidates.

## Chapter 4

# The Rise of the Personal Vote: The Implications for Candidates

When “ConVocación por San Isidro,” a party competing in local elections in a suburb of Buenos Aires, was first starting off, they ran alongside a national party in an effort to attract more votes to their ballot. Even though they did not themselves field a candidate in the presidential or gubernatorial election, they knew that without a strong candidate at the top of the ticket the likelihood of winning many votes were slim. This is because races at the top of the ticket structure electoral competition in down-ballot races. But, in 2011, ConVocación decided to go at it alone, despite the strength of top-of-the-ticket coattails.

Addressing this challenge head on, ConVocación started to actively campaign for voters to split their ballot—voting for ConVocación in down-ballot races. Flyers describing how to split a ballot were handed out in the streets and dropped in mailboxes. They were not shy about explaining to voters that they could simultaneously vote for ideologically close parties for up ballot races. Party volunteers installed tables on the street to canvas neighbors and passersby. They displayed two-meter tall cardboard scissors at each side of the table, visually reminding voters to cut their ballot. Candidates frequently appear in campaign pictures holding oversized scissors in their hands. And this double entendre was even incorporated into the party slogans: “Cortá con lo que ya fue” (Cut with the past) asks voters to figuratively leave the past behind, by literally cutting their ballot. And by most accounts, this campaign effort was successful as they captured upwards of 20% of the votes, winning two to three council seats in every election cycle between 2013 and 2021.

**Figure 4-1. Local Parties campaigning Split-Ticket Voting**  
 ConVocación por San Isidro (2021)



**CATALINA RIGANTI** CONCEJAL

ACÁ TENÉS LA BOLETA LISTA PARA VOTAR A CATALINA RIGANTI, A MARCOS HILDING OHLSSON Y A CONVOCACIÓN ESTE 14 DE NOVIEMBRE.

**CORTÁ CON LO QUE YA FUE**

CORTÁ BOLETA EN SAN ISIDRO

conVocación CIVICA MARCOS HILDING OHLSSON

---

**ASÍ VOTÁS A CATALINA RIGANTI Y A CONVOCACIÓN. ASÍ CORTÁS CON LO QUE YA FUE EN SAN ISIDRO.**

Tu acompañamos en esta elección. Elegí tu boleta nacional, con el último cuerpo y sumá la boleta de **CATALINA RIGANTI**.

**¿CÓMO CORTAR BOLETA?**

- 1 Elegí un boleta. Marca el número de partido y sumá la boleta de **CATALINA RIGANTI**.
- 2 Agordá la boleta de **CATALINA RIGANTI** y sumá la boleta de **CONVOCACIÓN**.
- 3 Guárdala en el sobre. La boleta que quieras y la boleta con el corte de **CORTÁ CON LO QUE YA FUE** irán en el sobre.

También podés votar a Catalina Riganti, a Marcos Hilding Ohlsson y a Convocación, colocando en el sobre solamente la boleta contra de **CATALINA RIGANTI**.

CANDIDATOS ADICIONALES

**CORTÁ CON LO QUE YA FUE.**

A la hora de votar pensá también en tu rincón de la Argentina.

**VOTA A CONVOCACION**

**PARA CAMBIAR, PRIMERO HAY QUE CORTAR.**

Cortemos con la monarquía de Posse. Cortá boleta y volá a **CATALINA RIGANTI**

**CATALINA RIGANTI**

¡TE LAS LLEVAMOS LISTAS PARA VOTAR!

PREVIA A VOTAR

www.convocacion.org.ar

**CORTÁ CON LO QUE YA FUE**

Note: The left-hand panel presents a stand of ConVocación on the streets of San Isidro, a suburb of Buenos Aires. The right-hand panel presents a campaign flyer, from the 2021 election cycle, containing instructions to split the ballot; it was handed to passers-by and mailed to voters.

The disproportionate emphasis on cutting the ballot for local parties is necessary in the Argentine context because the partisan paper ballot reinforces the strength of coattails. Other

ballot structures, however, make it easier to split the vote. When party coattails become less important, down-ballot races can disassociate their campaign from the top of the ticket and focus their campaigns on the personal reputation of candidates. In the case of ConVocación, as well as other parties in a similar position, such ballots would perhaps allow them to center their campaign on candidates and local issues in the election. As such, weakened coattails make it easier for candidates competing in down-ballot races to cultivate a personal vote.

In this chapter, we investigate whether this is the case. Specifically, we argue that personal vote earning attributes may be more important for garnering votes under some ballot forms. In doing so, we leverage data from mayoral elections to focus on two candidate-level features: experience and gender.

## **Ballot Structure, Split-Ticket Voting, and the Fate of Down-Ballot Candidates**

Mayoral races are generally listed down the ballot, after national- and province-level offices. Voters typically lack information about candidates competing further down the ballot (Atkeson and Hamel 2020; Holman and Lay 2021). As a result, the electoral fates of candidates competing in down-ballot races are heavily influenced by coattails from offices at the top—i.e., voters choose candidates in down-ballot races who are competing under the same party as their preferred candidates at the top of the ballot. Hence, if mayoral candidates compete on the ticket of a party with a large electoral base or on a ballot with popular candidates at the top, they are likely to attract more votes than if they were competing in small parties or under an unpopular candidate.

Still, the extent to which electoral coattails influence the electoral fortunes of candidates varies dramatically depending on the ballot structure. When straight-ticket voting is the norm, the fates of candidates further down the ballot are largely dependent on the success of the candidates at the top—i.e., the coattail effect. By contrast, the electronic ballot adopted in Salta, as it was shown in Chapter 3, resulted in a large uptick in split-ticket voting. Ballot designs that encourage voters to make independent choices for each contest at stake, facilitate split-ticket voting, and ultimately reduce the saliency of coattails. In an environment like this, candidates in down-ballot races do not benefit as much from the strength of the candidate at the top of the ticket. That is, voters may be less likely to simply extend their party choice to all races down the ballot. Instead, voters may be more likely to make discrete decisions for each race, and personal vote earning attributes or other information cues may become more salient for candidates competing down the ballot.

Conventionally, personal vote refers to “that portion of a candidate's electoral support which originates in his or her personal qualities, qualifications, activities, and record (Cain et al. 1987: 9).” Though there is a wide range of individual attributes that can affect the fate of candidates, we focus on two individual features that we can systematically observe throughout the sample: experience and gender. Based on records of the Electoral Court, we recorded the incumbency status, the experience in province-level legislative seats and the gender of each candidate competing in the 2007-2019 mayoral elections. In this chapter, we leverage this information to examine how the ballot form interacts with the experience and gender of mayoral candidates.

## **The Influence of Careers: Amplifying the Incumbency Bonus**

Individuals may develop resources that are useful when running for office, such as name recognition, based on their professional career, for example from being a successful businessperson or a media personality. Holding public office is a major source of this type of resources. Political experience comes with name recognition, political connections, and party networks. Each of these features aid candidates in their bid for election. In this chapter, we focus on two forms of political experience: whether a candidate was the incumbent mayor, and whether a candidate was a (current or former) provincial representative.<sup>20</sup>

Incumbents are powerful candidates in elections, not only in Salta, but elsewhere too (Klašnja and Titiunik 2017; Micozzi and Lucardi 2021; Patty et al. 2019; Gelman and King 1990; Erikson 1971). Incumbents enjoy substantial name recognition, considerable media attention, and significant organizational resources; hence, once they join any race, they are almost always included in the pool of viable candidates.

When incumbents compete on ballots that facilitate split-ticket voting, they are in position to benefit from the personal vote and potentially accrue more votes. In particular, research argues that the incumbency advantage is a combination of personal vote, partisanship, and the electoral environment (Desposato and Petrocik 2007; Jacobson 2001; Mustillo and Polga-Hecimovich 2020). Just over half of the advantage is typically attributed to the personal vote factors such as name recognition, experience in office, and interactions with voters through casework (Trounstine 2011). The remaining bonus is attributed to partisanship and the political environment, where the environment refers to the strength of top-of-the-ballot candidates (or coattail effects) and current political issues.

The extent to which any of these factors, such as personal vote, partisanship, and the political environment, benefit incumbents on election day varies depending on a number of important political and institutional features (Desposato and Petrocik 2003). We reason that the personal vote should be more important when candidates compete on ballots that facilitate split-ticket voting. In this circumstance, candidates benefit more from their own personal reputation than in elections when the ballot encourages straight-ticket voting, and their fates are largely defined by party attachment and the strength of top-of-the-ballot candidates. Given that the importance of top-of-the-ballot races trumps down-ballot races, it may be difficult for incumbents themselves to attract voters to the party ticket when the ballot encourages straight-ticket voting. But if voters can easily split their vote—supporting candidates from different tickets/parties for different contests at stake—the candidate’s personal reputation has the potential to lure more votes.

Moreover, the ballot form may motivate candidates to increase their efforts within their district to develop their personal vote, rather than simply focusing on turning out more voters. As a matter of fact, in addition to controlling powerful local machines that allow them to turnout-the-vote for their party (Szwarcberg 2013), mayors in Argentina are significant political actors who direct the allocation of government resources and public services (Feierherd and Lucardi 2022; Garay and

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<sup>20</sup> We limit our analysis to this type of experience because it is virtually impossible to track down systematic information on non-political careers of candidates competing for local-level elections over a decade ago in rural Salta, and because candidates who have held higher positions, such as governors or national legislators, very rarely seek mayor’s office.



Maroto 2019; Garay and Simison 2022). They can use these resources to further cultivate a personal vote.

Data from mayoral elections in Salta indicates that incumbent mayors, when running for reelection, do significantly better.<sup>21</sup> Based on 240 mayoral elections, our data shows that incumbents outperform the average candidate by between 29 and 32 points, depending on the model specification. Taken together, it would be expected that the incumbency bonus will be larger when ballots encourage split-ticket voting, and smaller when they discourage split-ticket voting.

*Incumbency Hypothesis.* In down-ballot races, incumbents competing on the electronic ballot will enjoy a larger incumbency bonus, than incumbents competing on the paper ballot.

Importantly, many of these factors such as name recognition and experience in office that benefit incumbents are not exclusive to incumbents. Other officeholders may enjoy similar electoral advantages when competing for an elected position. In particular, current and former legislators are tested campaigners, who are often well-known in their districts, and they may count on established political networks to support them. That said, they do not have the same control over resources or visibility derived from holding the mayoral office as incumbent candidates, consequently the overall experience bonus should be smaller than the incumbency bonus. Consistent with this observation, our data shows that former and current provincial legislators performed better than the average mayoral candidate. But they only enjoy about half of the bonus of incumbent mayors. For this reason, we anticipate that similar to incumbents, legislators running in mayoral elections will perform better under electronic ballots.

*Experience Hypothesis.* In down-ballot races, (current and former) legislators competing for mayor on the electronic ballot will enjoy a larger bonus, than legislators competing for mayor on the paper ballot.

### **Candidate Gender: An Uneven Playing Field?**

Previous research shows that candidate sex is another piece of information that voters use to make decisions during elections (Anzia and Bernhard 2022; Valdini 2013). In particular, Bauer (2020a; 2020b) explains that although people may evaluate individual women candidates as competent when assessing the minimal skills necessary to be a politician, voters evaluate women candidates more negatively than men when forming broad inferences. Consequently, women have to be better qualified to fare as well as their male counterparts on the ballot. Voters hold women to higher standards than their male competition and are thus less likely to cast their ballot in favor of women candidates. In line with this observation, scholars frequently find that women come under more scrutiny when running for office (Boussalis et al. 2021; Ditonto et al. 2014; Holman et al. 2016; Holman et al. 2021; Saxton and Barnes 2022; Teele et al. 2018). Likewise, observational research on U.S. elections that accounts for the quality of candidates competing in elections demonstrates that women garner fewer votes at the polls than do equally qualified men (Barnes, Branton and Cassese 2017; Fulton 2012).

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<sup>21</sup> Table II-4-1, in the Online Appendix, presents the empirical results. Models examine the influence of candidate experience on the vote share, between 2007 and 2019, using municipality-level candidate data.

Although there is evidence that more subtle forms of gender bias influence women's prospects at the polls, it is also possible that voters have overt preferences for male candidates. Setzler (2019) showed, for example, that about 20 percent of survey respondents in 2012 in Argentina agreed or strongly agreed that men make better political leaders than women. This finding is consistent with broader trends from Latin America, observed by Morgan and Buice (2013), where a sizable minority of voters openly agree that men make better political leaders. And, importantly, that voters are more likely to rely on information-cues such as candidates' sex in low-information settings such as down-ballot races (Barnes and Beaulieu 2014; Bernhard and Freeder 2020; Anzia and Bernhard 2022; McDermott 1997, 1998).

In the case of Salta, we observe that women do not perform as well as men at the polls.<sup>22</sup> Among mayoral candidates competing in municipalities across Salta from 2007 to 2019, evidence shows that women candidates competing for mayor underperform the average candidate by 5 percentage points, which represents a significant burden on women competing for office. This finding holds even after controlling for the incumbency of gubernatorial candidates at the top of the ticket and the number of mayoral candidates in the race. The relationship is smaller, however, and not significant when looking at parties with only one mayoral candidate in the district, suggesting that women are relatively better-off in less crowded electoral fields.

We argue that the ballot form interacts with these disadvantages faced by female candidates, leading to heterogeneous effects on the electoral arena. We anticipate that if gender bias against women is at work in the electorate, either subtle forms of bias like that uncovered by Bauer (2020) or overt ones like that reported by Setzler, ballots that encourage voters to make discrete decisions for each race at stake will divert support from female candidates competing in down-ballot races. That is, if ballot splitting is made easy, voters who do not prefer to vote for female candidates can effortlessly choose a different mayoral candidate. As a result, user-friendly ballot structures, such as the Australian ballot implemented in electronic devices, may actually hinder women's access to office.

*Women v. Women Hypothesis.* Women will garner a smaller vote share under ballots that facilitate voters to split their ticket, than under those that discourage it.

*Women v. Men Hypothesis.* Women will garner a smaller vote share than men, when both are competing under ballots that facilitate voters to split their ticket.

In sum, it is our contention that, when ballots encourage straight-ticket voting, coattails exert a stronger influence over the electoral fates of mayoral candidates—regardless of their sex. By contrast, if gender bias shapes voters' electoral preferences, women will garner a lower vote share when they compete on ballots that encourage voters to split their ticket (e.g., the Australian ballot).

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<sup>22</sup> Table II-4-2, in the Online Appendix, presents the empirical results. Models examine the influence of candidate gender on the vote share, between 2007 and 2019, using municipality-level candidate data.

## Assessing the Influence of Individual Attributes on the Performance of Candidates

Whereas the previous chapter relied on a matched sample from the Capital Department, the main empirical analysis in this chapter employs a cross-sectional analysis leveraging municipality-level candidate data from the entire province of Salta over four mayoral elections. The province is divided into 23 departments, and mayors are elected every four years in 60 municipalities of a lower level. Every municipality in the sample used a single voting procedure, either paper ballots or electronic voting. We examine 1,185 municipality-level party observations between 2007 and 2019 to assess the ballot effect on the electoral performance of incumbent and female candidates.<sup>23</sup>

To capture the influence of the voting procedure, we estimated a set of linear regression models:

$$y_{pj} = Perf_{pj} \sim N(X_{pj}\beta, \sigma^2)$$

Each observation in the data is a municipality-level party observation. The main dependent variable,  $Perf_{pj}$ , is the electoral performance of a candidate  $p$  in municipality  $j$ , measured as the difference of her vote share, relative to the gubernatorial candidate at the top of the ticket: values go positive when the mayoral candidate outperformed the gubernatorial one.<sup>24</sup>

The main independent variables in the equation are (a) candidate experience, (b) candidate gender, and (c) ballot type. However, we estimated different equations when examining the influence of experience:

$$X_{pj}\beta = \alpha + \beta_1 eVot_{pj} + \beta_2 incumb_{pj} + \beta_3 legExp_{pj} + \beta_4 eVot_{pj} * incumb_{pj} + \beta_5 eVot_{pj} * legExp_{pj} + \beta Z_{pj}$$

And when examining the influence of gender:

$$X_{pj}\beta = \alpha + \beta_1 eVot_{pj} + \beta_2 gender_{pj} + \beta_3 eVot_{pj} * gender_{pj} + \beta Z_{pj}$$

The ballot effect should be reflected in the corresponding interaction terms. Finally, the  $Z$  vector comprises a set of potentially intervening factors.

Gubernatorial candidates may field more than one mayoral candidate in the same municipality. Thus, to calculate the score, the gubernatorial vote share is divided by the number of mayoral candidates. To confirm the reliability of this measure, we also present separate results for a subset of the sample comprising party tickets with only one mayoral candidate.

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<sup>23</sup> Differently to the empirical strategy followed in the previous chapter, which leverages over a quasi-experimental design, this chapter includes data of all the elections for which there is municipality-level candidate information available.

<sup>24</sup> Tables include, for descriptive purposes, models using the candidate's municipality-level vote share, as dependent variable.

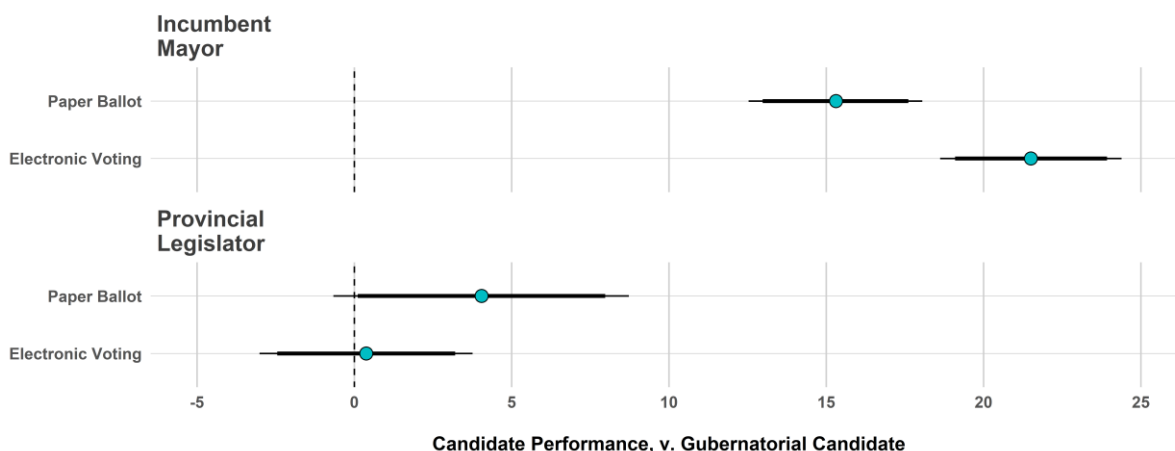
Additionally, using the exact same research design as the one employed in Chapter 3, we examine precinct-level candidate data from the mayoral election in the City of Salta in 2011. This municipality used both voting procedures in that year, allowing us to compare the performance of candidates, in the exact same institutional and party environment, except for the ballot form in place.

The rest of the chapter examines the ballot effect, first, on incumbent candidates, and second, on female candidates.

## The Influence of the Ballot Structure on the Incumbency Advantage

Candidates who ran for office in the past will certainly have advantages over neophyte ones. Incumbents are candidates who enjoy large name recognition and significant organizational resources, which they will exploit when running for reelection. Similarly, current and former provincial legislators are officeholders who may exploit similar electoral advantages when running for mayor. Over this period, about one every four candidates had experience in either position: the province-wide sample comprises 187 incumbents (15.8%), as well as 97 candidates with some legislative experience (8.2%). A fraction of them, 18 mayoral candidates (1.5%), were incumbents with additional experience in the provincial legislature.

**Figure 4-2. Expected Candidate Performance, Relative to the Gubernatorial Candidate, by Experience and Ballot Type (90% and 95% c.i.)**  
Based on Data from the Province of Salta, 2007-2019



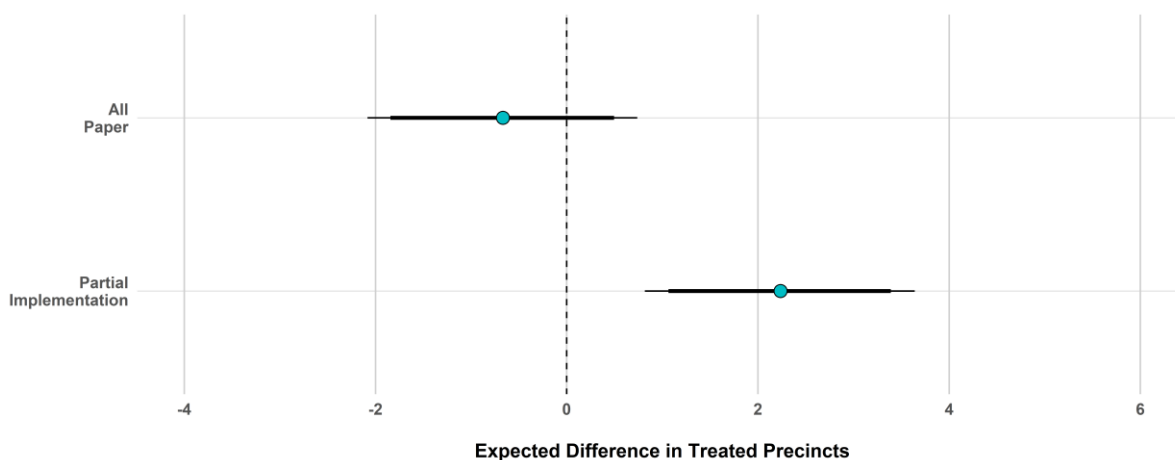
Note: Model predictions based on model 1, in Table II-4-3, in the Online Appendix. Omitted variables, in their median values.

Does electronic voting benefit experienced candidates? Figure 4-2 presents model predictions, showing the expected performance of a mayoral candidate relative to the gubernatorial candidate at the top of the ticket based on their background. When a mayoral candidate gets the same vote share as the gubernatorial candidate, the value is zero (dashed line). When a mayoral candidate outperforms the gubernatorial candidate, values are positive.

Model predictions show that incumbent mayors running in municipalities using electronic devices outperform incumbents competing in municipalities still using paper ballots by 6.2 percentage points. This gap is statistically significant. The same does not hold for candidates with a legislative background. They do not perform significantly better or worse in elections using electronic devices. Moreover, if we compare the performance of provincial legislators against incumbent mayors, the performance gap is substantially wider under electronic devices than under paper ballots: an increase from 11.3 to 21.1 percentage points. Although legislators may be visible political figures, they are not as effective as incumbents at developing a personal brand, and they are not comparably able to exploit the advantages that electronic devices create for personal vote.<sup>25</sup>

Mayoral elections in the City of Salta provides a robustness check of the incumbency advantage that we observed in the entire sample, now exploiting much more granular data in a quasi-experimental setting.<sup>26</sup> Miguel Isa, the city mayor, ran for reelection in two consecutive turns, 2007 and 2011, and the gubernatorial candidate at the top of the ticket, Governor Urtubey, remained the same in both elections. This municipality used both voting procedures in 2011, allowing us to compare the performance of the same incumbent in the exact same election, except for the voting procedure in place. The previous election, in which all voters used the same ballot form, offers a baseline.

**Figure 4-3. Expected Difference in Incumbent Mayor’s Performance in Treated Precincts, Relative to Control Precincts, by Implementation Stage (90% and 95% c.i.)**  
Based on Data from the City of Salta, 2007 and 2011



Note: Model predictions based on model 1, in Table II-4-4, in the Online Appendix. Omitted variables, in their median values.

<sup>25</sup> Table II-4-3 in the Online Appendix, presents the empirical results. Models examine the electoral performance of mayoral candidates, relative to the gubernatorial candidate at the top of the ticket.

<sup>26</sup> Table II-4-4, in the Online Appendix, presents the empirical results. Models examine precinct-level data of one incumbent mayor running for reelection, in a single municipality in two consecutive renovations. The incumbent mayor did not run for reelection in 2015, hence the full implementation is not included in the analysis.

Model results confirm the incumbency advantage observed in the cross-sectional analysis. Figure 4-3 plots the marginal effect of electronic voting on the incumbency advantage for the 2007 (all paper ballots) and 2011 (partial implementation) elections. In 2007, when all candidates competed on the paper ballot, the incumbency bonus across treatment and control groups was indistinguishable from zero (dashed line). However, in 2011, under partial implementation, the mayoral candidate experienced a significantly larger incumbency advantage in precincts where he competed on an electronic ballot, than in precincts where he competed on a paper ballot: Miguel Isa did about 2.2% better in e-voting precincts, confirming our expectation that personal vote earning attributes, such as incumbency, matter more in districts with electronic voting than in districts with paper ballots.

The results are overall very consistent across the two analyses. Incumbent mayors performed significantly better when voting procedures reduced the costs of making independent choices at the ballot box, allowing them to cultivate a personal connection with their constituencies. The same is not true for candidates with a legislative background; electronic voting made them weaker in comparison to incumbent mayors. Candidates with larger personal resources can exploit the institutional environment created by the new ballot form, concentrating the campaign message around their personal figure, becoming much more independent from the fate of their own party.

## **The Influence of the Ballot Structure on Women Opportunities**

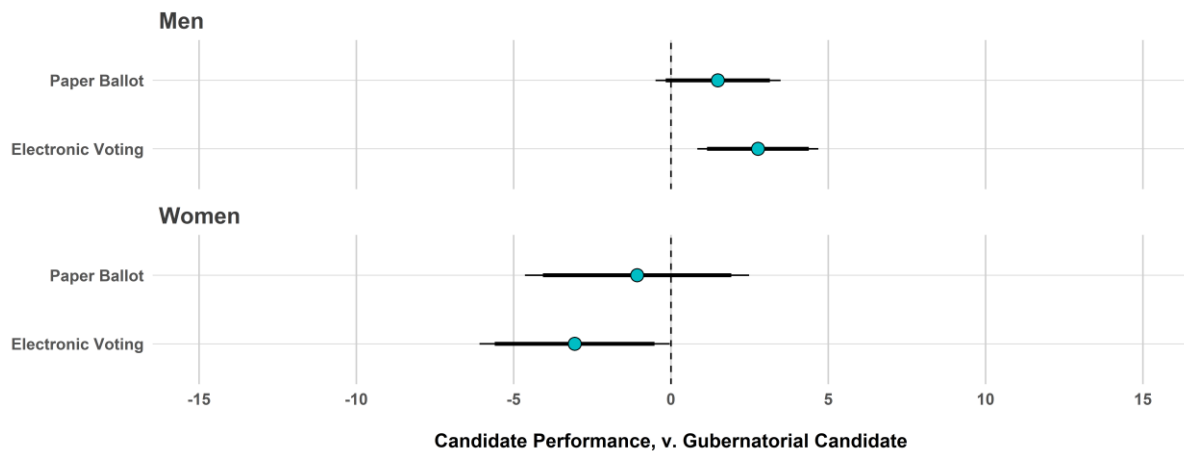
Unlike incumbents, women are on average relatively disadvantaged candidates. Evidence often shows that a portion of the electorate has (implicit or explicit) biases against women competing for public office, making them more likely to vote for a man instead of a woman. Over this period, the province-wide sample comprises 172 female mayoral candidates (14.5%), and the vast majority of them had no previous office experience, as defined in this chapter. There were only 11 female incumbents and 16 female legislators in a pool of 1,185 candidates.

Does electronic voting undermine the electoral chances of female candidates? Overall, model results present a relationship in the expected direction, but they are statistically weak.<sup>27</sup> Figure 4-4 presents model predictions showing the expected electoral performance of a mayoral candidate, relative to the gubernatorial candidate at the top of the ticket, based on their gender. Women competing under the electronic devices seem to present poorer electoral performances than women competing under partisan paper ballots. A female candidate competing under e-voting underperforms the gubernatorial candidate by 3.07 points, while an equivalent candidate is expected to underperform by only 1.08 points, but differences between women in each ballot type do not attain conventional levels of statistical difference.

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<sup>27</sup> Table II-4-5, in the Online Appendix, presents the empirical results. Models examine the effect of ballot forms on the electoral performance of a mayoral candidate, relative to the gubernatorial candidate at the top of the ticket; the second model, replicating the case selection in Table II-4-1, includes tickets with only one mayoral candidate.

**Figure 4-4. Expected Candidate Performance, Relative to the Gubernatorial Candidate, by Gender and Ballot Type (90% and 95% c.i.)**  
Based on Data from the Province of Salta, 2007-2019



Note: Model predictions based on model 1, in Table II-4-5, in the Online Appendix. Omitted variables, in their median values.

Women do, however, garner a smaller vote share under the electronic devices than men competing under the same procedures. The model expects that an average male candidate, holding all other covariates in their means, will overperform the gubernatorial candidate by 2.77 percentage points, while a female candidate will underperform by 3.07 points—a statistically significant 5.8-point gap. That gap when comparing male and female candidates competing in elections using paper ballots is smaller and does not attain conventional levels of statistical significance, suggesting that the new voting procedure puts women candidates in a more difficult environment. However, these results are not consistently strong across other model specifications, raising questions of robustness.

Women running for mayor underperform the average male candidate in Salta elections. While this gender difference might be the result of multiple factors in play, from campaign resources to experience, to the prevalence of misogynistic voters, what is clear is that women’s underperformance relative to men increases with e-voting. Overall, model results suggest that the use of a ballot form that undermines election coattails may additionally weaken the electoral performances of women competing for down-ballot offices, however the evidence is not conclusive, and these hypotheses deserve further examination.

## Conclusions

Ballot designs can reinforce the saliency of some information about parties and candidates. The design of the ballot can focus voters’ attention on the most important races (Nichols and Strizek 1995; Rusk 1970; Walker 1966). Party symbols and photographs placed on the ballot provide information commonly used by voters as a political heuristic (Lau and Redlawsk 2006; Conroy-Krutz et al. 2015). Whereas party logos are informational cues that may favor parties with higher campaign spending and more recognizable labels (Katz et al. 2011; Calvo et al. 2009), pictures of candidates convey information about age, gender, ethnicity and physical appearance that

favors more attractive candidates (Banducci et al. 2008) and increases ethnic voting by priming identity considerations (Moehler and Conroy-Krutz 2016). Our findings contribute to this body of research by showing that some ballot forms can reinforce the influence of candidate attributes on voters' decisions.

This chapter presented evidence of how ballot structures have implications for individual candidates in down-ballot races. In an environment where ballots diminish straight-ticket voting and party attachments are less influential, candidates will be more likely to depend on their personal attributes and reputation. In the opening example in this chapter, we suggested that local parties would fare better when coattails are weaker, because they can disassociate their campaign from the top of the ticket, and instead campaign on the personal reputation of their candidates. Consistent with this, we observe that, after the adoption of the electronic devices, personal vote earning attributes exert a stronger influence on election outcomes. For incumbents, this means they are even further advantaged at the polls. For women mayoral candidates, our results suggest that where personal vote earning attributes are more important, women may face a small penalty, earning slightly fewer votes than their male counterparts. Given the limited variation in the data, further research in a context with more women candidates is needed to understand the extent to which this relationship holds.

There are a large number of attributes from which voters derive ideas of a candidate's aptitude to be in office. In our analysis we are largely limited to examining the effects of their past political career and their gender. However, we may anticipate that the same type of ballot structure would increase the salience of other personal vote earning attributes such as race, ethnicity, national or local origin, or even charisma and personality. Future work should explore the propensity of ballot structures to advantage or penalize candidates based on these characteristics and attributes. Down-ballot candidates with enough name recognition may run more personalized campaigns, organized around their own figure, instead of running as part of a larger team, campaigning around a party brand. Likewise, local parties like ConVocación por San Isidro, introduced as the opening example of this chapter, may benefit from ballot forms that diminish coattail effects.

Such ballot forms can reduce the influence of national politics on the election of local officers, making it easier for candidates, parties and citizens to focus on local issues. Beyond this, either exacerbating or downplaying some candidate features, ballots may have significant implications for democracy overall. Making incumbents more powerful candidates, the ballot form may inadvertently undermine the competitiveness of local elections, creating a larger burden for potential challengers. And, by reinforcing the position of (gender, ethnic, or else) dominant elites, the ballot form may diminish the electoral opportunities of historically marginalized groups, making their incorporation to elected positions more difficult. Weakened political parties and less competitive elections are negative potential consequences for the consolidation of young democracies in an attempt to modernize voting procedures.



## Chapter 5

# The Decline of Territorial Machines: The Implications for Parties

Debates over national ballot reform resurfaced in Argentina in 2022. A coalition of representatives from opposition parties cosponsored a bill intended to replace the partisan paper ballot with a paper Australian ballot in national elections. One of the chief criticisms of the partisan paper ballot is that it places an outsized burden on political parties. Each party competing in national elections is responsible for printing their own ballots, distributing them to all voting centers, and monitoring the ballot supply at polling places on election day.

Adrián Pérez, former Secretary for Political Affairs (2015-2019) who pushed for ballot reform during his tenure, defended the adoption of an Australian ballot during the 2022 House committee hearings. He maintained that partisan ballots bent the elections in favor of major parties. Reflecting on his earlier efforts to reform the ballot, he recounted previous considerations: “The Electoral Court ... said there is a need to guarantee each individual voter’s right, so that she can vote for the party that she selected before arriving at the ballot box. And, for multiple different reasons, a partisan ballot did not guarantee this right: due to ballot stealing, due to the absence of party monitors, due to the post office not delivering the ballots in time, due to whatever reason. But certainly, voters in many cases could not vote for the chosen option.”<sup>28</sup>

On the same series of House hearings, Alejandro Tullio, former National Electoral Director (2001-2015), went further arguing that the burden the ballot design imposes on parties is unevenly distributed. “The uniformity of the electoral offer across the national geography is dependent on the economic and logistical ability of the political parties. It is true that [in national elections] the Post Office ... makes a first provision, to the extent that the Electoral Court tells it, of a certain number of ballots for all the polling stations. ... But that is not enough. ... We are not only talking about printing costs, but also incremental logistical costs ... fundamentally for parties. And the costs are not only budgetary, they are organizational costs, they are energies that parties must put into that, instead of campaigning and making their proposals known to the

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<sup>28</sup> Original quote: “La Cámara Nacional Electoral ... decía [que] hay que garantizar el derecho a cada elector de que pueda votar la oferta electoral que había elegido previamente a entrar al cuarto oscuro. Y esto con un sistema de boleta partidaria no estaba garantizado por distintas razones: por un problema de robo de boleta, porque faltaban fiscales, porque el correo en algún lugar no llegó con la distribución, por lo que fuera. Pero ciertamente [los] electores, en muchos casos, no podían votar la opción elegida.” Available at: <https://youtu.be/Tt7nkFjmKaw?t=1497>, accessed on May 26, 2022.

citizens.”<sup>29</sup> By contrast, the Australian ballot guarantees that all the options are available at the ballot box. Tullio pointed out that the Australian ballot “guarantees the voters that they will be able to choose whoever they want regardless of the logistical capacity of the party, and guarantees the parties a greater fairness in the competition.”<sup>30</sup>

This certainly rings true for the ballot reform in Salta. Parties with fewer resources and weaker logistical capacity were disproportionately disadvantaged when competing on partisan paper ballots. But, as we illustrate, the adoption of the electronic ballot changed the game.

Previous chapters explained how different ballot forms impose additional cost on voters and candidates. In this chapter, we turn to parties, arguing that ballot designs also impose various coordination and campaign costs on political parties. These additional costs ultimately inform the electoral geography of parties—that is, *where* they can garner votes and how their votes are distributed across the district.

## The Influence of Ballots on Campaign Strategies

Previous research shows that the geographical distribution of electoral constituencies can shape electoral outcomes and party strategies. Asymmetrical geographical distributions of preferences are associated with electoral biases. Democrats in the United States (Rodden 2010; Erikson 1972) as well as Laborists in the United Kingdom (Calvo and Rodden 2015) are, for example, significantly concentrated in cities; and larger majoritarian biases in election rules penalize their chances of electing representatives. This is not necessarily the effect of gerrymandered districts, but of the manner in which voters are located; as Gudgin and Taylor (1976: 14, emphasis in the original) said, “*any* division of an electorate into constituencies will have *some* political effect by the very nature of the problem.” Similar concentrations of voters and preferences have been documented in many other countries, and biases in the transformation of votes into seats are expected to be reflected in equivalent biases in the transformation of preferences into policies.

Geography can shape party strategies and campaigns as well. There is a geography of campaign contributions. Donor support bases in the U.S. are often clustered in highly-educated, wealthy urban areas (Gimpel et al. 2006), but their campaign contributions are often directed to races in competitive districts that might be hundreds or even thousands of kilometers away (Gimpel et al. 2008). There are also geographical constraints underlying parties’ electoral

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<sup>29</sup> “La universalidad de la oferta electoral en toda la geografía nacional está condicionada por la capacidad económica y logística de los partidos políticos. Es cierto que el Correo ... hace una primera distribución, en la medida que la Justicia le dice, [de] una determinada cantidad de boletas para todas las mesas electorales. ... Pero eso no alcanza. ... No solamente estamos hablando de costos de impresión, sino de costos logísticos incrementales ... fundamentalmente para los partidos políticos. Y los costos no son sólo financieros, son costos de organización, son energías que deben ponerse en eso, en lugar de hacer campaña y hacer conocer las propuestas a los ciudadanos.” Available at: <https://youtu.be/ZIBQ-9hvm0?t=10637>, accessed on May 26, 2022.

<sup>30</sup> Original quote: “La boleta única papel (BUP) asegura la integridad de la oferta electoral. ... Garantiza a los electores que van a poder escoger a quien deseen sin importar la capacidad logística de la agrupación, y a las agrupaciones una mayor equidad en la competencia”. Available at: <https://cenital.com/boleta-unica-ventajas-desventajas-y-las-reformas-adicionales/>, accessed on May 26, 2022.

performance. Leveraging a set of European democracies, Potter and Olivella (2015) presents evidence that parties are more likely to enter districts that are closer to other ones where the party fielded candidates. Harbers (2017), examining Mexican elections, shows that party support in one district increases the likelihood of party support nearby. And, more importantly for our purpose, geography seems to shape electioneering too; party campaigns target neighborhoods where strategists believe that party supporters are concentrated (Huckfeldt and Sprague 1992; Carty and Eagles 1999).

Parties and candidates have limited resources to campaign, thus developing an effective mobilization strategy is a fundamental challenge for any party organization. Candidates have limited time to spend knocking on voters' doors and canvassing. Parties have limited cash to print street banners and posters or to buy ads in the local media to advertise their names across the district territory. Party volunteers might provide some organizational means, for example lending places to set campaign offices. Regardless, parties need to devote large campaign efforts to establish a party network over an extended territory. Latner and McGann (2005) presents evidence from Israel and the Netherlands that, even in highly proportional institutional settings, party competition may develop within-district regional patterns, despite that an extra vote counts the same wherever it is won. Alles and his coauthors (2021), leveraging data from three decades of Colombian elections, show that such strategic considerations are driven by voting procedures. Effective party campaigns need to make careful decisions when allocating resources.

The printing and distribution of election ballots is one such campaign effort when parties are responsible for providing their own ballots. First, party organizations must bear the expense of printing paper ballots, consuming resources that could otherwise be used to cover the costs of campaign activities. Second, party organizations need to distribute the ballots to polling places across the department, sometimes located in polling places many kilometers apart. Third, parties need to make ballots available to the voters on election day; this requires being able to monitor polling places, in order to ensure that they do not run out of ballots, and that rivals do not steal or sabotage them. While the first issue imposes a budgetary burden on parties, solving the latter two demand a well-established party machine. Moreover, the fewer the campaign resources and the lesser-known the party brand, the more acute the burdens.

Parties and candidates face strong incentives to concentrate campaign efforts in the most efficient manner; campaigning everywhere could be a wasted effort if parties cannot assure that the ballots will be available at every voting center. In a situation like this, parties may opt to concentrate their campaign efforts on key locations, where they can rely on local networks to distribute ballots and monitor polling places, rather than spreading them across the entire district.

The adoption of electronic voting transfers most of these costs to the electoral authority or eliminates them entirely. First, electronic voting eliminates the financial cost associated with the printing and distribution of ballots. Second, the electoral authority is entirely responsible for the allocation of devices in every polling place, ensuring that all parties and candidates are available options at the ballot box. And finally, the risk of sabotage is minimal: there is no equivalent of stealing ballots of other parties when an electronic device is in place. As the adoption of e-voting effectively transfers the burden of ballot provision to the electoral authority, and significantly reduces the costs associated with monitoring voting centers, campaign efforts are less constrained by the geographical scope of party machines. So, parties can expand their campaigns to areas previously dominated by other factions or parties, resulting in a larger

dispersion of the electoral support. Consequently, we expect to observe support for the following hypothesis:

Logistics Hypothesis. Parties competing under electronic devices will present a more geographically dispersed electoral base.

## Measuring Vote Concentration in Legislative Elections

We employ a cross-sectional analysis leveraging department-party level data to examine the effect of ballot type on the geographical concentration of party votes. We examine 552 party lists competing for province House seats and 392 party lists competing for province Senate seats, distributed over six election cycles from 2009 to 2019. Parties in the sample ran in districts using paper ballots in the first two cycles—i.e., 2009 and 2011; and using electronic devices since the 2013 renovation. As we detailed in Chapter 2, races in four departments (i.e., Capital, La Caldera, Metán, Orán) used both voting procedures simultaneously in 2011: they are thus excluded from the sample to provide a clear contrast between treatments.

To capture the influence of the voting procedure, we estimated a set of Beta regression models. The dependent variable can only assume values in the unit interval:  $Gini_{pk} \in [0,1]$  for all  $p$  and  $k$ ; and a Beta distribution accommodates to a variable of such characteristics (Cribari-Neto and Zeileis 2010; Ferrari and Cribari-Neto 2004).

$$y_{pk} = Gini_{pk} \sim Beta(\mu_{pk}, \varphi)$$

Each observation in the data is a department-level party observation. The term  $Gini_i$  captures the vote concentration of party  $p$  in department  $k$ ; and it is distributed over a beta density with mean  $\mu_{pk}$  and precision  $\varphi$ . The term  $g(\cdot)$  is a strictly monotonic link function, which may adopt multiple forms—models were estimated using a logit link.

$$\mu_{pk} = g(\eta_{pk}) = \text{logit}^{-1}(\eta_{pk})$$

$$\eta_{pk} = X_{ij}\beta + \varepsilon_{ij}$$

$$X_{ij}\beta = \alpha + \beta_1 eVot_{ij} + \beta_2 votes_{ij} + \beta_3 votes_{ij}^2 + \beta_4 eVot_{ij} * votes_{ij} + \beta Z_{ij}$$

The term  $\eta_{pk}$  is a linear predictor introducing a set of explanatory variables in the statistical model:  $\beta$  are a set of regression coefficients capturing the effect of some  $X$  vector of independent party-level variables on  $Gini_{pk}$ , the  $Z$  vector comprises a set of potentially intervening factors, and  $\varepsilon_{pk}$  is an error term. The parameter  $\varphi$  is a precision parameter: it is left constant in the model estimation.

The dependent variable,  $Gini_{pk}$ , is a measure of the geographical concentration of party votes, which following previous research (Bochsler 2010; Calvo and Rodden 2015; Jones and Mainwaring 2003; Morgenstern et al. 2009; Alles et al. 2021), is captured by a Gini Index. We

calculated the Gini Index for each party list  $p$ , in the  $k$ th department, in the  $t$ th election cycle.<sup>31</sup> The index equals 0 when the distribution of partisan votes across a department's ballot boxes mirrors the exact geographical distribution of valid votes. The measure approaches 1 when all the votes of a given party are concentrated in a single voting booth. The median value in the sample is 0.282, and three-fourth of the observations fall in a score range between 0.112 and 0.533.<sup>32</sup>

The  $X$  vector comprises a set of independent and control variables. The main independent variable in the models is the type of ballot: elections using electronic voting are coded 1, and 0 when using paper ballots. The most important control in the equation is the vote percentage: larger parties tend to show a more even geographical distribution. Most of the election rules other than the ballot form remained constant all over the period; district magnitude, which varies by department only in House elections, is a covariate in the equation. The models control for potentially intervening institutional and sociodemographic factors—i.e., population density, area, number of voting booths, urbanization, educational attainment, and poverty.

## The Geographical Implications of Ballot Reform

The geographical concentration of party votes may vary considerably across departments. The same party may present high levels of vote concentration in some areas of the province, while showing a much more homogeneous distribution of votes in others. Although a portion of that variation is associated with the party performance, given that small parties tend to show more concentrated vote patterns, ballot forms that hand the ballot provision over parties exacerbate this type of difference. Figure 5-1 illustrates these regional contrasts on two parties with similar overall performances in 2009, two years before the reform implementation, when every polling place in the province used paper ballots.

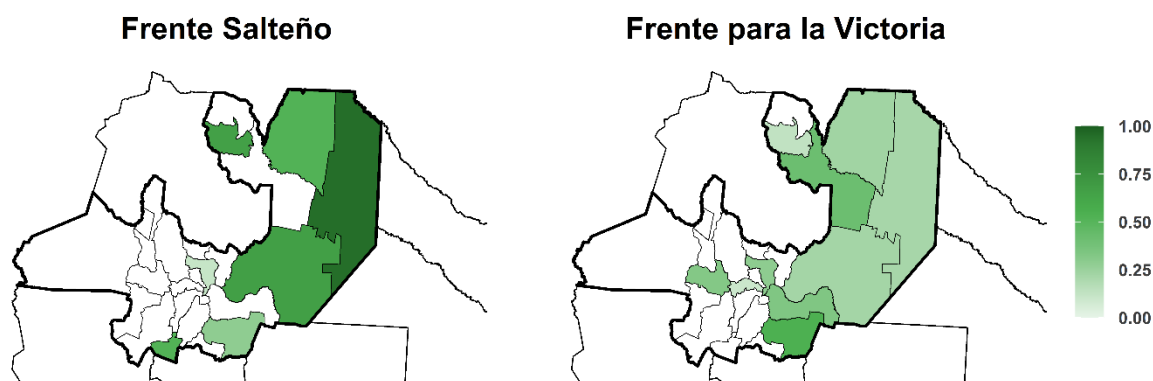
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<sup>31</sup> The Gini Index compares the distribution of vote shares across ballot boxes, and it is calculated based on about 223,500 booth-level party observations, over six election cycles, between 2009 and 2019.

<sup>32</sup> Alternatively, the G-Index is a department-party level measure of vote concentration (Peres da Silva and Davidian 2013; Avelino et al. 2016); empirical results using the G-Index instead of Gini are consistent with those reported for the main models.

**Figure 5-1. Vote Concentration of Two (selected) Parties, competing in Provincial House Elections in Salta**

Frente para la Victoria (Peronist Party) and Frente Salteño by Department: Province of Salta, 2009



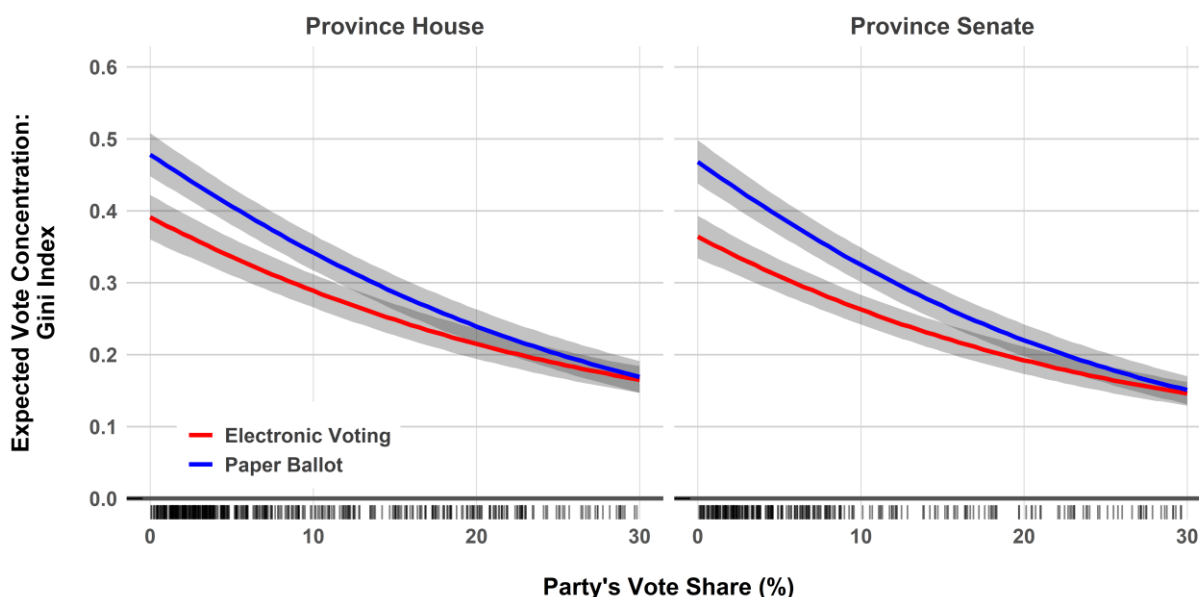
Source: Tile map by INDEC <<https://www.indec.gov.ar/indec/web/Institucional-Indec-Codgeo>>.

The left panel presents the department-level vote concentration of the Frente Salteño, a party that ran in 7 departments, winning three House seats and combining 11.8% of province votes. Party votes were fairly dispersed in the Capital Department, and to a lesser degree, in Rosario de la Frontera Department: the party's Gini Index was 0.115 and 0.288, respectively. However, in other departments, the party performance was heavily concentrated in a limited number of places. The party's Gini Index in Anta Department, where the party attracted a respectable 12.2% of the votes, was an outstanding 0.668; and the score was above 0.500 in all the remaining departments. By contrast, the right-hand presents a party with a very similar overall performance, but much more homogeneous vote distributions. The Frente para la Victoria (Peronist Party) ran in 10 departments, and it got four House seats thanks to 10.2% of province votes. Party votes were fairly dispersed in Chicoana and Iruya departments, with concentration scores below 0.150. The score only rose above 0.500 in one department, Rosario de la Frontera.

Evidence shows that the ballot form is strongly linked to the geographical concentration of votes. Higher concentrations are more likely when parties need to print and distribute their own ballots.<sup>33</sup> Legislative elections under paper ballots presented higher levels of geographical concentration of votes compared to elections using electronic devices. This effect is, nevertheless, conditional to the party size: geographical concentration is, regardless of the voting procedure, roughly the same among parties garnering 20% of the votes or more, while the use of electronic voting makes a substantive difference for small parties.

<sup>33</sup> Table II-5-1, in the Online Appendix, presents the empirical results. Models separately examine two samples: province House and province Senate elections.

**Figure 5-2. Expected Gini Index in Provincial House and Senate Elections, by Ballot Type and Electoral Support (95% c.i.)**  
Based on Data from the Province of Salta, 2009-2019



Note: Model predictions based on models 2 and 4, in Table II-5-1, in the Online Appendix. Omitted variables, in their median values.

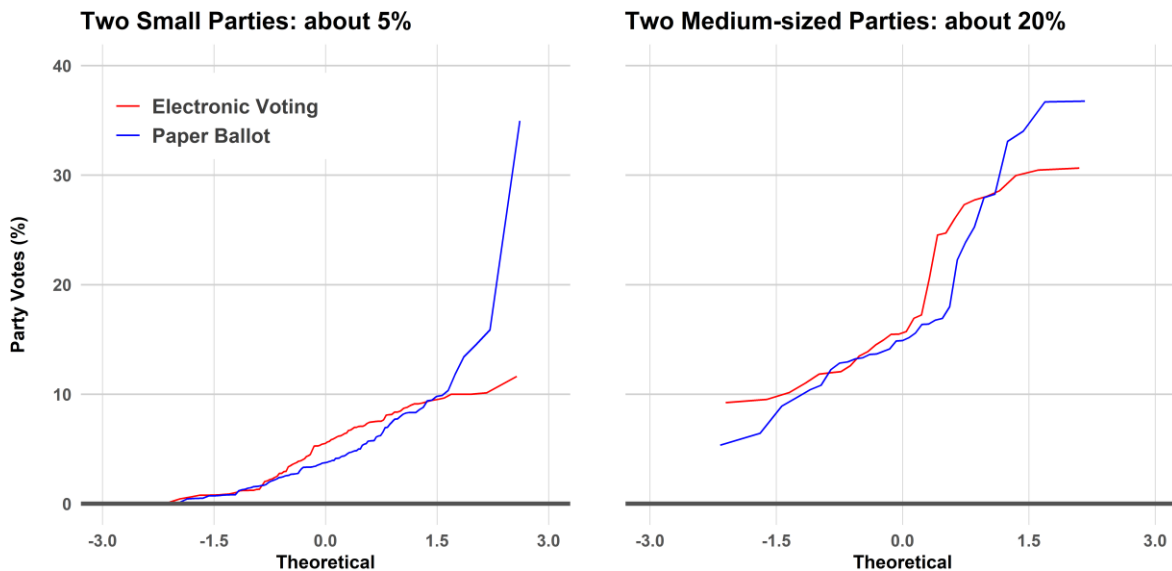
Figure 5-2 reports the expected level of geographical concentration of votes for different ballot forms and different party vote's shares, holding other variables in their median values. First, factions competing in elections using electronic devices consistently attracted votes in a more even distribution throughout the department. The Gini Index is expected to fall from 0.406 to 0.336, for a party competing in House elections that gets 5% of the votes; this difference is statistically significant. Additionally, when comparing House and Senate races, the model results are very consistent. The concentration is expected to fall from 0.392 to 0.309, for a senatorial candidate who gets the same share of votes.

Secondly, parties with large electoral support most often have a geographically extended base and consequently, they are expected to present a lower Gini score. Yet, the ballot form mediates this relationship: concentration differences between large and small parties were larger under paper ballots. The expected geographical concentration falls from 0.406 to 0.239 (i.e., -0.167) when a party competing in House elections moves from 5% to 20% of the votes before the reform. Very similar changes are expected for senatorial races (from 0.392 to 0.220). After the adoption of electronic voting, the difference in vote concentration between parties of different sizes declined considerably. In such cases, the index score falls from 0.336 to 0.215 (i.e., -0.121), when comparing a party of 5% to another one of 20% of the votes. In sum, the use of electronic voting is heavily affecting the geographical distribution of support of small parties. For parties that garner about 20% of the votes, procedures do not make any difference in the geographical concentration of votes.

Similar effects were observed after the adoption of an Australian ballot in Colombia (see Alles et al. 2021), though the magnitude of the transformation was smaller in the case of Salta. Before

the Colombian ballot reform, the electoral support of party factions presented significantly higher levels of geographical concentration than their peers in Salta, thus the space for change was larger as well. Nevertheless, the overall pattern between the outcomes of both reforms is considerably similar. Decreasing the logistic burden of the election is associated with more even distributions of votes, and such changes are larger among small parties.

**Figure 5-3. Distribution of Votes of Four (selected) Parties, competing in Provincial House Elections, by Voting Procedure and Party Size**  
Selected Departments in the Province of Salta, 2009-2015



Note: The left-hand panel presents the distribution of votes of Salta Somos Todos, in the Anta Department in 2009 (in blue); and of Partido Obrero, in the Metán Department in 2013 (red). The right-hand panel presents the distribution of votes of Partido de la Victoria, in the Santa Victoria Department in 2011 (blue); and of Partido Justicialista, in La Caldera Department in 2015 (red).

The QQ plot displayed in Figure 5-3 illustrates the substantive implications of changes in the vote concentration, by representing how party votes deviate from a uniform vote distribution. The x-axis plots the theoretical quantile values of the standard normal distribution. The y-axis plots the corresponding quantile values of the party votes in the actual data. A straight horizontal line would represent a party that is getting the same vote share in every voting booth—i.e., a concentration index of 0. A straight diagonal instead would represent a party with a normally distributed vote concentration. Each panel compares the distribution of votes by ballot box for two pairs of parties competing in House elections: a party competing under paper ballots in blue and a party competing under electronic devices in red. The parties represented in the figures were selected because they fall almost exactly in the model predictions, offering a clear picture of the ballot effect on comparable parties.

The left-hand panel of Figure 5-3 presents the vote distribution for two small parties competing in districts with the same magnitude (three seats) and the same number of competitors (nine). We chose to feature these two parties as examples because their electoral fortunes closely align with our model predictions of how the vote concentration will vary depending on the ballot



type. This makes them great illustrations of how two alternative distributions of votes look. Salta Somos Todos (blue line), in Anta Department in 2009, competed under a paper ballot and its electoral fortunes best represent the model baseline for the control group: a geographical concentration index score (the DV) of 0.413, getting roughly 4.73% of votes. The vote distribution is highly skewed, with a large share of its votes coming from a small number of ballot boxes. This relationship is apparent on the right end of the plot, where the line becomes almost perfectly vertical. This narrow concentration of votes is expected for small parties using the partisan paper ballot because small parties like Salta Somos Todos cannot afford to distribute ballots to all of the voting booths in the district.

Contrast this with a similar party, the Partido Obrero (red line), in the Metán Department that used an electronic ballot in 2013. The Partido Obrero had a geographical concentration index score of 0.342 and attained 5.27% of votes. The distribution of votes for Partido Obrero more closely approximates a normal distribution, indicating that their vote shares were more evenly distributed across voting booths. Just like Salta Somos Todos, Partido Obrero cannot afford to distribute ballots across all of the voting centers in their district. But, when using electronic devices, they do not have to. Instead, the Partido Obrero automatically appears on every ballot box. As a result, they can garner votes in each voting center across the entire district.

The right-hand panel presents two medium-sized parties competing in districts with the same magnitude (one seat) and the same number of competing parties (five). In this case, both parties are large enough to have the necessary resources to print and provide ballots across the entire district. For this reason, their distribution of votes should not be significantly different when using different ballot types. Indeed, in Figure 5-3 we observe that the differences between vote distributions for the party using electronic ballots compared to the party using the partisan paper ballot were significantly smaller than the differences observed in the case of small parties.

Partido de la Victoria (blue line), in the Santa Victoria Department, used paper ballots in 2011, and represents the model baseline in this case. An index score of 0.250 is fairly close to the model expectation for a party getting 18.00% of the votes. Notably, this distribution is very similar to the model prediction for similar-sized parties using the electronic ballot. Consider next the Partido Justicialista (red line), in La Caldera Department, which used the electronic ballot in 2015. It provides an ideal case for illustrating the treatment effect for medium parties. An index score of 0.217 is about the expectation for 18.41% of the votes. In both cases the distribution of votes closely approximates the normal, regardless of the ballot type. Whereas the distribution of votes for small parties is sensitive to the logistics of the provision of ballots, larger parties with ample resources are less so.

## Conclusions

Geography constrains the electoral performance of parties. Parties are more likely to compete in districts nearby other ones where it is already competing (Potter and Olivella 2015), and their support in one district is linked to their support in nearby districts (Harbers 2017). Candidates and parties face powerful incentives to carefully consider where campaign efforts will be deployed. Although major parties often have resources and networks to organize large campaigns, even large parties benefit from targeting areas where supporters are concentrated (Huckfeldt and Sprague 1992; Carty and Eagles 1999). The influence of geography on party strategies and campaigns is, however, mediated by electoral institutions, and in particular, ballots can reinforce or weaken such incentives (Alles et al. 2021).

The results in this chapter contribute to this body of research by providing evidence of how the ballot structure shapes the geographical distribution of votes. Experienced electoral officers, as mentioned in the chapter introduction, indicate that the logistics of the partisan paper ballots create an uneven electoral field, disproportionately harming small parties. The printing and distribution of ballots constrain the campaign strategies of parties, which face incentives to concentrate electioneering efforts in territories where they can call on local networks. After the adoption of electronic devices, the options that voters find at the ballot box are no longer conditional on party resources. Instead, candidates can count on their name being on the ballot across the entire district when they design their electoral campaigns. Access to the ballot district-wide levels the field for small parties, and this might be especially true when districts encompass large territories, such as an entire province. Some parties may still choose to focus their campaign's resources on their traditional fiefdoms, where they can rely on established local networks to turn out the votes. Others may play a different game, expanding their campaigns to new territories, resulting in a more even distribution of votes.

Beyond electoral implications, these changes may also have implications for legislative behavior once in office. Electoral competition exerts pressures on representatives to fit with their constituents (Mayhew 1974), but the actual composition of that constituency differs depending on the geographical distribution of their votes. Parties and legislators elected by a narrow geographic portion of the district will likely represent a relatively slim set of policy preferences. This is because they do not need to care for the entire district, but only for the bailiwick where their electorate is concentrated. A new ballot form, even under the exact same electoral institutions, can transform the representative connection between legislators and voters, from one where officials are focused on small constituencies, to one where they are attentive to more overarching interests and preferences across the district.

## Chapter 6

# The Consequences of Weakened Gubernatorial Coattails: The Implications for Small Parties

Despite relatively high district magnitudes, small parties campaigning in provincial elections across Argentina sometimes struggle to gain a foothold in legislative elections. It is particularly difficult for parties without strong gubernatorial candidates to attract votes to the legislative list. Major parties tend to dominate legislative elections in years where there is a gubernatorial race on the ballot. But, in 2015, the Partido Obrero secured a legislative seat in the Capital District—an unusual victory for the PO during a gubernatorial election year.

To vote for a small party in the legislative election, voters must either cast a vote for a non-viable gubernatorial candidate or sink the cost of splitting their ballot. In Argentina, where partisan paper ballots are pervasive, this is an uphill battle for small parties. In stark contrast to the partisan paper ballots, we showed in Chapter 3 that the new electronic ballot used all across Salta in 2015 reduced the cost of split ticket voting—making it easier to vote for different parties in different races. Parties in Salta recognized this potential advantage right away. Interviews conducted immediately after the partial implementation in 2011 indicated that campaigners recognized that the new electronic ballot facilitates split ticket voting (Pomares et al. 2011). But, as suggested above, some parties may be better situated to capitalize on this reform; others parties may even be significantly hurt by the reform.

In this chapter, we examine whether some parties are systematically advantaged (or disadvantaged) by the new ballot structure.

### Ballot Form and Electoral Coordination

Ballot features influence electoral outcomes, however this effect could be uneven across parties. Some features may benefit some parties or candidates to the detriment of others (Calvo et al. 2009; Card and Moretti 2007; Herron and Wand 2007). Information cues, such as party logos, candidate photos, or organization of the ballot, inform voters' decisions (Tchintian 2018). For instance, party-centric shortcuts favor parties with bigger treasure chests and more recognizable labels and candidates (Katz et al. 2011). Some ballot structures may cause confusion for voters, inducing more frequent voting mistakes among particular groups of voters—ultimately hurting some parties more than others (Tomz and Van Houweling 2003; Knack and Kropf 2003). We likewise anticipate that ballots that facilitate split-ticket voting will benefit some parties more than others.

Strategic voting theory offers insight into which candidates or parties will see the largest uptick resulting from an increase in vote-splitting due to the ballot structure. Cox (1997) argues that voters refrain from voting for their most preferred candidate when they are unlikely to be elected, voting instead for their most preferred viable candidate to avoid wasting their vote. In concurrent elections, multiple candidates vying for different positions compete under the same party label, but each race is often governed by a different set of electoral rules. Whereas a party may not have a viable candidate competing in the executive race owing to the nature of the single member district, candidates competing under the same party label may be competitive in

the legislative election where multiple candidates win a seat in office in the same district. Consequently, voters may be compelled to cast a strategic vote in the executive election—supporting a viable candidate—and a sincere vote in the legislative election where their preferred party has a better chance at securing a seat.

The likelihood that a voter will split their ballot to cast a strategic vote in the executive election and a sincere vote in the legislative election is shaped by both, the likelihood that their vote makes a difference and the effort required to split the vote. If the cost of ballot splitting is high—e.g., if they have to manually cut the ballot—voters may be less likely to split their ballot if they are uncertain it will make a difference. But, when ballot splitting is costless—as with the electronic ballot—voters may be willing to split their ballot, even if the payoff is unclear.

*Coordination Hypothesis.* The use of the electronic ballot will lead to a greater defection from gubernatorial candidates among smaller political parties.

Overall, the strategic voting literature indicates that the most popular/viable executive candidates will benefit from the strategic defection of voters from small parties (Hogan 2005). We anticipate this effect should be magnified when split-ticket voting is made easier—ultimately benefiting large parties in gubernatorial elections where only two parties are viable, and benefiting small parties in legislative elections where they have a realistic chance of winning a seat.

## Estimating the Impact of the Ballot on Electoral Coordination

Building on the empirical strategy used in Chapter 3, we return to our quasi-experimental design, wherein we analyze data from the incremental implementation of the electronic ballot across three election periods. Here too, we leverage data from the Capital Department and rely on the Coarsened Exact matched sample introduced in Chapter 3. As in Chapter 3, the results are consistent regardless of the matching threshold. In this analysis we use party-level data, thus our sample comprises a total of 23 parties competing across 54 precincts, throughout three election cycles.

Each observation in the data is a precinct-level party observation, from the matched sample. Given that different parties compete in each election, we cannot use a party-level difference-in-differences (DiD) approach to examine the relationship between ballot form and strategic voting. Instead, we estimated linear models for each election year.

$$y_{pi} = House_{pi} \sim N(X_{pi}\beta, \sigma^2)$$

$$X_{it}\beta = \alpha + \beta_T T_i + \beta_p Party_{pi} + \beta_{Tp} Party_{pi} * T_i$$

The term  $House_{pi}$  captures the strength of the legislative ticket of a party. The term  $T$  is a dummy variable that captures possible differences between the treatment and control groups in

a given year:  $T = 1$  for the treated group. Each running party, captured by a dummy variable, is interacted with by the treatment condition.<sup>34</sup>

The dependent variable,  $House_{pi}$ , is a measure of the relative performance of the legislative ticket in comparison to the gubernatorial candidate, calculated for each party list  $p$ , in the  $i$ th precinct, in the  $t$ th election cycle—the score is positive when the legislative ticket outperformed the gubernatorial candidate. Although the possible values of the variable go from -100 to 100, the observed values in the matched sample go from -13.2 to 10.0, and the median value in the matched sample is 0.08.

## The Influence of the Ballot Structure on Electoral Coordination

The provincial Chamber of Deputies (or lower House) is a 60-member body, elected in department-wide districts of different magnitudes. The Capital Department, the largest electoral district, is represented by 19 legislators in the Salta House. Deputies serve for four years and are elected using partial renovation. Every four years nine deputies are elected concurrent with the gubernatorial election. The remaining 10 deputies (and the department's senator) are elected in the midterm cycle. Due to its relatively large magnitude, elections in the district have been significantly fragmented—parties rarely get more than 25% of the votes. However, the major gubernatorial candidates are often joined by multiple legislative tickets, reflecting the party composition of their electoral fronts.

The 2007 election was the most competitive gubernatorial race in the sample. The three-term incumbent governor, Juan Carlos Romero, was term-limited, and two candidates emerged as the most prominent competitors to succeed him, each of them representing different factions of the Peronist Party: Walter Wayar and Juan Manuel Urtubey. The gubernatorial election resulted in a very tight race, in which Urtubey prevailed by about six thousand votes, only 1.2% of the province votes.

The competitive environment created strong pressures for electoral coordination among voters. Looking at the election results in the Capital Department, such incentives were clearly at work. Both Wayar (PJ) and Urtubey (FPV-PRS) performed significantly better than their legislative ticket, by 5.7 and 8.7 points, respectively, indicating that many voters voted strategically, defecting from hopeless gubernatorial candidates, but still supporting the legislative ticket of these third parties.<sup>35</sup> Voters of three parties significantly engaged in this strategic defection: the legislative ticket of Partido Obrero, Propuesta Salteña, and Concertación Salteña outperformed

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<sup>34</sup> The dependent variable,  $House_{pi}$ , is a measure of the relative performance of the legislative ticket in comparison to the gubernatorial candidate of a given party, scaled over the precinct valid votes.

$$House_{pi} = \frac{(D_{pi} - G_{pi})}{\sum_{p=1}^n G_{pi}} * 100$$

We calculated the score for each party list  $p$ , in the  $i$ th precinct, in the  $t$ th election cycle. The score is positive when the legislative ticket outperformed the gubernatorial candidate: when  $House_{pi} = 1$ , the slate of representative candidates garnered one percentage point (of the overall valid votes) more than the gubernatorial candidate.

<sup>35</sup> Table II-6-1, in the Online Appendix, presents the empirical results.

the gubernatorial ticket by 0.6% to 1.8%. As expected, voters in treatment and control groups did not differ, when all the precincts used the same voting procedures.

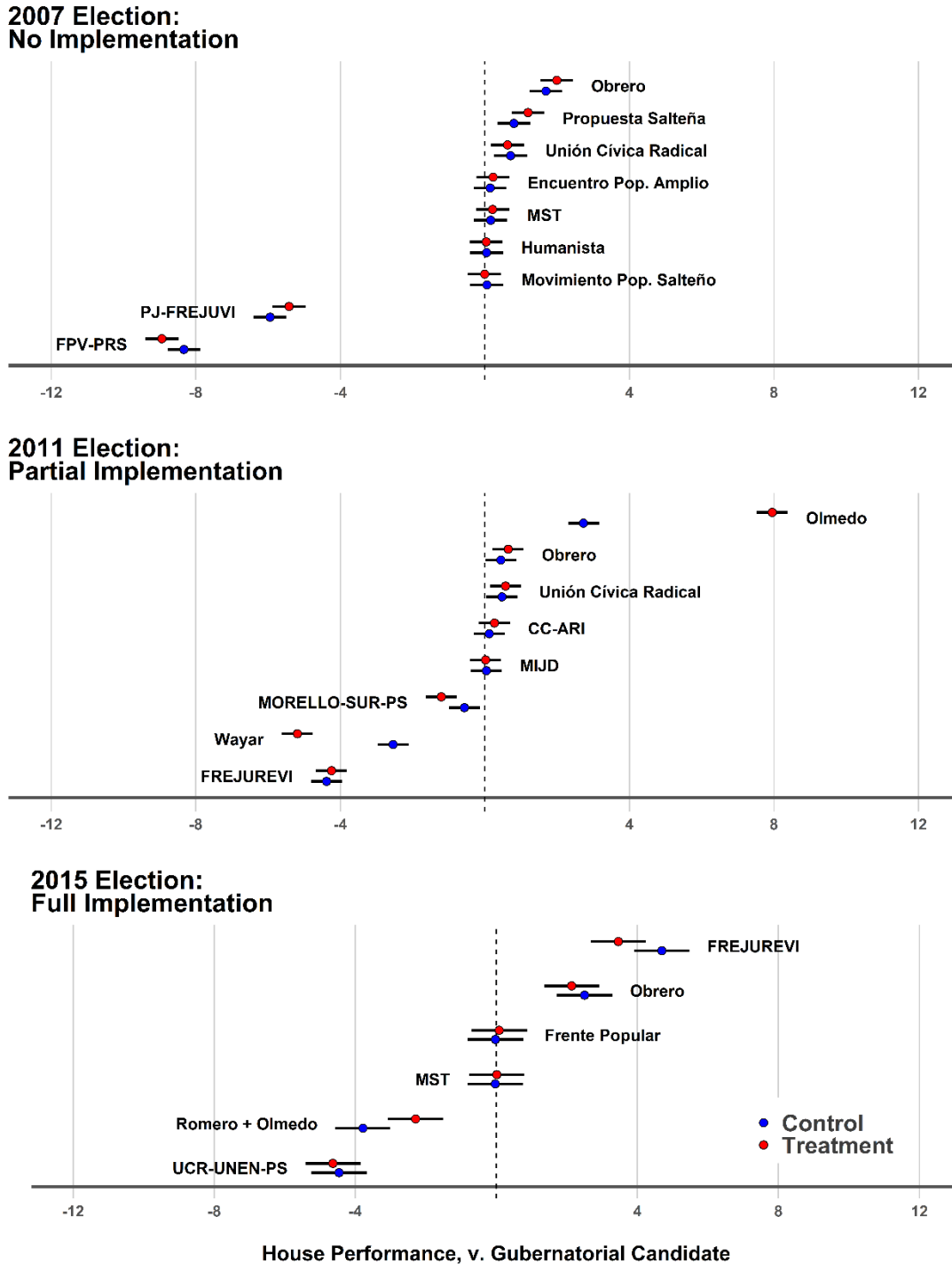
The remaining two elections were much less competitive, hence the pressures for electoral coordination were much smaller. Governor Urtubey ran for reelection in 2011, competing against Alfredo Olmedo, a first-term House representative, with previous experience as a provincial senator representing the Anta Department; and rematching Walter Wayar, who had been elected House representative in the midterm election cycle. Differently to the previous election, this time Urtubey won by a landslide: he obtained 59.6% of the province votes, while Olmedo ended in a distant second place, with only 25.1%. Wayar finished in third place, with only 8.5%, losing about 182 thousand votes in four years.<sup>36</sup>

Election results in the Capital Department show that Urtubey (FREJUREVI) and Wayar again performed significantly better than their legislative ticket, by 4.5 and 4.0 points, respectively; and to a lesser degree, a small party candidate, Carlos Morello, did it too. Instead, despite being the strongest challenger in the race, Olmedo significantly underperformed the legislative ticket, by an average of 5.2 points. Voters of another two parties, Partido Obrero and Unión Cívica Radical, seem to have strategically defected from their gubernatorial candidates as well, though results are weaker. Only the two smallest parties in the race (MIJD and CC-ARI), both winning less than 1% of the department vote share, did not see an uptick in split tickets; it is likely that, with very little uncertainty (and hope) about their chances of securing enough votes to win a seat in the legislature, they only kept their most committed voters.

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<sup>36</sup> Pollsters anticipated a comfortable advantage of Urtubey over his closest competitors. The polls were reported in *Infobae*, "Salta: las últimas encuestas otorgaban una cómoda victoria para Urtubey," April 10, 2011. Available at: <http://www.infobae.com/c574779>, accessed on May 7, 2016.

**Figure 6-1. Expected House-Gubernatorial Vote Margin, by Party, Implementation Stage and Treatment Group (84% c.i.)**  
 Based on Data from the Capital Department, 2007-2015



Note: Model predictions based on models 2, 4 and 6, in Table II-6-1, in the Online Appendix. Omitted variables, in their median values.

Our expectation, building on the strategic voting theory, was that the top gubernatorial candidates in the race would attract more votes than their legislative ticket and that this effect should be significantly more pronounced in precincts using electronic devices, given that splitting the ballot became less costly. Interestingly, the voters of some parties did exploit the opportunities created by the ballot form and split their tickets significantly more often in precincts using electronic devices, in particular, voters of two candidates: Olmedo and Wayar. There was a statistically significant increase in the share of split tickets for both candidates in precincts using electronic voting, and the size of the effect was substantial.

That said, the data do not show as clear of a pattern as anticipated. Figure 6-1 presents the expected margin of the legislative ticket in comparison to the gubernatorial candidate. The top gubernatorial candidates were not particularly favored by electronic voting. Urtubey (FREJUREVI) did not perform differently in one type of precinct in comparison to the other. Olmedo, by contrast, won fewer votes than did his tandem legislative lists, and such differences were even larger in precincts using electronic devices. Olmedo underperformed his legislative candidates by about 2.7 percentage points among voters using paper ballots, while he underperformed them by 8.0 points in precincts with e-voting. Put differently, the gap between gubernatorial and legislative candidates was about three times larger when electronic voting was in place.

The gubernatorial candidates of smaller parties were not particularly hurt by electronic voting either. Instead, not only did voters not defect from Wayar, but they embraced him even more in precincts using electronic voting. Wayar won 2.5 percentage points more votes than his party's legislative list among voters using paper ballots, while he won 5.2 points more in precincts using electronic devices—i.e., in precincts with e-voting, the vote split in favor of the gubernatorial ticket was about twice as large. Voters of the remaining four parties were expected to defect from the gubernatorial candidates more often in precincts using electronic voting as well, but they did not perform differently in one in comparison to the other.

The results do nevertheless show that when making discrete choices is easier, smaller parties may develop independent campaign strategies for each office at stake. In this institutional environment, smaller parties are able to (more or less overtly) message their approval of splitting the ballot in favor of the most viable candidates, in an attempt to avoid being dragged down by the most important candidates at the top of the ticket. This is reflected in how the vote-splitting pattern observed in precincts using paper ballots was exacerbated in e-voting ones. Overall, the candidates who did better than the legislative ticket in the former, overperformed by even larger margins in the latter, and vice versa.

The results may also be influenced by the fact that the 2019 election was not very competitive. Governor Urtubey ran for a third and last term in 2015, competing against the then-senator and former three-term governor Juan Carlos Romero, joining forces with the former gubernatorial candidate Alfredo Olmedo as his running-mate. Although the election was closer than four years before, Urtubey defeated Romero by a sizable margin, 47.2% v. 33.7%, while Partido Obrero finished in a distant third place with 7.3% of the province votes.

Election results in the Capital Department show that Romero and Miguel Nanni (UCR-UNEN-PS) performed significantly better than their legislative ticket, by 3.0 and 4.5 points, respectively. Instead, despite being the incumbent governor and front-runner in the race, this time Urtubey significantly underperformed the legislative ticket, by an average of 4.1 points. Voters of Partido Obrero kept the same pattern of strategically defecting from their gubernatorial candidate: the



slate of legislative candidates bested Claudio del Plá by an average of 2.3 points. Similar to the model results from the first election in the data, there were no statistically significant differences between treatment and control groups in the last sample, when all the voters used the same voting procedure. Analyses of the 2007 and 2015 elections indicate that the party differences observed in 2011 were not a product of underlying idiosyncratic conditions between groups, but evidence of the effects of the ballot form.

Overall, evidence indicates that parties can exploit the opportunities created by the design of voting procedures, and the examples of Wayar and Olmedo in 2011 point out that voting swings of 3 to 5 points are entirely in the realm of possibility.

Are the effects of the ballot form on vote splitting large enough to have electoral implications? In the appropriate “voting region,” a variation of half a percentage point may make a huge difference for the opportunities of getting parliamentary representation. Parties need about 6.3% of the votes to get a seat in a district like the one examined in this chapter—an extra half a percentage point increases about 40% of the chances of getting that seat.<sup>37</sup> For a small party, centering the campaign efforts around the legislative ticket is more likely a dominant strategy the larger the district magnitude.

The performance of Partido Obrero (PO) illustrates this point. Election after election, the party’s legislative ticket attracted more votes than the gubernatorial candidate in the Capital Department—on average, the legislative ticket garnered 1.3 percentage points more. The voting device may increase that gap by another half percentage point, significantly shaping the chances of getting elected. One seat is not trivial. There are only nine seats up for grabs in the district. All the remaining House districts have magnitudes from one to three seats, making the Capital Department the only place where a small party may obtain legislative representation.

## Conclusions

The evidence offered in this chapter provides some insights into how parties are differentially affected by changes in the ballot structure. Although there were not observable voting differences in every party, in some cases the ballot form was associated with 3- to 5-point gaps, indicating that the opportunities for legislative parties to run campaigns relatively independent from the gubernatorial election grew considerably thanks to the adoption of e-voting. The ballot reform created new opportunities for small parties.

The Partido Obrero illustrates how the shift away from partisan paper ballots may have important electoral implications in settings where the effective vote threshold to win a seat is low. In Argentina, for example, multiple provinces with high district magnitudes, which decreases the effective threshold, have piloted electronic voting devices or introduced paper Australian ballots. Our findings indicate that these ballot reforms may manufacture opportunities for small parties to win seats by facilitating ballot splitting.

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<sup>37</sup> Appendix III presents the results of a simulation of the threshold that parties need to reach to get a first seat, in an election of the characteristics of the one examined in this chapter: a district magnitude of 9 seats, with a 5% formal vote threshold, and using the D’Hondt formula to allocate seats.

However, as we can only examine the partial implementation of the ballot reform for one legislative election, we are limited in our ability to offer more generalizable conclusions. Future research should further consider the differential effects of ballot reforms across different political parties, in particular looking at closely competitive elections, in which the incentives for electoral coordination are high.

## Chapter 7

# Conclusions

Ballot designs have critical implications for representation. Controversies around voting procedures in the U.S. in recent decades have commanded considerable attention from scholars, media, and politicians (Beaulieu 2014, 2016; Bentele and O'Brien 2013; Engstrom and Roberts 2020; Hicks et al. 2015). Yet, we know far less about the consequences of ballot reforms outside the U.S. In this book, we provided one of the first comprehensive studies of the consequences of ballot structures for representation, examining their influence on the three main actors of an election: voters, candidates, and parties.

This final chapter summarizes the contributions of our findings to the literature on electoral institutions in particular, and to the research on political representation overall. First, we discuss how the ballot form has the power to profoundly transform party campaigns and election outcomes. Second, we explain the consequences of the ballot form for policy representation. Finally, we consider the prospects for ballot reform in Argentina more broadly.

### **Redefining the Electoral Competition**

Voting demands time and effort and the ballot form structures the costs voters incur when making choices at the ballot box. Some ballot forms reduce the effort needed to make independent choices across races. Such ballots are associated with higher rates of split-ticket voting, undermining the party coattails over down-ballot candidates. Our evidence indicates that in Salta an increase of 4.6% in vote splitting can be attributed to the implementation of an electronic-based Australian ballot, as compared to the traditional partisan paper ballot.

After a voter splits the vote, some ballot forms increase the cost of reengaging in the election, whereas other forms—the electronic ballot adopted in Salta, for instance—keep the voter engaged with the process. As a result, the electronic device is linked to lower levels of vote roll-off, and heightened participation in down-ballot races. As a matter of fact, our analysis shows a 2.5% reduction in roll-off in province House elections in precincts using the electronic ballot, as compared to those using the partisan paper ballot. In a nutshell, the effect of the ballot structure on voting behavior ultimately depends on the layout differences between ballots. Evidence from our study indicates that the Australian ballot administered via electronic devices in Salta, simultaneously increased split-ticket voting and reduced ballot roll-off.

Changes in ballots also reshape parties' incentives. The ballot reform in Salta, in particular, affected the opportunities of small parties to increase their vote share by reducing the centrality of the gubernatorial candidates and allowing the party to strategically decide where to campaign. Campaigns in Argentina, as is typical in presidential democracies, are centered on the executive candidate (Carlin and Singh 2015; Benton 2005), including governors in federal countries (Jones 1997; Samuels 2000; Hogan 2005). As split-ticket voting becomes more common, however, parties without a viable executive candidate at the top of the ticket may spend more time and resources campaigning around candidates in down-ballot races. Moreover, parties may spend campaign resources coaching voters to split their ballot—an already common strategy among parties competing solely in down-ballot races.

Evidence from our work shows that the electronic device adopted in Salta created new electoral opportunities for smaller parties: up to 3% to 5% differences in vote share between gubernatorial and legislative candidates from the same party can be attributed to ballot structure alone. Under ballot structures that facilitate split-ticket voting, this strategy may become more common, and it might be pursued even against the will of party authorities with little tools to contain it.

Ballot design may shape the costs of competing across the entire district. Electioneering demands time and money. In Argentina—under the ballot and envelope system—individual parties are responsible for supplying their own ballots, small parties often lack the money or human capital necessary to supply ballots to all polling stations across the district. Some ballots reduce (or even entirely remove) the cost of supplying and replenishing ballots in polling places. The electronic ballot adopted in Salta, for instance, transfers this responsibility to the electoral authority. With the centralization of ballot distribution, such as the one adopted in Salta, parties can count on ballot availability everywhere. Hence they are free to campaign beyond the borders of their electoral fiefdoms, leading to lower levels of geographical concentration of votes.

This change is mostly likely to influence the vote distribution of small parties. The vote concentration of small parties in Salta fell about 17% after the adoption of electronic voting. The magnitude of the effect might be larger in other cases: the change that we observed here was smaller than the one witnessed in Colombia after a similar reform (see Alles et al. 2021). The smaller magnitude observed here was possibly due to the relatively low concentration of party votes before the ballot reform in Salta.

There are also reasons to believe that ballots may have implications for party cohesion. In particular, the ease with which voters can split their ticket, may create incentives for down-ballot candidates to campaign independently of their party, ultimately weakening the influence of party brands over elections. Alles and his coauthors (2021) observed a personalization of campaign ads in Colombia, after a paper-based Australian ballot was adopted to replace partisan paper ballots. However, the extent to which the ballot form influences party cohesion is weighted by other factors. In fact, in contrast to the Colombian experience, in Argentina party leaders retained control over candidate's access to the ballot. These gatekeeping powers encourage candidates to display strong party loyalty (Jones et al. 2002), potentially reinforcing party cohesion, in spite of candidates' incentives to develop personalized campaigns. And recent research suggests that larger personalization of campaigns, even when voters are allowed to use preference voting within party lists, does not necessarily undercut the ideological cohesion of parties (Folke and Rickne 2020).

Finally, ballot structure influences the visibility of candidates competing in down-ballot races. Some ballot designs increase the saliency of personal attributes, boosting the electoral chances of candidates holding certain personal traits (Tchintian 2018). In this vein, the potential effects of two personal characteristics were examined in this Element: gender and experience. Our evidence indicates that the electronic devices used in Salta do substantially favor incumbents in local elections; incumbent mayors, who were already natural front-runners, additionally enjoyed a 6.2% vote share's increase in elections using e-voting, in comparison to others using paper ballots. Likewise, there is some (albeit weaker) evidence that women fare better when splitting the ballot is more difficult. Combined, the results indicate that ballot structure can affect the salience of personal vote earning attributes in down-ballot races.

The implications of this finding, however, may not necessarily be welcomed. Incumbents often enjoy a large built-in advantage, we observe that some ballots strengthen the incumbency bonus by reinforcing the importance of personal attributes. These findings indicate that some ballot forms may inadvertently undermine the competitiveness of elections, with significant implications for accountability in down-ballot races. To the extent that incumbents enjoy a larger bonus, it may be even more difficult for opposition candidates to unseat incumbents and harder for voters to ultimately hold them accountable at the polls.

## **Refocusing the Electoral Connection**

A large body of research shows that electoral institutions structure representatives' decision-making in office, and overall, the policies implemented by the government (e.g., Barnes 2016; Batto and Beaulieu 2020; Taylor-Robinson 2010; Crisp et al. 2004, 2021; Carey and Shugart 1995). Most of this research is focused on the implications of major electoral institutions, such as the use of proportional rules, the magnitude of districts, the use of open lists, or the nature of party primaries. However, the devil is in the details. Revamping the ballot design affects party campaigns and election outcomes, and in doing so, reshapes what Mayhew (1974) called the electoral connection.

A ballot reform such as the one presented in this Element, if applied in an environment with large district magnitudes, may have important consequences for the relation between executive and legislative branches and the centrality of parties in the government. Larger split-ticket voting is associated with more legislative parties and a smaller probability of unified governments (Cox 1997; Jones 1997; Shugart and Carey 1992), favoring a more diverse legislature. Although this situation may increase the probability of legislative gridlock (Shugart and Carey 1992), it is an opportunity to improve substantive representation. As parties are required to cultivate a broad legislative coalition to reach a policy outcome (Calvo 2014), increasing the number of views that are articulated in the policy-making process (Barnes 2016), they come one step closer to the ideal consensual democracy (Lijphart 2012).

The ballot structure also has implications for the scope of policies, by reshaping the geographical bases of parties. Previous research shows that presidents face larger obstacles to implement programmatic policies when legislators rely on local, pork-oriented legislation, making their adoption much more costly (Weingast et al. 1981). When parties effectively compete in a limited number of places, their campaign efforts and policy platforms are more likely to concentrate on localized demands. Conversely, parties fighting for votes from across the entire district, most especially small forces that were typically more limited in their geographic scope, are compelled to broaden their policy platforms, trying to develop a more encompassing policy message. Competing for less localized voters is likely to translate into the territorial homogenization of party strategies.

## **Reforming Ballots across Argentina**

The partisan outcomes of Salta's ballot reform on campaigns and elections overall did not benefit the political position of the incumbent governor, Urtubey, who actively pushed for the implementation of electronic voting. An increase of split-ticket voting weakens the executive coattails making the composition of the legislative assembly more independent from the results of the gubernatorial race, which in the end favors small parties. Moreover, the state-provision of ballots helps opposition parties to penetrate the fiefdoms of the incumbent party, undermining the electoral influence of party networks on the ground. It is true that a strengthened

incumbency advantage reinforces the reelection prospects of mayors in office, most of whom were allied with the governor, but that is not necessarily a direct benefit to the governor. Admittedly, in the case of Salta, none of these consequences hurt the governor's electoral prospects. Urtubey was a popular governor, who won back-to-back reelections by double-digit margins. However, none such outcomes benefitted him either.

This raises the question: why introduce a ballot reform in the first place? Distributive models of electoral reform argue that politicians—and in particular, incumbent governments, given their influence over the legislative process—seek to secure their political position when passing a new set of rules (Benoit 2007; Calvo 2009; Colomer 2004). The ballot reform in Salta, nevertheless, does not fit that pattern: there is no evidence that the reform improved the position of the incumbent party. One conceivable answer is that elites lack the foresight needed to think through all the implications of a reform, and their choices are informed by limited knowledge of reform outcomes (see Andrews and Jackman 2005), especially when they are reforming largely technical procedures. Research also indicates that reformers, though driven by instrumental considerations, might not be exclusively motivated by gains in the inter-party competition, contrary to what distributive models assume: elites may use reforms to, for example, reinforce their party positions (Cox et al. 2019, Schröder and Manow 2020). And in this specific case, the prospect of a national political career may have shaped the motivations of a young, ambitious governor.

A governor seeking a future presidential run may see an opportunity to raise his national profile by modernizing province-level voting procedures. National visibility is a benefit that can outweigh the costs of potentially losing a few legislative seats. Urtubey, indeed, enjoyed an ample majority in both houses of the provincial assembly, and given that all the Senate seats as well as a majority of the House seats were elected in small districts, those seats were significantly shielded from larger fragmentation and undermined coattails. Instead, the ballot reform gave him considerable media coverage beyond the provincial boundaries, even touring in other provinces to promote the adoption of electronic voting. It thus granted him the opportunity to develop a public persona around democratic transparency.

Today, voters in all the national elections in Argentina, as well as in the vast majority of the provincial ones, still cast their votes with traditional paper ballots. It is widely recognized that the partisan paper ballots are not the most efficient form of voting. This has prompted frequent criticism from civil society (*Infobae*, 10/07/2020; Mustapic et al. 2010) and pushing politicians to consider ballot alternatives.

Will the successful implementation of electronic voting in Salta spur more ballot reforms across Argentina? At the national level, a few years ago, the Macri Administration included the replacement of the partisan paper ballots within a larger electoral reform package, but the bill did not pass Congress. Instead, the provinces have been a much more prolific laboratory of ballot innovation. Ten years after the initial adoption of electronic voting in Salta, three other provinces have used electronic voting to elect province-level authorities, while a few other jurisdictions have developed some e-voting pilots in local elections. However, the international spread of electronic voting has slowed down since then, and the push for its adoption in Argentina has likewise lost traction.

The potential adoption of a paper-based Australian ballot has attracted the attention of reformers as well. At roughly the same time Salta adopted e-voting, two other provinces adopted paper based Australian ballots—all the province-level authorities in Córdoba and Santa

Fe have been elected using them since then. But even this ballot faces substantial resistance from some parties. Consistent with our empirical results, research indicates that the adoption of an office-centered Australian ballot would weaken coattails (Engstrom and Kernell 2014, 2005; Calvo et al. 2009; Katz et al. 2011; Rusk 1970), allowing for smaller parties to gain ground in elections.

Resistance to modernizing election ballots presents a final piece of evidence that politicians indeed believe that voting procedures are consequential. That leaders are willing to settle for inefficient procedures, fearing that reforms could alter their vote share and ultimately the allocation of institutional positions, is a reminder of the ever-present trade-offs that accompany preference aggregation and the challenges associated with designing the ideal ballot procedures. Our research does not indicate that one specific ballot form is strictly superior to another, but instead, it demonstrates why politicians, practitioners, and voters alike should be mindful of the ways ballot procedures permeate the entire political process. Voting procedures have real-world consequences, and the most important one is how they shape the connection between voters and their representatives.

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