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THE RUNNER-UP EFFECT

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ABSTRACT

Exploiting regression discontinuity designs in Brazilian, Indian, and Canadian first-past-the-post elections, we document that second-place candidates are substantially more likely than close third-place candidates to run in, and win, subsequent elections. Since both candidates lost the election and had similar electoral performance, this is the effect of being labeled the runner-up. We explore the potential mechanisms for this runner-up effect, including selection into candidacy, heuristic behavior by political actors, and the runner-up obtaining an advantage from strategic coordination (being more likely to become a focal point). Selection into candidacy is unlikely to explain the effect on winning subsequent elections, and the weight of evidence suggests the effect is driven by strategic coordination. We find no effect of finishing in third-place versus fourth-place.

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1 Introduction

Social scientists have a longstanding interest in the factors that determine electoral success. A large part of political economy studies how voters and other agents use information on candidates such as personal traits, policy platforms, and past performance, to select leaders. Understanding how this information is processed is key to understanding how a democracy chooses its elected officials and, consequently, the policies those elected officials enact.

While previous research has focused mostly on how incumbents are evaluated, this paper analyzes the use of information on non-incumbents. In particular, we study how the electoral performances of losing candidates impact their future success. Our first contribution is to document a new empirical result regarding simple plurality (first-past-the-post) elections: coming in second-place, instead of third, has a substantial causal effect on the probability that a candidate will run in, and win, the next election in her constituency. We use a regression discontinuity design (RDD) to estimate this "runner-up effect", comparing barely second- to barely third-place candidates in samples covering four distinct sets of elections: Brazilian municipal mayors, Canadian House of Commons, Indian state assemblies, and the Indian Lok Sabha (federal lower chamber).[1] These contexts cover multiple continents, as well as local, state, and federal elections for executive and legislative positions.

At first pass, it is perhaps surprising that simply being labeled the runner-up would matter in a future election. On average, close second- and third-place candidates are similar and neither gets to hold office or enjoy any institutional advantage in future elections.[2] Moreover, the difference in ranking provides no additional information about the candidates beyond their votes. In other words, ranks coarsen the information available in vote shares, and agents should prefer to base decisions on finer information, which is publicly available.

Despite these factors, we find that being labeled second-place has large implications for whether a candidate runs in, and wins, the next election. For example, our preferred estimates indicate that being the runner-up increases a Brazilian mayoral candidate's probability of running in the next election by 9.4 percentage points (p.p.), and her chances of winning by 8.3 p.p., a large effect given that close third-place finishers run again in, and win, the next election only 30.3% and 9.5% of the time, respectively. Similarly, being the runner-up (instead of third-place) increases the probability of running again from 31.9% to 36.3% in Indian state elections, and the probability of winning from 7.8% to 11.2%. This implies that variation in past electoral performance that is essentially noise can increase the probability a candidate will be elected in

[1] We also study elections for the British House of Commons in Appendix A.3. Section 2 discusses our focus on these particular contexts.

[2] To the best of our knowledge, none of the contexts we study involve electoral rules that treat second- and third-place candidates differently (e.g., the runner-up does not participate in a runoff election, is not listed more saliently in future ballots, and does not receive more public resources or funding in subsequent elections).

the future by magnitudes of 43% in India to 87% in Brazil.[3] Interestingly, the analogous analysis using RDDs from elections where third- and fourth-place are close finds effects that are close to zero in magnitude and statistical significance.

The finding of significant runner-up effects has possible implications for two widely studied electoral phenomena. The first is the incumbency effect.[4] While it is natural to believe that a large part of the effect of being an incumbent on future electoral outcomes is due to holding office, our results suggest that simply being labeled first-place might play a role. A compelling theory involving incumbency effects should incorporate the idea that previous electoral rank by itself can have impacts.[5] Second, the runner-up effect demonstrates that the electoral performance of losing candidates has sizable impacts on their future performance. This sheds light on candidates' decisions to enter races where they have low (or no) chances of winning, as they might be attempting to improve their odds in future elections.[6]

We also assess whether the effect on winning the next election simply comes from the runner-up being more likely to run in it. While the RDD makes it straightforward to estimate the effect of winning unconditional on running, estimating the conditional effect requires addressing selection into future candidacy. We adapt Lee's (2009) procedure to obtain bounds on such conditional effects.[7] Lower bounds are well above zero (except in the Canadian case), indicating that what drives the runner-up effect not only makes a candidate more likely to run in the next election, but also makes her more likely to win conditional on running.

The second contribution of this paper is to provide evidence on the mechanisms behind the runner-up effect. One possibility is that being the runner-up creates a future advantage when some agents (voters, donors, parties, or candidates) engage in strategic coordination. Under this hypothesis, the second-place label makes a candidate more likely to become a focal point for coordination. For example, perhaps some agents prefer either the second- or third-place candidate over the winner, and in the next election would like to coordinate their support on

[3]Our results on Indian and Canadian federal parliamentary elections are also consistent with the presence of runner-up effects, although the smaller sample sizes make the statistical significance of these results more sensitive to the specific regression discontinuity specification.

[4]Lee (2008) uses close election RDDs to estimate the incumbency advantage in the US House of Representatives. A similar approach is applied to the contexts we study by Uppal (2009), Linden (2004), and Kendall and Rekkas (2012). Section 3 compares the magnitude of runner-up effects with incumbency effects.

[5]In a similar vein, Folke et al. (2014) finds an effect of being the (close) first ranked candidate within a party list under preferential voting on future party leadership.

[6]Canonical models of candidate entry, either under the assumption of policy commitment (Feddersen et al., 1990) or not (Osborne and Slivinski, 1996; Besley and Coate, 1997) usually involve candidates entering elections only when they have a positive probability of winning (or affecting the outcome of) the election.

[7]Lee (2009) provides an approach to bound effects in a randomized trial where there may be selection into the state that makes the outcome observable (e.g., employment is a state where wage outcomes can be observed). The key assumption is that there are no subjects who would choose into the state if they were in the control group, but would not choose in to the state if treated (the "no defiers" or "monotonicity" condition). In our context, this implies there are no candidates who would choose to run again after a close third-place, but *not* to run if they came in close second-place.

one of them; it would be natural in this case to coordinate on the better ranked candidate as a focal point. This type of behavior is found in laboratory experiments.[8]

A large theoretical literature studies strategic coordination across voters (Myerson and Weber, 1993; Cox, 1997; Myerson, 2002). Under simple plurality, these models yield two types of equilibria, the Duvergerian type where coordination leads to two candidates attracting all of the votes, and a non-Duvergerian type with a tie between second- and third-place. The latter is "knife-edge" or "expectationally unstable" (Palfrey, 1988; Fey, 1997). In light of such models, our results provide insight into how constituencies move from the latter type (when second- and third-place candidates are close) to more stable Duvergerian equilbria.[9]

A second, and non-exclusive, possible mechanism is that at least one political player (e.g., voters, candidates, parties, the media) evaluates candidates based on their rankings, even though rankings provide no additional information beyond the underlying vote-shares. In other words, they engage in a "rank heuristic."[10] For example, parties might use a heuristic where, at least in some cases, they provide more support for candidates that come in second-place.[11] Another possibility is that candidates perceive that, even holding electoral performance constant, they were closer to winning after coming in second- instead of third-place and are therefore more motivated to invest in future campaigns.

This paper provides a host of tests to explore these possible mechanisms, and our interpretation is that the weight of the evidence suggests that strategic coordination plays a primary role. First, the coordination mechanism predicts that voters who supported the third-place candidate should switch to voting for the runner-up in the next election. We test this prediction using data from over 8,000 polling stations (i.e., sub-constituency) in 144 elections where second- and third-place Brazilian mayoral candidates were close. We find that polling stations that tended to vote for the third-place candidate present larger vote shares for the runner-up in the next election, compared to polling stations that tended to vote for the winner or fourth- and lower-placed candidates, confirming the prediction. This finding is difficult to reconcile with an explanation based entirely on heuristics, since it would require third-place supporters to be disprop ortionately

[8]In an experiment where voters coordinate on one out of two majority candidates in order to beat a minority candidate under plurality rule, Forsythe et al. (1993) find that "*a majority candidate who was ahead of the other in early elections tended to win the later elections, while the other majority candidate was driven out of subsequent races*" (p. 235). Bouton et al. (2012) find very similar results.

[9]Section 5 discusses the links between models of strategic coordination and our empirical results.

[10]An individual who observes ranks, but not vote shares, should (rationally) infer that any runner-up received substantially more votes than a third-place candidate. However, and more relevantly for our purposes, an agent only observing ranks implies that some other agent (e.g., the media) acted following (or imposing) a rank heuristic by deciding to supply only the coarser information. For examples of rank heuristics in other contexts, see Pope (2009) and Barankay (2012).

[11]We have not encountered any anecdotal evidence that parties use such rules. Estimated effects for Indian independent candidates are similar to those with party affiliations, making a party-level explanation unlikely.

using, or being affected by, such heuristic.[12]

Second, the heterogeneity of runner-up effects across different types of elections is consistent with strategic coordination. The runner-up effects are stronger in cases where the second- and third-place candidates received a large number of votes, compared to the winner, and also when the second- and third-place candidates are from parties with similar platforms. This indicates that the advantage of being labeled the runner-up is larger in the cases where it is more likely that the second- and third-place candidates form a "divided majority." We also find larger effects on winning future elections immediately after an event in India (the 1975-1977 "Emergency") that can be seen as a disruption of the political equilibrium which would raise the need for coordination to sort between entrants. It is not clear why an explanation based on heuristics would generate these patterns.[13]

We also present tests of a heuristic-based explanation in relation to the media. One possibility is that the media gives more coverage to runners-up than to third-place candidates, which translates into an electoral advantage. We test for this in our Canadian context, where comprehensive newspaper archive searches for candidate names are possible. We find that the number of articles mentioning close second- and third-place candidates are statistically indistinguishable prior to, and after, the election, as well as in the run-up to the next election.[14] To further probe the role of media, we test whether the runner-up effect is larger in Brazilian and Indian regions with greater media presence, and find no evidence supporting this. This suggests that a media-based heuristic is unlikely to drive the runner-up effect.[15]

Two other factors also shift the weight of evidence toward the coordination-based explanation. First, the finding of zero effects for third (versus fourth) place provides an additional complication to an explanation based on heuristics, as one would expect that a rank-based heuristic that applies to second-place would also apply to lower ranks. Second, explanations based on runners-up receiving more campaign inputs must address the sizeable magnitudes of effects.[16] On the other hand, strategic coordination can account for these large effects, especially if a large share

[12] These estimates control for constituency-time (election) fixed effects, as well as the vote shares received by the runner-up and the winning candidate.

[13] We focus the heterogeneity tests on Brazilian and Indian (state) elections, where the sample sizes are large enough to meaningfully test whether runner-up effects differ across different sub-samples. The "Emergency" was a 21 month period where democratic governance was revoked and the prime minister assumed control of all branches of government. The dominant party in Indian politics (Congress) lost substantial support after this event, facilitating the entry of new players.

[14] Both candidates receive very little media attention in the period between the elections, perhaps unsurprisingly given that neither gained a seat in the Canadian parliament.

[15] Our measure of media presence is the existence of an AM radio in Brazil and greater newspaper circulation per capita in India. Both measures are motivated by previous studies that found these media outlets to have important effects in elections (Ferraz and Finan, 2008; Besley and Burgess, 2002).

[16] For example, if the effect is driven by candidate motivation, the effects on the probability of winning the next election imply that motivation has enormous consequences. An explanation based on donors differentially supporting runners-up also implies either strong responsiveness to rank by donors or large effects of campaign spending on votes.

of those supporting the third-place candidate switch to voting for the runner-up in the next election.

We reiterate that heuristic behavior and strategic coordination are not mutually exclusive explanations. They are likely mutually reinforcing (e.g., if runners-up are more likely to become focal points, they—and parties, donors, etc—should be motivated by rank labels). We also emphasize that while our results are consistent with voters themselves using the runner-up label as a focal point, it is possible that the strategic coordination (that ultimately shifts vote shares) occurs at a different level. Candidates, parties, and/or other "elites" may coordinate their support and rely on election rankings to do so. Data limitations do not allow us to differentiate across these possibilities.

Given the evidence that strategic coordination plays an important role in causing runner-up effects, we also see this paper as contributing to the empirical literature on strategic voting.[17] While previous studies are primarily focused on whether (or how frequently) voters act "strategically" or "sincerely", our results highlight the empirical relevance of strategic coordination in determining election winners. Sizable magnitudes for the runner-up effect imply that coordination frequently "matters." The size of the literature studying strategic coordination in elections underscores the importance of documenting its empirical relevance.[18]

The next section describes the elections and data analyzed. Section 3 provides the main estimates and documents the runner-up effects. Section 4 provides bounds on the effect on winning conditional on running. Section 5 addresses the mechanisms driving the runner-up effect. Section 6 concludes.

2 Data and Background

2.1 Data Selection and Construction

This paper compares the subsequent performance of second- and third-place candidates in four separate sets of elections: Brazilian municipal mayors, Canadian House of Commons, Indian state assemblies, and the Indian Lok Sabha. These contexts were chosen for two reasons. First, they use a simple plurality (first-past-the-post) electoral rule in single member constituencies, where

[17] Cox (1997). Fujiwara (2011), Kawai and Watanabe (2013), Spenkuch (2014a), Spenkuch (2014b).

[18] More formally, assuming voters' preferences are stable over time and strategic voting drives the entirety of results, a runner-up effect on winning the next election of x p.p. implies that $x\%$ of elections with close second- and third-place candidates are cases where coordination failed and the winner would have lost a two-candidate race race against the runner-up. Moreover, these $x\%$ of cases will be "corrected" in the next election, once voters coordinate. In reality, voters' preferences over candidates change over time, and other factors beyond coordination may play a role in creating the runner-up effect, but the general association between the size of our effects and the role of coordination remains. Section 5 discusses this issue further.

there is no differential treatment of second- and third-place candidates. For example, a similar analysis using elections from runoff systems would be confounded by runners-up having longer campaigns. Cases with a mixed-system (e.g., the German Bundestag) would also be problematic if the rank of losing candidates plays a role in assigning candidates to "party seats." Additionally, the focus on simple plurality allows us to interpret our results in light of strategic coordination models, and test further predictions.

The second reason concerns statistical power. The RDD analysis requires a large number of elections to obtain precise estimates. Indeed, in Section 3, we discuss how even the Canadian and Indian federal election samples do not yield enough power to detect relatively large effects for some outcomes. We searched the Constituency Level Elections Archive - CLEA (Kollman et al., 2013), as well as the references in Eggers et al. (forthcoming), which analyzes RDDs from close first- and second- place candidates in multiple contexts, for cases where at least five thousand single-member plurality rule elections would be available. The only cases that satisfied such requirements and are not included in our main analysis are American elections and British House of Commons elections. We do not analyze American contexts given the U.S. political system has two clearly dominant parties with few meaningful third candidates. Given its multiparty nature, Appendix A.3 analyzes the British case. However, results indicate it suffers from a similar issue, with close second- and third-place candidates having negligible chances of winning the next election.[19]

The main outcomes studied in this paper are whether a candidate runs in, and wins, a subsequent election. We use candidates, not the parties, as the unit of analysis because candidates are politically more salient in our contexts with the largest number of observations (Brazil and Indian states). Party mergers, splits, and change in names also complicate measuring party outcomes across time, making the use of candidates more appealing. Moreover, in Indian state elections, 21% of second- and third-place candidates are independents who would need to be discarded in a party-level analysis. While there are no officially independent candidates in Brazil, municipal elections are typically non-partisan in nature (Ames, 2009), with candidate identity being more salient than party. This is especially true in smaller municipalities which constitute the bulk of our sample. Moreover, 37% of second- or third-place candidates that ran again do so under a different party. Appendix A.2 presents results using parties as the unit of analysis; our main

[19]British local elections involve multi-member constituencies (with most constituencies alternating between single- and multi-member cases) and is further complicated by a two-tiered government structure. Most elections in the CLEA involve proportional representation systems, and many of the elections analysed in Eggers (2014) involve either multi-member districts, mixed-system (e.g., Germany), or variations of runoffs (e.g., Australia, Bavaria, France). Examples of cases that are not analysed due to small sample size are elections from the Philippines, New Zealand, several African countries, and Mexico (for which candidate level results are not available in some years). Finally, the majority of local elections in Spain and Italy occur under proportional representation and runoff systems, respectively.

qualitative conclusions remain.[20]

Our outcomes capture only the cases where a candidate ran again and/or won a race for the same office in the same constituency. This decision is mostly driven by data considerations: in India and Canada, the only individual identifier for each candidate is her name, and matching across constituencies and offices would likely lead to a large number of false matches. There are relatively few elected offices in the Indian and Canadian parliamentary system, and Indian state politics is in particular based on local connections, making it unlikely that candidates would switch districts (except for in the case of a small number of high-profile candidates). In the Brazilian data it is possible to analyse how often candidates run in different constituencies, which occurs with negligible frequency.

Finally, it should be noted that in all the contexts we study, there is no institutional advantage of being the runner-up instead of third-place. For example, the order that candidates appear on the ballot, and allocation of public campaign resources, do not depend on previous electoral performance.

2.2 Brazil: Municipal Mayors

Brazil comprises over 5,000 municipalities, each with its own elected mayor (*Prefeito*), who is the dominant figure in municipal politics, with substantial control over public spending. Federal law mandates that all municipalities hold elections every four years at the same date. Mayors are elected by plurality rule at-large (i.e., the entire municipality is a single electoral district). Our data covers the universe of mayoral elections in the 1996-2012 period (five rounds of elections). It was obtained from the Brazilian electoral authority website.[21]

Municipal borders are mostly stable during the period.[22] For all years, the Electoral Authority provides the candidate's name, voter identification number (*Título Eleitoral*), party, and votes received. Voter identification numbers are official documents issued by the federal government and unique to each person. We match candidates across elections using their voter identification

[20] Results for Brazil are attenuated by an amount that can be explained by the amount of party switching by candidates across elections.

[21] `http://www.tse.jus.br`. There are also elections for municipal councils. Since these use proportional representation, they are not analyzed in this paper. Municipalities with more than 200,000 registered voters elect their mayors under a runoff system, and are excluded from our sample. Bye (or supplemental) elections held outside the official dates in Brazil are extremely uncommon. Data for pre-1996 municipal elections is not available.

[22] There are a small number of municipal secessions in this period. We matched municipalities over time using the electoral authority official identifiers.

number and, when this is missing, their name.[23]

We define a candidate as running in the subsequent election if we are able to match her to a candidate who appears in the candidate list in the subsequent election in that municipality. Only a negligible number of candidates run for office in different municipalities in the period. While the full data set consists of 73,113 candidates in 27,317 elections across 5,521 unique municipalities, only 10,304 races have three or more candidates and occurred before the last election in the sample (2012), allowing us to observe future outcomes.[24]

2.3 India: State Assembly Elections

Each Indian state elects a State Assembly (*Vidhan Sabha*), a legislative body operating under a parliamentary system by selecting the executive (Chief Minister). Members are elected by plurality rule from single-member geographic units known as assembly constituencies. Each Assembly is formed for a five-year term after which all seats are up for election, but it can be dissolved earlier by a motion of no confidence or the executive's request. In the case where a sitting member dies, a bye-election for only her seat is held.

We collected data from the Election Commission of India website[25] on all assembly constituency elections, including bye-elections, held in India over the 1951-2013 period.[26] We first match constituencies over time using constituency name and state. Major redistricting occurred in 1972 and 2008 which created new constituencies as well as the re-definition of old constituencies in some cases. When a new assembly constituency is created we do not attempt to match it to the assembly constituencies it was created out of, but instead treat it as a new separate assembly constituency.

The Election Commission website provides the candidate's name, party, and votes received. The data does not provide unique identification numbers for candidates, so we match them over time using their names. For each candidate we search for whether the candidate's name appears among the candidates in the next election held in the same assembly constituency. The majority of matches are made either exactly, by substituting initials for first and middle names, changing the order of names, or other simple permutations of the candidate's given name. When a candidate is matched across two elections, we define her as having ran in two subsequent elections.

[23]Voter identification numbers are missing for the 1996 election data. We cross-checked the quality of name-only and voter-identification-based matches using data for later years, and found that a negligible number of candidates could not be matched by name. Voter identification numbers use a system of verifying digits (where the last digits are a complex function of previous ones) that minimize issues of miscoding in the administrative data.

[24]Two elections resulted in the second- and third-candidates receiving exactly the same number of votes. We drop these observations as it is not possible to assign these candidates to second- or third-place.

[25]`http://eci.nic.in/eci_main1/index.aspx`

[26]Prior to 1962 some assembly constituencies had multiple representatives in the state government; we remove these constituencies from our analysis.

To judge the quality of our matching process we manually checked the matching algorithm for the top three candidates in 20 randomly selected elections. Our algorithm correctly identified whether the candidate ran in the next election for 88% of these sampled candidates. The full data set consists of 374,472 candidates in 47,931 elections across 5,968 unique assembly constituencies. The vast majority of elections had three or more candidates, and we observe 39,214 elections with three or more candidates and a subsequent election in the same constituency.[27]

2.4 India: Federal Lower Chamber

We use data on Indian federal parliamentary (*Lok Sabha*) elections over the time period 1951 through 2009. Like its state counterparts, the Indian federal government operates under a parliamentary form of government with elections at least every five years. Members are elected from single-member districts. For the period after 1974 we use data from the CLEA. For 1951 through 1974 we use data from the Election Commission of India website.[28] Since names are the only individual information available on candidates, we match Indian federal parliamentary candidates over time using the same matching procedure that was developed for the Indian state legislature elections.[29] Our Indian federal election data consists of 73,687 candidates in 7,536 elections occurring in a total of 1,227 unique constituencies. 5,959 elections have three or more candidates and a subsequent election occurring in the same constituency.

2.5 Canada: House of Commons

The House of Commons is the lower chamber of Canada's Westminster style federal parliamentary system. Members of Parliament (MPs) are elected at least every five years by plurality rule in single member constituencies (ridings). The data covers the universe of elections between 1867 and 2011, and is from the CLEA. Since names are the only individual information available on candidates, we construct the dataset using a similar procedure to the Indian datasets.[30] We also match constituencies by name and province, considering constituencies with the same name over years as the same constituency. We have a total of 40,397 candidates in the Canadian data contesting in 10,485 elections across 1,146 constituencies. 5,948 elections had three or more candidates and at least one subsequent election.

[27] Eight elections resulted in the second- and third-candidates receiving exactly the same number of votes. We drop these observations as it is not possible to assign these candidates to second or third-place.

[28] In the election years between 1951 and 1962 there were a small number of federal constituencies that were multi-member (i.e. more than one representative was elected from one constituency); we drop these constituencies from our analysis.

[29] Our manual check procedure finds that our algorithm correctly identified whether a candidate ran again or not in the next election 89% for Indian federal candidates.

[30] Our manual check procedure finds that our algorithm correctly identified whether a candidate ran again or not in the next election for 100% of sampled Canadian candidates. We also exclude a small number of cases of multi-member ridings.

3 Results

3.1 Graphical Analysis

Figures 1a - 1d depict the runner-up effect for our four contexts. The sample in each figure includes any candidate that came in either second- or third-place in an election three or more candidates contested. We define a variable "vote share difference between second and third," which for second-place candidates is equal to the candidate's vote share minus the third-place candidate's vote share, and for third-place candidates is equal to their vote share minus the second-place candidate's vote share. This variable is always negative for third-place candidates and always positive for second-place candidates. The x-axis in these figures corresponds to this vote share difference variable. The vertical line represents a zero vote share difference between the second and third candidate, and indicates the transition from candidates who came in third-place to those who came in second-place.

The y-axis shows the probability that a candidate with a given vote share difference variable ran again in the next election (triangles) or won the next election (circles). The triangles and circles in these figures correspond to a local average of the outcome variable calculated within two percent bins of the vote share difference; for example, the triangle immediately to the right of the vertical line is the fraction of second-place candidates who beat a third-place candidate by less than two percent that ran in the next election. The circle just to the right of the vertical line is the fraction of second-place candidates who beat a third-place candidate by less than two percent that won the next election. Note that the fraction of candidates who win the next election is calculated including both candidates who did and did not run in it (i.e. it is unconditional on running).[31] The curves to the right and left of the vertical line represent the predicted values of a quadratic polynomial of the outcome variable on the candidate's vote share difference. The polynomial is fit to the original un-binned data separately for each side of the cutoff.

To provide some context for these results, Appendix Figure A.1 presents the number of observations (candidates) in each of Figures' 1a - 1d bins.[32] Appendix Figure A.2 repeats the analysis using the candidate vote share (at time t). In all of our election samples, the second- and third-place candidates around the cutoff receive, on average, substantial vote shares each, between 21% in Canada and up to 27% in Brazil. This suggests that the runner-up effects we estimate are not based primarily on second- and third-place candidates who received very few votes.

Figure 1a shows the main results for Brazilian mayors. While barely third-place candidates (just left of the cutoff) ran again roughly 30% of the time, close runners-up ran again about 40% of

[31] We discuss the issue of selection in to running in Section 4.

[32] These figures are symmetric because our sample only includes elections where there were at least three candidates. For every second-place candidate with a vote share margin of $+x$ there is one third-place candidate with a vote share margin of $-x$ from the same election.

the time, implying a substantial "jump" at the cutoff. There is a jump of similar magnitude in the probability of the candidate winning the next election. In the Indian state case (Figure 1b), close second-place candidates are approximately 5 p.p. more likely to run and 3.5 p.p. more likely to win the next election relative to close third-place candidates. The size of the jumps in both Brazilian municipalities and Indian states are large relative to the bin by bin variation away from the cutoffs, suggesting that these differences are not due to noise.

For the Indian federal sample (Figure 1c), there also appears to be a discrete jump around the cutoff, although the results are noisier. This difference is likely due to differences in sample sizes: there are more elections within each bin of the previous cases than in the Indian federal data. For example, there are approximately 3,000 second-place candidates who came in second-place by less than 2 percent in the Indian state data, but only approximately 340 in the Indian federal data (Figure A.1). Interestingly, the magnitude of the runner-up effect effects in the Indian state and India federal elections appear quite similar.

Figure 1d shows that for the Canadian sample, there appears to be a sizeable increase in the probability that runner-up candidates run in the next election, but little change in the probability that the runner-up candidate will win the next election. The effect size on running is about 5 p.p. which is approximately similar to the effect sizes in the Indian state and federal data. In interpreting our Canadian results, it is useful to keep in mind that, unlike our other samples, Canadian parliamentary elections have a very large incumbency advantage (most candidates finishing first will win the next election). This makes it difficult for second- and third-place candidates to win future elections; the circles in Figure 1d are well below the level observed in the other figures. The effect size found in the Indian and Brazilian cases would be proportionally enormous (and unexpected) in the Canadian context.

Aside from the discrete changes in running and winning probabilities around the cutoff in these figures, there are also interesting similarities in the slopes to the left and right of the cutoffs. While not the main focus of our analysis, it is useful to discuss two of these patterns. One expected pattern is the upward slope to the left of the cutoff: more successful third-place candidates are more likely to run/win the next election.

The less obvious pattern is that the probability of running/winning in the next election tends to have a "U" shape to the right of the cutoff. Runners-up that beat their third-place competitor either by a small or large margin fare better in future elections, while candidates who beat their third-place competitor by an intermediate margin fare slightly worse. Such a pattern is expected if the runner-up effects are driven by strategic coordination: close to the cutoff there are a larger number of supporters for the third-place candidate that can strategically switch towards voting for the runner-up, while away from the cutoff that is not the case (perhaps because in those elections there is coordination on the runner-up at time t). However, another explanation is that the first-place candidate is strongest in the intermediate case, and weaker in the extremes. In unreported results, we plot the winner's vote share (at *t+1*) against the same x-axis variable and find that it follows a inverted-U pattern: elections close to the cutoff have relatively strong second-/third-place candidates, and weak first-place candidates; and, elections with large second versus third margins also have relatively strong second-/third-place candidates. However, elections with intermediate differences between the second- and third-place candidates have stronger first-place candidates.[33]

As additional results, Appendix Figure A.3 provides plots of the candidate's vote share in the next election. The fact that vote shares are not observed for candidates who do not run again complicates the interpretation of these figures; we assign candidates who did not run in the next election a vote share of zero. Consistent with the results on running and winning again, we see discrete jumps in vote shares as the cutoff is crossed.

Finally, to assess whether the previously discussed effects might be due to other differences between second- and third-place finishers besides their rank, Figures 2a - 2d plot a candidate's running (and winning) status in the *previous* election against his vote share in the current election. In other words, we repeat the analysis using past instead of future outcomes. There is no visible jump at the cutoff, indicating that barely second- and third-place candidates have comparable past performance in elections. This also suggests that it is unlikely that other differences besides the second- versus third-place distinction can explain the effects in subsequent elections. If, for some unexpected reason, close runners-up were *ex-ante* superior candidates than close third-places, that would also lead to an "effect" in past elections, under the natural assumption that such quality differences are persistent over time.

3.2 Estimation Framework

Let v_{ict} be the vote share of candidate i in the election at time t in constituency c. Constituencies are defined as the relevant electoral district (e.g., municipalities in Brazil, ridings in Canada). As the running variable for the RDD, we also define a variable vote share difference x_{ict} which for second-place candidates is equal to the candidate's vote share minus the third-place candidate's vote share, and for third-place candidates is equal to their vote share minus the second-place candidate's vote share. Hence, positive values indicate the candidate is the runner-up, and negative values that she finished third, with candidates with other ranks excluded from the analysis.[34]

[33] Many observable and unobservable variables may change simultaneously as we move away from the cutoff, making it difficult to isolate what drives the slopes.

[34] For example, consider an election in constituency c at time t where second-place candidate A obtains a 22% vote share and third-place candidate B 18%. In this case the x_{Act} value for the second-place candidate would be 4%, and the x_{Bct} value for the third-place candidate would be -4%.

The treatment effect of barely placing second instead of third on outcome y_{ict} is given by:

$$TE = \lim_{x_{ict}\downarrow 0} \mathrm{E}[y_{ict}|x_{ict}] - \lim_{x_{ict}\uparrow 0} \mathrm{E}[y_{ict}|x_{ict}] \tag{1}$$

Under the assumption that the conditional expectation of y_{ict} on x_{ict} is continuous, the first term on the right side converges to the expected outcome for a second-place candidate who has as many votes as the third-place candidate. Similarly, the second term converges to the expected outcome of a third-place candidate with as many votes as the runner-up.

The limits on the right side are estimated non-parametrically using local polynomial regressions. This consists of estimating a regression of y_{ict} on (a polynomial of) x_{ict} using only data satisfying $x_{ict} \in [0-h;0]$. The predicted value at $x_{ict}=0$ is thus an estimate of the limit of y_{ict} as $x_{ict} \uparrow 0$. Similarly, a regression using only data satisfying $x_{ict} \in [0;0+h]$ is used to estimate the limit of y_{ict} as $x_{ict} \downarrow 0$. The difference between these two estimated limits is the treatment effect. It is important to note the non-parametric nature of the estimation: although linear or quadratic regressions are used, the consistency of the results holds for any arbitrary and unknown shape of the relationship between y_{ict} and x_{ict}. The limit approaching one side of the threshold is estimated using only data on that particular side. The local polynomial regression estimate is equivalent to the OLS estimation of the following equation using only observations that satisfy $x \in (0-h;0+h)$:

$$y_{ict} = \beta 1\{x_{ict} > 0\} + f(x_{ict}) + \epsilon_{ict} \tag{2}$$

where $f(\cdot)$ is a polynomial fully interacted with $1\{x_{ict}{>}0\}$. The estimate of β is the treatment effect. In the case of a linear specification: $f = \alpha + \gamma x_{ict} + \delta 1\{x_{ict}{>}0\}x_{ict}$.

The two key decisions in estimation are the bandwidth h and the polynomial order. Our preferred specification uses a linear polynomial with the Imbens and Kalyanaraman (2012) (IK, henceforth) optimal bandwidth, which is itself a function of the data. To inspect robustness, we also present results based on smaller and larger bandwidths and different polynomial orders. We cluster the standard errors at the constituency level.[35]

3.3 Estimation Results

Table 1 presents our main estimates of the impact of coming in second place on whether the candidate runs in the next election (Candidacy, t+1), and whether the candidate wins the next election (Winner, t+1). The "3rd-pl. mean" column is the estimated value of the dependent variable for a third-place candidate who "ties" with the second-place candidate. Formally, it is an estimate of $\lim_{x_{ict}\uparrow 0} \mathrm{E}[y_{ict}|x_{ict}]$, using a linear specification and the IK bandwidth, which

[35] The use of linear local regressions is suggested in the guidelines by Lee and Lemieux (2010), which we also follow in not weighing observations.

is provided in the "Optimal BW Value" column. The sample size of this optimal bandwidth specification is provided in brackets in the same column.

Column (1) provides the estimated effects based on our preferred specification, which uses a linear polynomial and the IK bandwidth. To probe robustness of the results to specification and bandwidth choices, columns (2) and (3) repeat the exercise using a bandwidth equal to half and double the IK bandwidth, respectively. Column (4) compares the mean outcome between second- and third-place candidates who are within a two percent difference between each other (i.e., it matches the difference between the markers on each side of the cutoff on Figures' 1a-1d).[36] Column (5) uses the entire sample and fits a quadratic polynomial.

Consistent with the previous graphical analysis, the econometric estimation finds evidence of large runner-up effects, regardless of specification/bandwidth. Our preferred specification indicates that barely second-placed Brazilian candidates are 9.4 p.p. more likely than barely third-place candidates to run again. This is a large effect given that 30.3% of barely third-place candidates run again. Moreover, they are also 8.3 p.p. more likely to win the next election (while only 9.5% of close third-place candidates do so). The effects on future candidacy and future winning are both significant at the 1% level under the IK bandwidth. The magnitude and significance of the effects is comparable in other specifications. Appendix Figure A.4 provides estimates for a wide choice of bandwidths.

In the case of Indian state legislators, close second-place candidates are 4.4 p.p. more likely to run in the next election and 3.4 p.p. more likely to win the next election. These are sizable increases, since close third-place candidates run again, and win, 31.9% and 7.8% of the time respectively. These effects are all significant at the 1% level, and robust to different specifications/bandwidths. Appendix Figure A.5 provides estimates for a wide choice of bandwidths. We find similar-sized effects for federal Indian elections (although third-place means are slightly lower). These effects are significant in four out of our five specifications for the candidacy variable and three out of the five for our winning variable. The fact that the effects are not as robust in the Indian federal context (compared to Brazilian and Indian state elections) can be attributed to the smaller sample size, and highlights the need to use a sample with many (perhaps tens of thousands) elections, as discussed in Section 2.

The Canadian data also show a sizable (and statistically significant) effect of running again that is similar to the Indian case: a 4.6 p.p. increase over a 17% third-place mean. The effects on winning the next election are close to zero and statistically insignificant. However, it is difficult to conclude there is no effect for two reasons. As mentioned before, the overall chance of a third or second-place candidate winning is smaller in the Canadian context, with barely third-place

[36] We refer to this as the "zero order" polynomial specification.

candidates winning the next election only 2.4% of the time.[37] Hence any potential effect will necessarily be small and difficult to detect. For example, the standard error in Column (1) is 0.9 p.p., implying that an effect of 1.7 p.p. (increasing the probability of winning the next election by more than 70%) would not be significant at the 5% level.

To test for covariate smoothness (or balance), Table 2 checks whether close second- and third-place candidates differ on pre-existing characteristics. The results confirm the graphical evidence in Figure 2 that close runners-up are not more likely to have ran in or won the previous election. The table also tests whether close second-place candidates are more likely to have received greater vote share in the previous election, or whether they are more likely to be from the major party in the country.[38] We assign a vote share of zero for candidates that did not run in the previous election. Note that any variable that does not vary across second- and third-placed candidates within an election (e.g., turnout, the vote share of the winner, constituency demographics) is by construction balanced.

The only instance when we find an imbalance at the cut-off in Table 2 is that Congress party candidates appear less likely to have come in second-place than third-place in Indian state elections when we use the full sample and a quadratic model. This result is not apparent when we estimate it in the more relevant region (under the optimal bandwidth); also, visual inspection suggests that the quadratic model using the full sample finds a difference because it fits the curve better away from the cutoff and poorly around it, generating a case of mistaking a nonlinearity for a discontinuity (Appendix Figure A.10a).

In addition to showing balance on the fraction of candidates from the major parties in each of our samples, we also conducted a general test for imbalance based on parties as follows. We regress a dummy for whether the candidate came in second on indicators for every party in the sample. We then take the predicted values from this regression and test whether these predicted values jump discretely at the cutoff (i.e., we treat it as another variable in Table 2). If certain parties were more likely to come in second or third-place around the cutoff, we expect these predicted values to increase discretely around the cutoff. In all four of our contexts we find no evidence that party can predict candidate rank. These results are available upon request.[39]

[37] As previously discussed, this is likely due to incumbents being more likely to be re-elected in Canada, compared to other contexts.

[38] We define the major party as the party with the most candidates overall in each dataset. Congress is the major party in India, Liberal is the major party in Canada, and the Brazilian Democratic Movement (PMDB) is the major party in Brazil.

[39] A similar test is discussed in Fujiwara (2013), which builds on a procedure from Card et al. (2009).

3.4 Comparison of Runner-Up and Incumbency Effects

Appendix Table A.1 provides results on the size of the incumbency effect (close first- versus second-place candidates) for each each of our samples; these results provide some baseline against which to ascertain the economic significance of the runner-up effects estimated above. Figure A.6 shows the size of the impact of coming in first-place versus second-place on probability of running again and winning again in the next election respectively in our four samples.[40] In all four of our contexts being the incumbent increases the probability of running again.[41] In Brazil, the runner-up effect on running again is actually larger than the incumbency effect in our optimal bandwidth specifications, 9.4 p.p. versus 8.3 p.p. In the Indian state sample, the runner-up effect on running again of 4.4 p.p. is also reasonably large relative to an incumbency effect on running again of 9.5 p.p. The comparison between Indian federal runner-up effects on running again is similar to the comparison for Indian state elections. Given that runners-up do not hold office, it is striking that the magnitude of the runner-up effects on running again is sizeable relative to the incumbency effects. This suggests the possibility that a large portion of the incumbency effect on candidacy may come from factors unrelated to holding office (we return to this issue in our conclusion). The exception is Canada, where the runner-up effect is much smaller relative to the large incumbency effect.

Regarding the effect on winning again, we find, consistent with Uppal (2009) and Linden (2004), that incumbents are slightly disadvantaged in future elections in Brazil and India. The point estimates are close to zero (and statistically indistinct from it) in the case of Indian federal elections and Brazilian mayors. Interestingly, this implies that we find the runner-up effect on both running again and winning in contexts where the incumbency effect is varied. In particular, the results from Indian states indicating positive effects of coming in second-place, but a negative effect of coming in first-place, make us less concerned that there is some mechanical reason for candidates with higher ranks to perform better in future elections. We find large incumbency advantages in Canada, consistent with Kendall and Rekkas (2012).

3.5 Comparison to Third- Versus Fourth-Place Effect

It is possible that the same mechanism that causes runners-up to run in and win more future elections is also a general effect of rank, which would cause third-place candidates to outperform close fourth-place candidates. Using the same approach applied to visualize the runner-up effect, Figure 3 plots our main outcomes against the vote share difference in samples of third- and fourth-place candidates. We find no evidence of a jump around the cutoff. These figures do show

[40]We also examined figures regarding the covariate smoothness for these effects (omitted due to space considerations), and found no evidence of "effects" on pre-determined variables.

[41]In Brazil mayors are subject to a two-term limit, we hence limit the estimation to candidates who are not incumbents at t, and hence, in the case they win, would be able to run for re-election at $t+1$.

what appears to be a discrete increase in slope around the cutoff between third and fourth place. However, this increase in slope was also apparent in the corresponding figures where the outcome variable is running or winning a previous election (not reported due to space considerations). This change in slope therefore most likely reflects increasing unobservable quality of third-place candidates as the vote share difference between third- and fourth-place candidates increases.

Table 3 presents our regression discontinuity estimates of the effect of coming in third versus fourth. There are a few specifications that show economically small but statistically significant effects, but, overall, there is no robust result of third-place candidates running or winning the next election relative to fourth-place candidates. It seems unlikely that coming in third-place, instead of fourth, has a causal impact on candidates' future outcomes.[42]

4 Bounds on Effects Conditional on Candidacy

Assuming a candidate will choose to run, how much does being labeled the runner-up increase the probability that she will win? While the RDD ensures that barely second- and third-place candidates are, on average, similar, it does not imply that those who run again after barely coming in second are similar to those who run again after barely coming in third. For example, higher ability candidates might be more aware that voters, the media, or parties, provide an advantage to runners-up. In this case, candidates that choose to run again after coming in third-place might be lower quality than candidates that choose to run again after coming in second-place. To estimate the runner-up effect on the probability of winning, conditional on running, we must account for the fact that barely coming in second-place may cause selection in to running.

We adapt a method by Lee (2009) to estimate bounds on the runner-up effect of the probability of a candidate winning a subsequent election conditional on running. Let S, R_0, R_1, W_0, and W_1 be binary indicators. S denotes if a candidate finished second (as opposed to third) in a race at time t. R_0 and R_1 are "potential outcome" indicators for the candidate running at the next $(t+1)$ election when $S = 0$ or $S = 1$, respectively. We only observe a given candidate's decision to run as either the second- or third-place candidate; for example we do not observe whether a second-place candidate would have chosen to run again if he had come in third-place, hence only $R = SR_1 + (1 - S)R_0$ is observed. Similarly, let W_0 and W_1 be the potential indicators of winning the election at $t + 1$. These potential outcomes equal one if a candidate wins the next election, had she chosen to run. Note that this definition allows for a given candidate to have $R_0 = 0$ and $W_0 = 1$; in this case, a candidate chooses not to run if she comes in third, but would

[42]Similarly, we do not find evidence of effects of even lower ranks, as well as an effect of last place.

win the election if he chose to run.[43] Only $W = R[SW_1 + (1-S)W_0]$ is observed, capturing both the fact that a candidate is only observed after one specific rank, and that we only observe if she can win if she runs.[44]

Without loss of generality, there are four types of candidates in our sample. The first type are those who would choose to run again regardless of whether they came in second-place or third-place (i.e. $R_1 = R_0 = 1$). To emphasize the similarity of our approach and Lee (2009), we refer to these as the "always-takers." The second type are "never-takers", who choose not to run again, regardless of their rank ($R_1 = R_0 = 0$). The third type of candidates are the "compliers"; those who would choose to run again if they came in second-place, but would not do so if they came in third-place ($R_1 > R_0$). Lastly, there are those candidates who would choose to run again if they came in third-place, but would not choose to run again if they came in second-place ($R_1 < R_0$): the "defiers."

The key assumption is that there are no candidates in the "defiers" group; all candidates who come in third and choose to run again would also have chosen to run again if they had come in second-place. While it is not possible to test this assumption directly, this is plausible given that we find that coming in second-place is a positive signal of a candidate's future electoral success; a candidate who chooses to run again when coming in third-place but not run again when coming in second-place would be turning down the opportunity to run only when there is likely a greater chance of winning. Note also that this "monotonicity" condition is a standard assumption (sometimes implicitly) in virtually all procedures that correct for sample-selection, as discussed in Lee (2009).

S, R_0, R_1, W_0, and W_1 can be thought of as functions of the candidate and the RDD running variable (x), and under the assumption these variables are continuous, their limits at the cutoff ($x = 0$) can be approximated with the previously discussed methods. Under the assumption of no defiers, and omitting the ict subscripts, we have:[45]

$$\overbrace{\mathrm{E}[W_1 - W_0 | x = 0, R_1 = 1]}^{\text{Effect on win, cond. on being always-taker/complier}} = \underbrace{\frac{1}{\mathrm{E}(R_1|x=0)}}_{\lim_{x\downarrow 0}\mathrm{E}[R|x]}[(\underbrace{\mathrm{E}(W_1R_1 - W_0R_0|x=0)}_{\text{RD effect on W}} - \underbrace{\mathrm{Prob}(R_1 > R_0|x=0)}_{\text{RD effect on R}} \cdot \underbrace{\mathrm{E}(W_0|x=0, R_1 > R_0)}_{\text{Unobservable}}] \tag{3}$$

[43]The definition also allows $R_1 = 0$ and $W_1 = 1$ (a candidate who would win the next election if she came in second in the current election, but chooses not to run).

[44]This implies that, for example, $\mathrm{E}[W|x > 0] = \mathrm{E}[W_1 \cap R_1|x > 0] \neq \mathrm{E}[W_1|x > 0]$, since the last term is the expected probability of winning of all second-place candidates, had they chosen to run, and we only observe whether candidates that run can win or not.

[45]Following the previous section, for second-place candidates let x be her vote share minus the third-place candidate's vote share in the same race; for third-place candidates, x is her vote share minus the runner-up's. Note we now omit the *ict* subscripts to simplify notation.

Derivations are in Appendix A.1. The left side of this equation is the effect to be estimated: the difference in probability of winning for a candidate at the cutoff conditional on the candidate being the type who runs again after finishing second (always-takers and compliers). The terms on the right side of this equation are as follows. $E(R_1|x=0)$ is the share of compliers or always takers around the cutoff, or the share of barely second-place candidates who run again. It can be estimated as the limit as $E[R|x]$ approaches the cutoff from the right. $E[W_1R_1 - W_0R_0|x=0]$ is the runner-up effect on winning, unconditional on whether the candidate runs again (as we have reported so far). $\text{Prob}(R_1 > R_0|x=0)$ is the share of compliers around the cutoff, which is also the estimated runner-up effect on running again.[46] The terms on the right-hand side described so far can all be obtained as estimates from Table 1. The only unobservable term is $E[W_0|x=0, R_1 > R_0]$, the probability of winning after a close third-place finish for a complier (who, by definition, does not run after a third-place finish). Given an assumption of the largest and smallest possible number for this probability, a lower and upper bound on the effect can be calculated.

Since probabilities are not negative, the upper bound can be obtained by plugging $E[W_0|x=0, R_1 > R_0] = 0$ in to equation (3). Intuitively, the largest possible effect occurs under the assumption that close third-placed compliers would never win the next election had they chosen to run in it. Similarly, the most conservative possible choice for a lower bound would be to assume that all compliers would win for sure after finishing third ($E[W_0|x=0, R_1 > R_0] = 1$). However, this number is unreasonably high. First, this would imply that a large number of candidates who would win for sure decide not to run. Second, the probability that a close third-place candidate who runs again wins the next election is 31% in Brazil, around 25% in both Indian contexts, and below 15% in Canada. It is unlikely that the chances of winning for third-place candidates who decided not to run would be more than three or four times larger than for those who chose to run again.

A more reasonable assumption is that third-place compliers would have at most the same probability of winning as second-place finishers who did choose to run. This is arguably a very conservative approach, since one would expect compliers (who decided not to run after a third-place) to have even lower odds of winning than the always-takers, and especially since we are inputting the probability of the more successful (at *t+1*) second-place candidates. Finally, our discussion below will show that the lower bound is above zero even under more conservative assumptions.

To illustrate the procedure, take the estimated magnitudes in Column (1) of Table 1 for the Brazilian case: $E(R_1|x=0) = 30.3\% + 9.4\% = 39.7\%$; $E[W_1R_1 - W_0R_0|x=0] = 8.3\%$; and $\text{Prob}(R_1 > R_0|x=0) = 9.4\%$. Our assumption for the upper bound implies plugging $E(W_0|x=$

[46] Note that $\text{Prob}(R_1 > R_0|x=0)$ does not depend on which side of the cutoff the candidate is on, since the underlying fraction of compliers is not affected by the "treatment."

$0, R_1 > R_0) = 17.8\%/39.7\% = 44.8\%$, to obtain a lower bound of 10.3 p.p. Analogously, the most conservative upper bound would be 20.9 p.p. Effects in this range are substantial, given that close third-place candidates win less than a third of the time they ran again.

In Indian state elections the lower and upper bound under the same procedure are 5.9 p.p. and 9.6 p.p., and for Indian federal elections the respective estimates are 4.2 p.p. and 9.5 p.p.. These are sizable increases, since close third-place candidates who run again have approximately a 25% chance of winning an election in these contexts. Overall, the results in our Brazilian and Indian samples suggest that barely coming in second-place has a sizeable impact on a candidate's probability of winning beyond just the effect on running. The only case where the bounds include zero is Canada, where the unconditional effect on winning is a small negative number. In this case, the conditional effect is bounded between -1.7 p.p. and 0.9 p.p..

Another related approach would be to use equation 3 to see how large the unobservable probability of a close third-placed complier would have to be in order for all the effect on winning to be explained by selection into candidacy. In other words, we can solve for the $\mathrm{E}(W_0|x = 0, R_1 > R_0)$ that sets the left hand side of equation 3 to zero. In the Brazilian case, a close third-place complier would have to win 88.3% to imply that there is no runner-up effect on winning conditional on running. In the Indian state and federal case, the respective values are 79.5% and 56.3%. These numbers are too large to be plausible. For the effects on winning to be explained entirely by selection into running, the probability of "compliers" winning would have to be extremely large: multiple times the probability of the third-placed candidates we observe that run (the "always takers"), and in the case of Brazil and Indian states, well above that observed for very safe incumbents.

5 Mechanisms

5.1 Strategic Coordination

Under the strategic coordination mechanism, some agents would have preferred either the second or third-place candidate over the winner, and in the next election wish to coordinate their support on one of them. The runner-up label serves as a focal point for potential coordination. Such coordination might occur both within and across voters, donors, parties, candidates, or other "elites" that influence votes. A key part of this argument is that the second-place "label" is a more likely focal than a third-place label. While this cannot be tested directly, it is consistent with behavior of voting experiments discussed in the introduction (Forsythe et al., 1993; Bouton et al., 2012). Moreover, a general tendency to coordinate on candidates with better previous performance is reasonable, and perhaps this norm is extended to the cases where the past differences in performance become very small ("at the cutoff"). Of course, the argument is not that all runners-up are focal, but that they have a higher chance of being focal than third-place candidates - other characteristics may be used as focal points as well.

Strategic coordination also provides insights into why the runner-up effect on winning subsequent elections is larger in Brazil than in India, and close to zero in Canada. In the latter two contexts, elections are for members of a larger (state or federal) legislature, and perhaps the expected legislature-wide results (e.g., which parties may form a majority or opposition) can also serve as focal points. In Brazil, mayoral elections are for an individual executive office, largely non-partisan (Ames, 2009), and held at different times from state and federal elections, making past electoral performance a more likely focal point. Moreover, the smallest effects are found in the context (Canada) with the strongest parties, which perhaps serve also serve as the focal point for coordination. However, there are many other differences across these contexts which could also account for these differences.

Analysing our empirical results in light of the theory of strategic voting under simple plurality (Myerson and Weber, 1993; Cox, 1997; Myerson, 2002) yields some interesting insights. These models suggest two possible types of equilibria, the Duvergerian type where coordination leads to two candidates attracting most (or all) of the votes, and the non-Duvergerian type where coordination fails and there is a tie between second- and third-place. The elections around the cutoff in our RDD (which determine our main results) fit the non-Duvergerian description. Hence, the runner-up effect can be seen as part of the process in which constituencies move from one type of equilibria to another, with rank being the focal point that allows coordination failure to be solved. Since the non-Duvergerian equilibria are "knife-edge" or "expectationally unstable" (Palfrey, 1988; Fey, 1997), it is perhaps expected that constituencies would move away from it within the time span of one election.

There are two other aspects of our data that further matches this interpretation. First, Appendix Figure A.1 shows that the distribution of the running variable (the vote share difference between second- and third-place candidates) in India and Brazil has two modes: one where the candidates tie and one where the second-place has a large margin over the third. This implies that the modal cases match the description of both types of equilibria.[47] Second, while the cases around the cutoff are, by construction, characterised by time t elections where the difference between second and third is small, by time $t+1$ they experience elections where the second-place (defined in $t+1$) has a sizable margin over the third-place, and where the top two candidates concentrate most of the votes.[48] This is consistent with cases around the cutoff being unstable non-Duvergerian equilibria, which become Duvergerian at time $t+1$.

This interpretation also suggests a link between the magnitudes of the runner-up effect and

[47] Cox (1997) labels this pattern as the "bimodality hypothesis" and documents it in other contexts. He also interprets this finding as evidence of strategic coordination.

[48] These results, omitted due to space considerations, are available upon request.

the relevance of coordination failures (and its subsequent correction) in elections. If indeed the entirety of the result is driven by the move between the two types of equilibria, then a x p.p. runner-up effect on winning the next election implies that $x\%$ of close elections are cases of divided majorities that failed to coordinate, but that switch into coordinated (Duvergerian) equilibrium by the next election. Hence, the finding of sizeable magnitudes implies that divided majorities failing to elect their preferred (Condorcet-winning) candidate is not only a theoretical curiosity, but a relatively frequent real-world phenomenon. This interpretation, however, requires assumptions on the stability of voters' preferences (e.g., that divided majorities exist in both time t and $t+1$), as well as the entirety of the runner-up effect being driven by the theoretical mechanism described above. While the evidence suggests its importance, it is unlikely that no other factor also plays a role.

Finally, we reiterate that, while the discussion above is based on models where voters act strategically, it is possible that the strategic coordination (that ultimately shifts vote shares) occurs at a different level. Candidates, parties, and/or other elites are perhaps coordinating their support and relying on election rankings to do so. The limitations in our data do not allow to differentiate across these possibilities. The next subsection provide further tests of the predictions of strategic voting.

5.1.1 Strategic Switching from Third- to Second-Place

The most direct prediction of the strategic coordination mechanism is that the runner-up effect should be driven by voters who supported the third-place candidate at t switching towards voting for the runner-up at time $t+1$. Ideally, we would use data on individual vote choices over time to measure this directly. However, data on individual votes is typically not available given ballot secrecy, so we approximate using data from Brazilian sub-constituency level results.[49]

Brazilian municipalities are divided into "electoral sections" which are the specific ballot boxes where a voter must cast his vote. Sections have between 50 and 500 voters (averaging 256 votes per election in our sample), with the average municipality having approximately 60 sections. Since a voter can only cast her vote in her registered section, and voters are unlikely to change sections between elections, this allows us to track small groups of voters over time to a first-order

[49] Similar data is not available for the Indian and Canadian cases.

approximation.[50] We are interested in the descriptive pattern of whether electoral sections that tended to vote for third-place at time t are more likely to be voting for the runner-up at time $t+1$, relative to electoral sections that tended to vote for other candidates. We estimate the following regression model to test this hypothesis:

$$v^2_{ij,t+1} = \alpha_1 v^1_{ij,t} + \alpha_2 v^2_{ij,t} + \alpha_3 v^3_{ij,t} + \gamma_{j,t} + \epsilon_{ij,t} \tag{4}$$

where $v^k_{ij,t}$ is the vote share of the kth place candidate in electoral section i, in constituency (municipality) j, in the time t election. Note that the kth place candidate is defined at the constituency level at time t.[51] $\gamma_{j,t}$ is a constituency-time (election) level fixed effect, i.e., we focus on comparisons within a specific election across different electoral sections. The inclusion of these fixed effects captures the effect of any factor that does not vary across sections within an election, such as which candidates from time t decided to run again, as well as the overall strength of particular candidates.

For the interpretation of the coefficients, it is important to note that vote shares must add to unity. Hence, $\alpha_3 > \alpha_1$ implies that sections that tended to vote for the third-place, as opposed to voting for the first-place, are more likely to be voting for the runner-up at time t. An increase in a section's vote share of the third-place of 1 p.p. (at the expense of a 1 p.p. decrease in the vote share of the first-place) is associated with $\alpha_3 - \alpha_1$ p.p. higher vote share for the runner-up at time *t+1*. Since the category omitted to avoid collinearity between regressors is the vote share of fourth and lower candidates, $\alpha_3 > 0$ indicates that sections that tended to vote for third-place at t (as opposed to voting for fourth and lower candidates) are more likely to vote for the runner-up at *t+1*.

We estimate the equation above only for "close" elections where the vote share difference between second and third are below 2 p.p. (defined at the overall, constituency-wide result, and not at the electoral section level). The RD estimates reported in the previous section provides the effect of rank for these elections, and hence we are interested in the within-constituency patterns for these cases. Finally, the dependent variable in equation (4) is only observable when the runner-up runs at *t+1*. Since the estimation exploits only within constituency-time variation, and the

[50] A voter can only change her section if she moves to an address sufficiently far from the original one (either within or outside the municipality). Moreover, the voter has to request the change of the voting section herself, so citizens who find it more convenient to continue to vote in their original section (as opposed to going through the re-registration process) will do so. There is no "redistricting" of electoral sections, and new sections are usually created to accommodate newly registered voters. There is no available data allowing us to identify voters in an electoral section across years, and assess the magnitude of migration across sections. Turnout is mandatory in Brazil, reducing concerns that the sets of voters that turn out in a particular section differ from previous years. Corroborating the notion that electoral sections mostly involve the same group of voters across years, we find a strong correlation between the vote share of specific candidates in a section across years, even when controlling for municipality-year (election) fixed effects.

[51] For example $v^2_{ij,t+1}$ is the vote share at time $t+1$ of the runner-up of the election that happened at time t (not *t+1*) in municipality j (she may not be the second most voted candidate in electoral section i).

decision to run cannot vary at this dimension, usual sample selection bias is not an issue. We also reiterate the descriptive nature of equation (4). The objective is not to uncover causal effects of increasing vote shares at t on vote shares at $t+1$, but whether or not, in the elections when the runner-up runs again, it is the case that (groups of) voters that voted for the third-place tend to switch to the runner-up. Our main sample is formed by 8,738 sections from 144 elections.[52]

Table 4 presents the results. Columns (1) - (4) present specifications where the dependent variable is runner-up vote share at time $t+1$. As a robustness check, columns (2) and (3) reduce the sample to elections where the vote share difference between second and third was less than 1% and 0.5%, respectively. Column (4) returns to column (1)'s sample, but now drops elections where there were exactly three candidates at time t, to make sure the effects are not driven by elections where voting for a fourth candidate was not an option. Columns (1) - (4) show very similar results: conditional on the vote share the runner-up received at time t, switching 1 p.p. vote share from first to third is correlated with approximately 0.15 p.p. increase in the runner-up's vote share at time $t+1$. The difference $\alpha_3 - \alpha_1$ is significant at the one percent level in all of these specifications. The coefficient α_3 is large and significant on its own, indicating that sections where the third-place candidate received a large vote share at time t are more likely to vote for the runner-up at time t, relative to electoral sections that voted more for candidates that came in fourth or below at time t. We also consistently find a large and positive coefficient α_2, suggesting strong serial correlation in voting behavior at the electoral section level.

Columns (5) and (6) present results from the same regression as in column (1), however now the dependent variable is the vote share of the third- and first-place candidate, respectively. It is interesting to note that in Column (5) we find greater votes for the runner-up is also correlated with greater votes for the third-place candidate at time $t+1$. One explanation for this result is that in some of these close second/third elections voters choose to coordinate on the third-place candidate (for example if the third-place candidate has some "focal" characteristic.) It is important to note that we do not observe a correlation between third-place's vote share at t and the first-place vote share at $t+1$ in Column (6); this suggests that our main result of voters switching from third to the runner-up is not driven by some general tendency of supporters of third-place candidates to switch more often than other voters. Instead, it appears that they tend to specifically switch to voting for the runner-up.

The findings in Table 4 are difficult to reconcile with an explanation entirely based on agents acting heuristically, and without strategic coordination, since such an explanation would have to disproportionately affect the supporters of third-place candidates. For example, suppose parties use a heuristic where they choose candidates based on rankings instead of underlying vote share,

[52] Inputting a $t+1$ vote share of zero for the cases where the runner-up does not run again does not change the qualitative results. The number of elections is smaller than in the overall municipal-level dataset not only because elections where the runner-up did not run are not included, but also because electoral section data is not available for all municipalities in all elections, particularly in the first year of data (1996).

and also provide more campaign inputs to higher ranked candidates. For this to explain the results in Table 4, it would also have to be the case that, at *t+1,* the parties/candidates use these additional inputs to specifically target those who voted for third-place at *t.* While it might be plausible parties would prefer not to target those that voted for time *t*'s winner, the results ($\alpha_3 > 0$) would also imply they are more likely to target supporters of the third- than the fourth- (and lower) place candidate.

5.1.2 Effect Heterogeneity by Strength of Second- and Third-Place Candidates

If the runner-up effect is driven by strategic coordination, one would expect the effect to be stronger in cases where the second- and third-place candidate together received a large number of votes. For example, if the election winner received 40% of the votes, and second- and third-place each obtained 25%, the incentive to coordinate is likely larger than if they both obtained 5% of the votes, since only in the former scenario could the combined second- and third-place vote share be plausibly larger than the winner's.

Table 5 presents estimates of the runner-up effect separately for elections where the second- and third-place candidates jointly received more votes than the first-place candidate, and elections where second- and third-place jointly received less than the leading candidate. We focus this heterogeneity test on the Brazilian and Indian samples as these offer the most power for detecting differences in subsamples. This definition of the subsamples leverages the notion of a possible "divided majority" splitting their votes. However, similar results are obtained by splitting the sample according to strength of specific ranks of candidates.[53]

In the Brazilian sample, the runner-up effect on running again is 10.8 p.p. when the combined vote share of second- and third-place is greater than the winner's vote share, but only 3.5 p.p. when it is not. The analogous effects for winning the next election are 9.3 p.p. and 3.6 p.p. These large (threefold) differences are consistent with the returns to coordinating being larger when the second- and third-candidates jointly have greater potential to defeat the first candidate. In our Indian state sample we again find a similar pattern, however, the differences are smaller (and not statistically distinct). However, the magnitudes are still sizable, with the effect on running being 50% larger in the strong second/third-place subsample, and the effects on winning being almost twice the size.[54]

[53]For example, breaking the sample according to strength of second-place yields similar results. This is also the case for using the third-place vote share (which close to the cutoff is similar to the runner-up's share), or the first-place vote share (which has a strong negative correlation with the second- and third-place's vote shares).

[54]To facilitate comparisons between results based on different subsamples, and also on the full sample, we use the optimal (IK) bandwidth estimated at the full sample (i.e., the same from Column 1 of Table 1) in all cases. The qualitative results are robust to several other choices of bandwidth.

5.1.3 Effect Heterogeneity by "Platform Distance" Between Second- and Third-Place Candidates

Ideally, the strategic coordination mechanism could be tested by identifying elections where the second- and third-place candidates are closer to forming a unified group that would gain from coordination, and checking if the results are driven by those elections. In reality, it is impossible to identify those cases, given the paucity of data and that politicians' and voters' preferences are unobservable. However, as an approximation, it is possible to test whether the runner-up effect differs in cases where the second- and third-place candidates are from parties with closer platforms. Hence, we classified the parties in the Brazilian and Indian state elections into three different groups each, based on multiple sources described in Appendix A.4. In Brazil, the three categories are "right", "center", and "left". The first category includes the Worker's Party (PT) as well as other parties with left-wing (communist/socialist) orientation. The "center" includes the centrist parties such as the PMDB and the social democrats (PSDB).The last group includes the right-wing parties with connections to the (extinct) ARENA party supported by the military regime. In the Indian case, the first group includes parties with communist/socialist orientation, the second group includes the Congress party, its off-shoots, and associates, and the last group includes the BJP, its off-shoots and associates, as well as other Hindu-nationalist parties.

This allows us to split each sample into two cases: one with the elections where the second- and third-place party are from the same group, and another where they are from distinct groups; we estimate runner-up effects in each of these sub-samples. It should be noted that any imprecision in the (admittedly rough) classification of party groups, as well as the instability and non-partisan nature of both Brazilian and Indian politics, make it less likely that we will find the expected heterogeneity in effect.[55]

Since we can only classify parties, and not candidates, we report results with dummies for whether or not the *party* ran, and won, the *t+1* election as the outcomes.[56] Table 6, Panel A, presents our results for the Brazilian case. The runner-up effect on both outcomes is approximately 7 p.p. when both parties are in the same category, but only 4 p.p. when the parties are from distinct groups.[57] In the Indian case, the runner-up effect on running at *t+1* is 6.9 p.p. when parties are

[55]In other words, we have a noisy measure of "true" party orientations in a given election, which weakens the distinction between two groups (e.g., if the measure is entirely noise, the same effects are expected in both subsamples).

[56]Hence, the results are comparable to the party-level results describe in Appendix A.2. Using party as outcomes also accommodates the impossibility of classifying independents and the need to drop them from estimations. As before, to facilitate comparisons between results based on different subsamples, and also on the full sample, we use the optimal (IK) bandwidth estimated at the full sample (i.e., the same from Column 1 of Table A.2) in all cases. The qualitative results are robust to several other choices of bandwidth.

[57]It should be noted that, given the frequency of party switching by Brazilian candidates across elections, the effects using party outcomes are smaller than those using candidate outcomes (i.e., estimates in Panel A of Table 1 are larger than those in Panel A of Table A.2). Substituting candidate outcomes for party outcomes in the estimation would yield a runner-up effect on running (winning) of 14.7 p.p. (13 p.p.) when both parties are in the same category, but only 6.7 p.p. (6 p.p.) when the parties are from distinct groups.

in the same group, but only a statistically insignificant 1.2 p.p. when they are in different groups. For winning, the respective effects are 4.6 p.p. and 2.5 p.p.. These results corroborate the notion that effects are larger in the cases the parties are "closer", and the incentives to coordinate likely larger.

5.1.4 Restarting the Coordination Game: The Indian State of Emergency

Under the coordination hypothesis, the runner-up effect emerges because of a coordination failure. Some agents would have preferred to coordinate on either the second- or third-place candidate, but failed to do so. As they learn more about parties and candidates and accumulate focal points, coordination should improve over time. And, conversely, a situation where the the "equilibrium" is disrupted by a major change in the strength of a party and/or the entrance of new parties should lead to an increased use of ranks as focal points, and hence a larger runner-up effect. In this section we focus on the Indian "emergency" period as an example where the political equilibrium was disrupted, and test whether the runner-up effect is larger immediately after it.

The Congress party dominated Indian politics from 1951 until 1975. In 1975-77 Congress Prime Minister Indira Gandhi imposed a 21 month period of "Emergency" where elections were postponed, the prime minister made laws by decree, media was repressed, and civil liberties were curbed. The stated purpose of the emergency was to improve economic performance by directly controlling the economy, reducing political protests and strikes, and forcing population control programs. When elections returned, Congress lost substantial support, to the gain of opposition and new parties. For our purposes, the Emergency can be seen as a disruption of the long-standing political equilibrium.

Table 7 presents estimates of runner-up effects in Indian state legislature elections separately for time periods around the Emergency. We do not find any evidence to suggest that the runner-up effect on running again was larger in the elections after the emergency.[58] This might not be too surprising, however, given that parties were also likely unaware of which party voters would coordinate on, and thus might be willing to take the risk of fielding a candidate. The runner-up effect on winning is 5.4 p.p. in the elections directly after the Emergency, which is large relative to the point estimates from other time periods in our sample. This suggests that coming in second-place was particularly advantageous in a period where the need for coordination focal points was useful.[59]

[58]The runner-up effects after the emergency measure the benefit of being labeled second in the first post-Emergency elections for outcomes in the next election (the second election after the Emergency).

[59]To facilitate comparisons between results based on different subsamples, and also on the full sample, we use the optimal (IK) bandwidth estimated at the full sample (i.e., the same from Column 1 of Table 1) in all cases. The qualitative results are robust to several other choices of bandwidth.

5.2 Heuristics

5.2.1 Media Driven Heuristic

One possible explanation for our results is runners-up receiving greater media attention after the election, and this translating into a higher perceived probability of winning in future elections. This seems plausible, as the media might choose to report on election results by only mentioning the top two candidates, and prior work has shown that media can have important impacts on electoral outcomes (DellaVigna and Kaplan, 2007; Enikolopov et al., 2011; Gentzkow, 2006; Gentzkow et al., 2011; Gerber et al., 2009; Prior, 2006; Strömberg, 2004). Observing media coverage of second- and third-place candidates also gives us an indirect measure of whether the runners-up secure other high profile positions in government or the private sector that gets them greater media coverage.[60]

We focus on the Canadian context, as this is the only case where it is feasible to electronically search for the mention of candidate names in a large set of local newspapers. We begin with the set of elections after 1979 where the second- and third-place candidates finished within one percent of each other.[61] We focus on close elections between second- and third-place as this is the sample where our identification of runner-up effects is based on. For each candidate we searched Lexis-Nexis for any newspaper article that included their first name, last name, and the name of their constituency, over the period three months prior to the election where the candidate placed second or third through to three months after the next election in the same constituency. We then count the number of articles mentioning the candidate in each month over this period.

Figure 4a plots the mean number of articles for second- and third-place candidates against months relative to the election at time t. The zero point on the x-axis represents the month of the election. The figure shows that both second- and third-place candidates have close to zero media mentions 3 months prior to the election. This increases to on average 0.4 articles per candidate two months before the election, 2 articles per candidate in the month before the election, and 9.5 articles per candidate in the month of the election. Given the small vote share difference between second- and third-place candidates, we would not expect any differences across these candidates prior to the election. In the months after the election both candidates receive close to zero articles per month on average. The fact that neither candidate receives any significant media attention in the months after the election suggests that the media may not be an important driver of the runner-up effects. This figure also suggests that close second-place candidates do not receive differentially more media attention versus close third-place candidates.

[60] Previous work has found mixed evidence on the impact of media on the size of the incumbency effect. Snyder and Strömberg (2010) and Prior (2006) find a positive but modest relationship between television presence and the incumbency effect, but Ansolabehere et al. (2006) finds no effect. Gentzkow et al. (2011) find no relationship between newspaper entry and exit on incumbency effects.

[61] Lexis-Nexis, our newspaper database, only provides coverage of Canadian newspapers after 1979.

Figure 4b plots the mean number of articles mentioning the second- or third-place candidate around the time period of the subsequent election in the same constituency. Note that in the full sample of Canadian elections from 1867 to the present we estimated that second-place candidates are approximately 4.6 p.p. more likely to run in the subsequent election in their constituency; when we restrict the sample to after 1979 (the years relevant for our newspaper comparison) we estimate second-place candidates are 2.5 to 3.5 percent (depending on the specification) more likely to run, significant at the 10 percent level. We would therefore expect second-place candidates to receive greater media attention prior to the next election. Figure 4b shows that both second- and third-place candidates from the election at time t receive very little media attention until just one month before the next election. On average, both second- and third-place candidates receive about 0.5 articles per candidate in the month before the next election, and 2 articles in the month of the next election.

Figure 4c again plots the mean number of articles mentioning the second- or third-place candidate around the time of the $t+1$ election, but here we only include candidates who ran again at time $t+1$. Even conditioning on those candidates who choose to run in the next election, both second- and third-place candidates receive no media mentions until the month right before the next election. This also suggests that it is unlikely that our runner-up effects are being driven by second-place candidates receiving substantially more media attention. In the month before the $t+1$ election these candidates receive between 1 and 2 media mentions, and in the month of the election at $t+1$ the candidates receive between 10 and 15 media mentions. A formal statistical test suggests that prior third-place candidates receive more media mentions than second-place candidates in time $t+1$ elections; however, we are hesitant to interpret this strongly as the sample here only includes eleven third-place candidates and eleven second-place candidates.

As a second test of the media hypothesis, we compare the size of the runner-up effects in constituencies with greater media presence. If media reporting drives awareness of second-place candidates versus third-place candidates, one would expect the runner-up effects to increase with the presence of local media. We focus these tests on the Brazilian and Indian state samples where we have the sample size to potentially distinguish effects across different media environments.

In Table 8, Panel A, we compare Brazilian municipalities with and without AM radio stations. Ferraz and Finan (2008) find that voters are more responsive to information from municipal government audits in municipalities with AM radio stations, so there is *a priori* evidence that AM radio coverage can have important political impacts. Contrary to the media coverage hypothesis, the runner-up effect on candidacy is larger in municipalities without AM radio (but not significantly different). The runner-up effects on winning are similarly sized and statistically indistinguishable.

In Table 8, Panel B, we test whether constituencies in Indian states with greater newspaper circulation have larger runner-up effects. To ensure that our measure of media presence is a meaningful signal of media attention we use the same measure of state level newspaper penetration as Besley and Burgess (2002), who show that states high on this measure have greater political responsiveness. We update this measure to 2013, and match each election in our Indian state data to the newspaper circulation measure in the closest available year. We then split the sample of elections into those that happened in state-years with above and below median newspaper circulation per capita. We find that, if anything, elections in state-years with greater than median newspaper circulation per capita demonstrate smaller runner-up effects.[62]

5.2.2 Party Heuristics: Elimination By Aspects

Thaler and Sunstein (2008) discusses another decision heuristic (first presented in Tversky and Kahneman (1981)), the "elimination by aspects" model, that might also be relevant to understanding runner-up effects. In this model a decision maker attempts to simplify a complicated choice problem by choosing a set of simple cutoffs and requiring any possible choices to meet all of those cutoffs. For example, in the case of finding a house, an individual might only consider houses within 20 miles of her office, less than 250,000 dollars, and with four bedrooms. Cutoff rules are added until the choice set is small enough to compare options on a broader set of characteristics.

In our case, it seems plausible that parties might use a candidate's previous rank as a simplifying cutoff when choosing which candidates receive tickets. As Thaler and Sunstein (2008) notes, such simplifying strategies can lead to welfare losses; in our case, high quality third-place candidates might be left out of the choice set. If the runner-up effect is primarily driven by parties using rank as an elimination aspect, then the results should be weaker for independent candidates. Figure A.9a presents graphical evidence on the size of the runner-up effect for independent candidates in our Indian state elections sample, which is the only sample with a large number of independents. The effect sizes here are very similar to those found in the full sample. This result makes it unlikely that a party based heuristic is the primary driver of the runner-up effect. It should also be noted that parties play a small role in local Brazilian politics (Ames, 2009), and party-level decision-making is unlikely to drive the results in that context too.

5.2.3 Outcome Bias

An additional psychological explanation is that instead of judging their performance in the election objectively based on vote share, candidates judge their performance in reference to a psychologically based counterfactual. Kahneman and Varey (1982) discusses how an agent's

[62] To facilitate comparisons between results based on different subsamples, and also on the full sample, we use the optimal (IK) bandwidth estimated at the full sample (i.e., the same from Column 1 of Table 1) in all cases. The qualitative results are robust to several other choices of bandwidth.

utility from an outcome is often both affected by the outcome as well as the agent's perception of the counterfactual had the outcome not occurred; for example in our context a second-place candidate might see their counterfactual as winning the race, but a third-place candidate sees their counterfactual as second-place. If candidates' perceptions of the counterfactual serve as motivation for whether to run again, then these differences in counterfactuals across second- and third-place candidates is a potential explanation for our results.[63]

Both of the psychological mechanisms mentioned above, and we suspect most psychological mechanisms that predict ranking matters beyond vote shares in this context, would also predict that third-place candidates should perform better than fourth-place candidates. As discussed earlier, we find little evidence supporting this. The finding of no third-place effect is, however, consistent with the strategic coordination mechanism; a tie between second- and third-place candidates fits better the description of a "divided majority" than a tie between third- and fourth-place. Finally, it is difficult to reconcile an explanation based on psychological mechanisms with the magnitude of runner-up effects. For example, if the effect is driven entirely by candidate motivation, the probability of winning the next election being more than 80% larger for close runners-up than close third-places in the Brazilian context implies candidate motivation has enormous, and likely implausible, consequences.

6 Conclusion

This paper documents the presence of runner-up effects: barely second-place candidates are more likely than barely third-place candidates to run in, and win, subsequent elections, even though both lost the (simple plurality) election. We apply this RDD analysis to four different contexts covering multiple continents, as well as local, state, and federal elections for executive and legislative positions.

Two major, non-exclusive, mechanisms that might explain the runner-up effect are strategic coordination and heuristics. While we believe more research is necessary to understand the relative roles of these mechanisms in determining the runner-up effect across various electoral contexts, the weight of our evidence suggests that strategic coordination plays an important role. In Brazil, we find that the effect is driven by voters switching from the third- candidate to the second-place candidate, as opposed to the latter gaining at the equal expense of all other candidates. Additional heterogenous treatment effect tests suggest that runner-up effects are stronger when the incentives for strategic switching to second-place are greater: when second-

[63]Medvec et al. (1995) finds that Olympians who come in second-place are not as happy as those who come in third-place; the authors argue that this difference in happiness occurs because silver medalists compare themselves to gold medalists, while bronze medalists compare themselves to the fourth place athlete who did not receive a medal.

and third-place have similar party platforms, when they have reasonable chance of beating the winner, and after the Indian emergency. In contrast, we find little evidence in favor of the heuristic based explanations, such as when we compare close third- and fourth-place candidates.

We conclude by highlighting two avenues for future research. The first is to study the implications of runner-up effects for the interpretation of incumbency effects, which have been documented in a wide variety of electoral settings. Our findings raise the possibility that the first-place ranking alone may drive part of it; perhaps winning an election makes a candidate a focal point for coordination, which in turn drives future electoral success. Consistent with this, Levitt and Wolfram (1997) find that a large fraction of the increase in the incumbency effect in U.S. House is explained by incumbents "scaring off" quality competitors.

In the context of Brazil and India, where there are incumbency disadvantages, our findings raise the possibility that the true anti-incumbency effects may actually be larger than those estimated in RDDs. If incumbents receive similar benefits of coming in first versus second as runners-up receive over third, then regression discontinuity designs may under-estimate the true disadvantage of being an incumbent. Exploring the connection between incumbency and runner-up effects appears to be an interesting area for future research.

A second avenue is to assess the welfare implications of the runner-up effect. An ideal political system would choose candidates based on their ability to govern; instead, we show that variation in previous electoral performance that is essentially noise has sizeable consequences. Such an arbitrary rule is unlikely to be optimal, as it does not take in to account politicians' ability to govern in individual cases. In describing ancient Athens, where politicians were selected at random from the population, Besley (2005) notes *"after all, selection by lot does not favor those with greater political competence over less.*"

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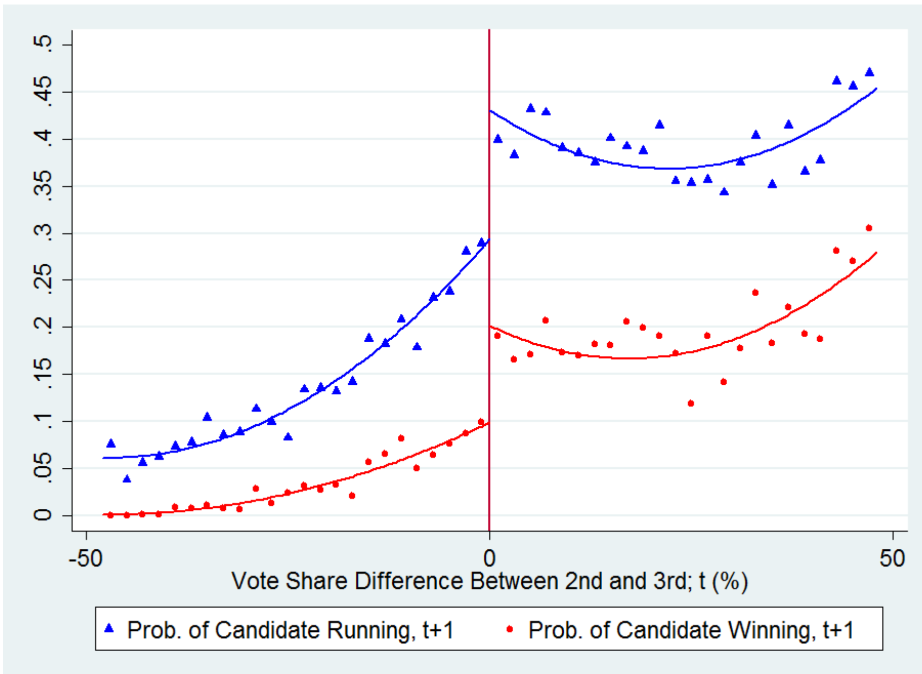
Figure 1 The Runner-up Effect (2nd vs. 3rd Place)

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed second and third at election t.

(a) Brazil



(b) India State

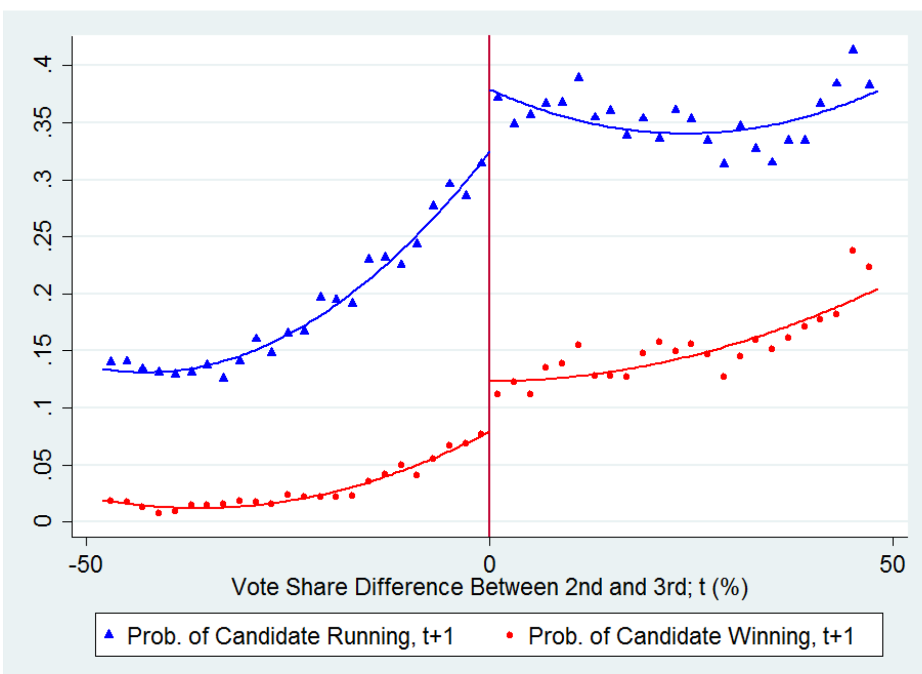
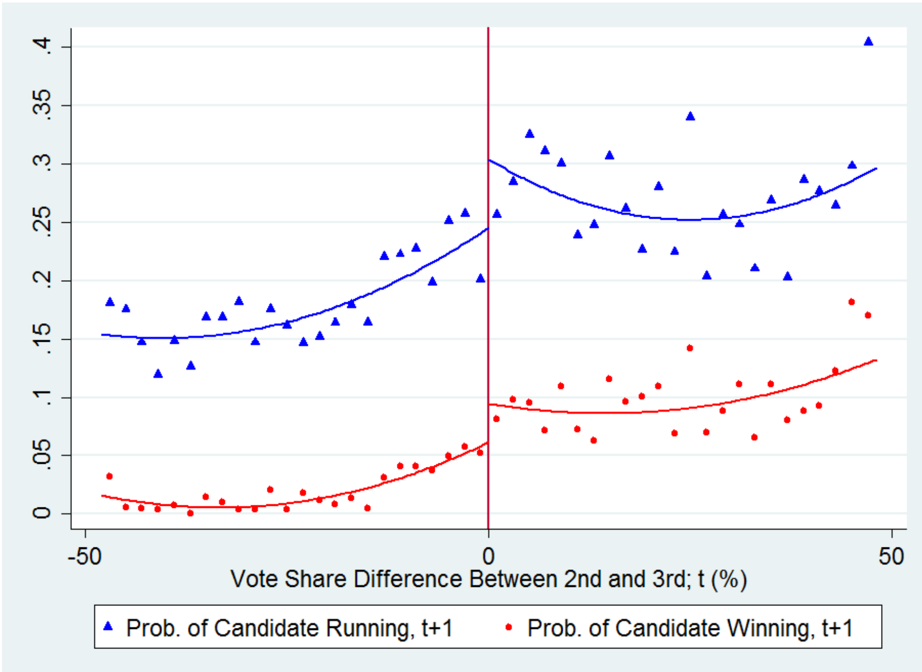


Figure 1 (continued) The Runner-up Effect (2nd vs. 3rd Place)

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed second and third at election t.

(c) India Federal



(d) Canada

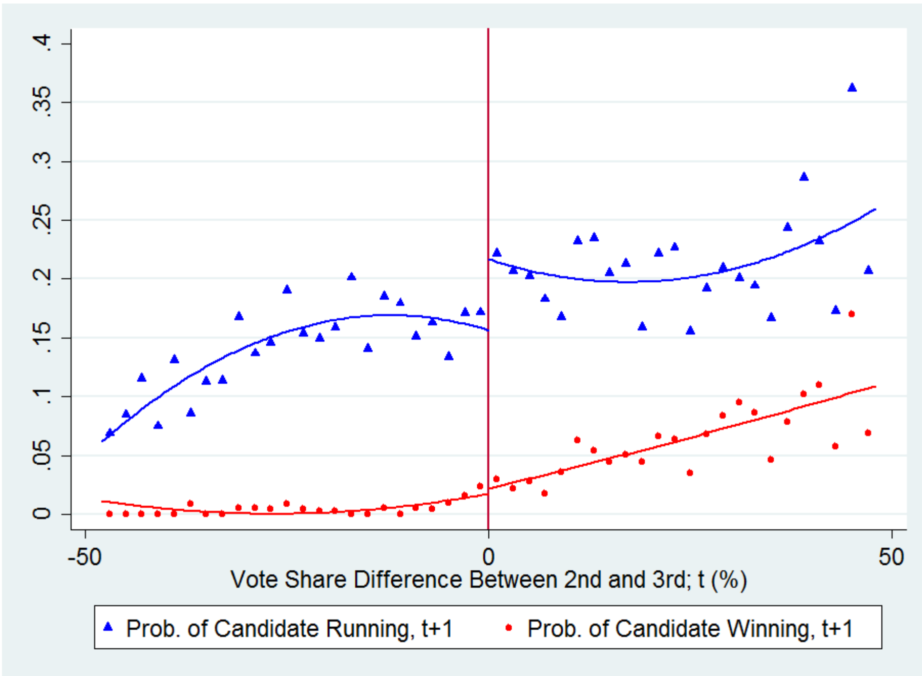
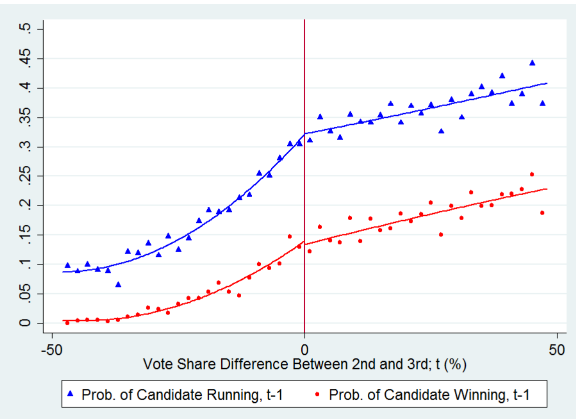


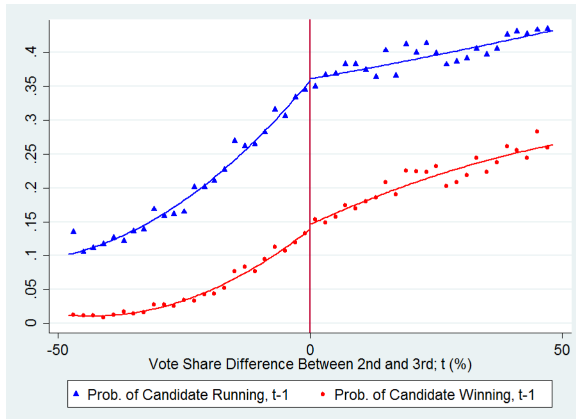
Figure 2 Covariate Smoothness (2nd vs 3rd place)

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the *past* (*t-1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed second and third at election t.

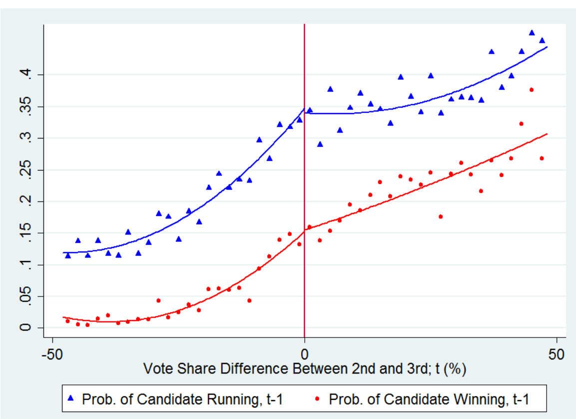
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

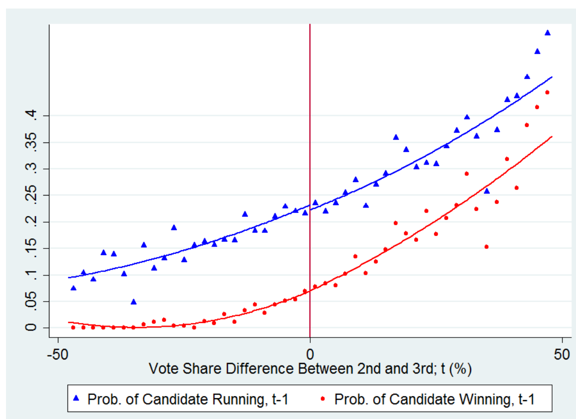
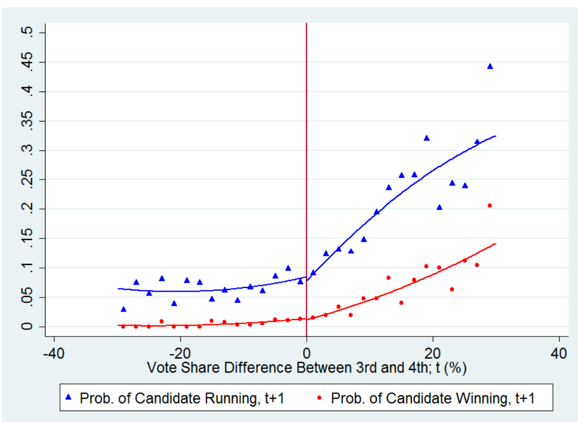


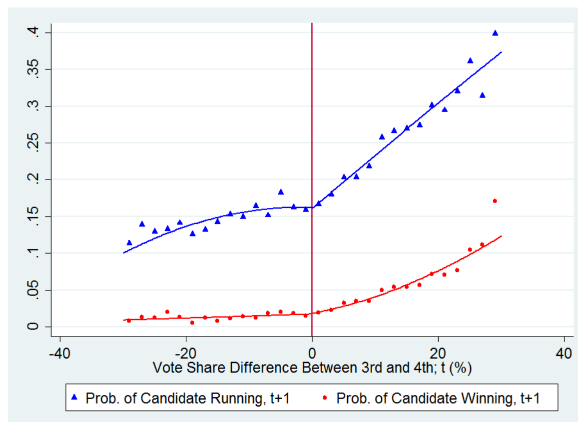
Figure 3 Effect of 3rd vs. 4th Place

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed third and fourth at election t.

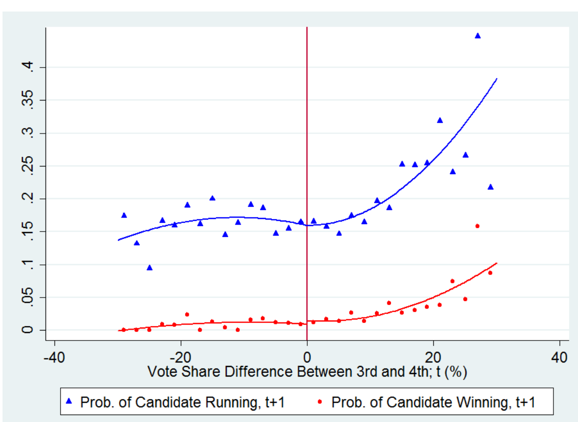
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

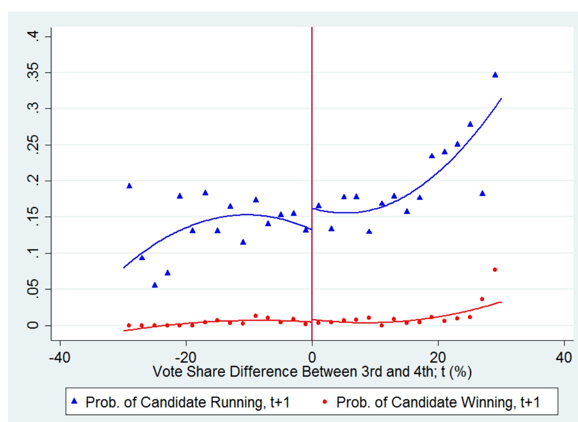


Table 1: The Runner-up Effect (2nd vs. 3rd Place)

Polynomial Order Bandwidth	3rd-pl. Mean	Optimal BW Value	One Optimal BW (1)	One $\frac{1}{2}\times$Optimal BW (2)	One $2\times$Optimal BW (3)	Zero 2 percent (4)	Two Full Sample (5)
Panel A: Brazil							
Candidacy, t+1 (%)	30.27	11.56	9.397***	6.295*	11.90***	11.05***	14.08***
		[N=5556]	(2.589)	(3.596)	(1.868)	(3.040)	(1.912)
Winner, t+1 (%)	9.448	12.57	8.310***	7.010***	8.844***	9.091***	10.49***
		[N=5946]	(1.809)	(2.541)	(1.290)	(2.265)	(1.395)
Panel B: India State							
Candidacy, t+1 (%)	31.92	9.139	4.391***	5.743***	5.037***	5.755***	5.490***
		[N=22518]	(1.131)	(1.567)	(0.834)	(1.175)	(0.790)
Winner, t+1 (%)	7.781	7.807	3.351***	3.297***	3.502***	3.453***	4.412***
		[N=19868]	(0.812)	(1.149)	(0.594)	(0.775)	(0.528)
Panel C: India Federal							
Candidacy, t+1 (%)	23.57	16.29	4.847**	2.374	5.748***	5.539*	5.817***
		[N=4394]	(2.432)	(3.262)	(1.773)	(3.243)	(2.178)
Winner, t+1 (%)	6.155	15.93	2.676*	2.811	3.211***	2.915	3.247***
		[N=4294]	(1.393)	(1.903)	(1.022)	(1.881)	(1.229)
Panel D: Canada							
Candidacy, t+1 (%)	16.79	12.22	4.617**	4.452*	4.591***	4.990**	5.986***
		[N=5190]	(1.841)	(2.548)	(1.471)	(2.250)	(1.606)
Winner, t+1 (%)	2.373	10.64	-0.195	-0.163	0.424	0.599	0.414
		[N=4612]	(0.863)	(1.220)	(0.576)	(0.999)	(0.662)

Standard errors clustered at the constituency level in parentheses. The unit of observation is a candidate. Outcomes measured as percentages. Each figure in columns (1)-(5) reports a separate local polynomial regression estimate with the specified bandwidth and polynomial order. Separate polynomials are fitted on each side of the threshold. "3rd-pl. Mean" is the estimated value of the dependent variable for a 3rd-placed candidate that "ties" with the 2nd-placed candidate, based on the specification in column (1). The optimal bandwidth (BW) is based on Imbens and Kalyanaraman's (2012) procedure, with the associated number of observations reported in brackets.

Table 2: Placebo Tests and Covariate Smoothness (2nd vs. 3rd Place)

Polynomial Order Bandwidth	3rd-pl. mean	Optimal BW Value	One Optimal BW (1)	Two Full Sample (2)
Panel A: Brazil				
Candidacy, t-1 (%)	31.17	21.69	0.888	0.00437
		[N=8790]	(1.858)	(1.845)
Winner, t-1 (%)	13.65	21.89	-0.243	-0.750
		[N=8840]	(1.438)	(1.430)
Vote Share, t-1 (%)	23.58	25.43	0.103	0.242
		[N=5272]	(1.053)	(1.141)
PMDB Party, t (%)	16.24	26.52	-0.450	-0.998
		[N=13398]	(1.283)	(1.395)
Panel B: India State				
Candidacy, t-1 (%)	34.93	18.17	0.965	0.285
		[N=36722]	(0.869)	(0.823)
Winner, t-1 (%)	13.48	13.80	1.100	0.654
		[N=30262]	(0.788)	(0.655)
Vote Share, t-1 (%)	9.740	13.27	0.322	0.269
		[N=29449]	(0.365)	(0.307)
Congress Party, t (%)	19.87	12.39	0.0587	-1.391*
		[N=32238]	(0.913)	(0.732)
Panel C: India Federal				
Candidacy, t-1 (%)	33.85	23.66	-0.940	-0.748
		[N=6036]	(2.403)	(2.502)
Winner, t-1 (%)	15.70	15.33	-2.032	0.117
		[N=4120]	(2.244)	(1.941)
Vote Share, t-1 (%)	10.86	22.49	-1.029	-0.769
		[N=5770]	(1.012)	(1.021)
Congress Party, t (%)	10.74	18.43	1.328	0.582
		[N=5850]	(1.695)	(1.648)
Panel D: Canada				
Candidacy, t-1 (%)	23.65	12.03	-0.464	-0.811
		[N=5322]	(2.365)	(1.833)
Winner, t-1 (%)	6.702	13.77	0.821	0.196
		[N=6000]	(1.318)	(1.224)
Vote Share, t-1 (%)	7.062	9.848	-0.826	-0.509
		[N=4434]	(0.928)	(0.658)
Liberal Party, t (%)	26.55	11.39	-1.477	0.629
		[N=5656]	(2.617)	(2.095)

See Table 1 notes for further description. Outcomes measured as percentages.

Table 3: Effect of 3rd vs. 4th Place

Polynomial Order			One	One	One	Zero	Two
Bandwidth			Optimal BW	$\frac{1}{2}\times$Optimal BW	$2\times$Optimal BW	2 percent	Full Sample
	4th-pl. Mean	Optimal BW Value	(1)	(2)	(3)	(4)	(5)
Panel A: Brazil							
Candidacy, t+1 (%)	8.736	10.64	0.0116	0.740	-0.403	1.513	-0.473
		[N=4768]	(1.358)	(1.697)	(1.141)	(1.383)	(1.375)
Winner, t+1 (%)	1.473	5.561	-0.340	0.137	-0.140	0.126	-0.0617
		[N=3138]	(0.749)	(0.910)	(0.595)	(0.605)	(0.670)
Panel B: India State							
Candidacy, t+1 (%)	15.46	3.066	1.106	2.675***	0.610	0.809*	-0.0375
		[N=27282]	(0.723)	(0.937)	(0.574)	(0.485)	(0.497)
Winner, t+1 (%)	1.481	3.743	0.148	0.215	0.128	0.385**	0.0843
		[N=30674]	(0.244)	(0.313)	(0.200)	(0.176)	(0.196)
Panel C: India Federal							
Candidacy, t+1 (%)	17.38	3.122	-0.506	-1.518	-0.419	0.0582	-0.0196
		[N=4286]	(1.905)	(2.285)	(1.465)	(1.279)	(1.284)
Winner, t+1 (%)	0.691	3.523	0.537	1.146*	0.255	0.291	0.488
		[N=4598]	(0.466)	(0.620)	(0.391)	(0.314)	(0.394)
Panel D: Canada							
Candidacy, t+1 (%)	13.65	10.44	2.148	3.790	1.021	3.327	2.369
		[N=4766]	(1.837)	(2.557)	(1.420)	(2.079)	(1.751)
Winner, t+1 (%)	0.489	11.74	-0.0458	0.104	-0.197	0.175	0.649
		[N=5240]	(0.308)	(0.350)	(0.268)	(0.304)	(0.420)

Standard errors clustered at the constituency level in parentheses. The unit of observation is a candidate. Outcomes measured as percentages. Each figure in columns (1)-(5) reports a separate local polynomial regression estimate with the specified bandwidth and polynomial order. Separate polynomials are fitted on each side of the threshold. "4th-pl. Mean" is the estimated value of the dependent variable for a 4th-placed candidate that "ties" with the 3rd-placed candidate, based on the specification in column (1). The optimal bandwidth (BW) is based on Imbens and Kalyanaraman's (2012) procedure, with the associated number of observations reported in brackets.

Table 4: Electoral Section Regressions (Brazil)

	2nd Place Vote Vote Share, t+1				3rd Pl. Vote Share, t+1	1st-Pl. Vote Share, t+1
	(1)	(2)	(3)	(4)	(5)	(6)
1st Place Vote Share, t (α_1)	-0.016	0.188***	0.217	-0.011	0.051	0.408***
	(0.038)	(0.052)	(0.154)	(0.038)	(0.054)	(0.032)
2nd Place Vote Share, t (α_2)	0.509***	0.650***	0.542***	0.495***	0.095*	-0.032
	(0.038)	(0.056)	(0.163)	(0.040)	(0.055)	(0.033)
3rd Place Vote Share, t (α_3)	0.142***	0.338***	0.346**	0.150***	0.523***	-0.005
	(0.039)	(0.055)	(0.163)	(0.040)	(0.052)	(0.032)
$\alpha_3 - \alpha_1$	0.158***	0.150***	0.129**	0.161***	0.472***	-0.413***
	(0.024)	(0.034)	(0.056)	(0.029)	(0.027)	(0.019)
Dep. Var. Mean.	34.6	33.6	35.2	32.4	31.3	46.0
Bandwidth	2 p.p.	1 p.p.	0.5 p.p.	2 p.p.	2 p.p.	2 p.p.
Excludes 3-candidate elections				Yes		
Municipality-time effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Elections	144	65	29	83	115	207
Observations (Sections)	8738	4113	1785	5958	6071	10267

Standard errors clustered at the electoral section level in parentheses. The unit of observation is an electoral section-year. Each column provides the estimate from a separate regression, with the dependent variable in the header and explanatory variables in rows. A bandwidth of x indicates that only elections with a vote share difference between 2nd and 3rd place smaller than x is included in the sample. All specifications include municipality-time fixed effects.

Table 5: The Runner-Up Effect by Strength of 2nd and 3rd Place Candidates

	Candidacy, t+1	Winner, t+1	Candidacy, t+1	Winner, t+1
Panel A: Brazil	$v_2 + v_3 > v_1$		$v_2 + v_3 < v_1$	
Runner-Up Effect	10.76***	9.333***	3.468	3.591
	(3.026)	(2.243)	(4.669)	(2.501)
Close 3rd-Place Mean	32.79	10.92	20.62	3.796
IK Bandwidth(%)	11.56	12.57	11.56	12.57
Observations	4174	4436	1382	1510
Panel B: India State	$v_2 + v_3 > v_1$		$v_2 + v_3 < v_1$	
Runner-Up Effect	4.732***	3.828***	3.417*	1.945*
	(1.412)	(1.072)	(1.826)	(1.088)
Close 3rd-Place Mean	35.89	9.487	22.93	3.847
IK Bandwidth	9.139	7.807	9.139	7.807
Observations	14776	13120	7740	6746

Standard errors clustered at the constituency level in parentheses. Outcomes measured as percentages. Estimates are based on local linear regression estimates. See Table 1 notes and main text for further description. $v_2 + v_3 > v_1$ ($v_2 + v_3 < v_1$) indicates the subsample where second and third placed candidates obtain more (less) votes than the winner.

Table 6: The Runner-up Effect by Party Platform Distance

	Candidacy, t+1	Winner, t+1	Candidacy, t+1	Winner, t+1
Panel A: Brazil (Party Outcomes)	$I^{2nd} = I^{3rd}$		$I^{2nd} \neq I^{3rd}$	
Runner-Up Effect	7.441*	7.531**	3.952	4.157*
	(4.027)	(3.147)	(2.980)	(2.262)
Close 3rd-Place Mean	37.95	10.88	37.74	12.26
IK Bandwidth(%)	13.75	13.24	13.75	13.24
Observations	2132	2056	4242	4112
Panel B: India State (Party Outcomes)	$I^{2nd} = I^{3rd}$		$I^{2nd} \neq I^{3rd}$	
Runner-Up Effect	6.895***	4.616**	1.198	2.509
	(2.008)	(1.912)	(1.771)	(1.799)
Close 3rd-Place Mean	54.23	11.87	64.25	15.98
IK Bandwidth	11.92	9.190	11.92	9.190
Observations	7054	5766	8914	7344

Standard errors clustered at the constituency level in parentheses. Outcomes measured as percentages. Estimates are based on local linear regression estimates. See Table 1 notes and main text for further description. $I^{2nd} = I^{3rd}$ ($I^{2nd} \neq I^{3rd}$) indicates the subsample where second and third placed candidates are in the same (separate) party platform category.

Table 7: The Runner-Up Effect by Period (Indian State Elections)

	1951-63	**1964-75**	**Elections After Emergency State 1977-1978**	**1979-91**	**1992-2012**
Candidacy, t+1	3.300	3.372	2.406	4.231*	6.079***
	(3.083)	(2.384)	(3.396)	(2.184)	(2.171)
Close 3rd-Place Mean	16.68	26.76	24.41	33.74	40.09
IK Bandwidth	9.139	9.139	9.139	9.139	9.139
Observations	2286	4596	2248	6202	7186
Winner, t+1	4.318**	1.191	5.245**	3.512**	3.661**
	(1.862)	(1.724)	(2.377)	(1.539)	(1.637)
Close 3rd-Place Mean	2.928	7.995	3.981	7.951	9.990
IK Bandwidth	7.807	7.807	7.807	7.807	7.807
Observations	2010	4064	1956	5488	6350

Standard errors clustered at the constituency level in parentheses. Outcomes measured as percentages. Estimates are based on local linear regression estimates. See Table 1 notes and main text for further description.

Table 8: The Runner-Up Effect by Media Presence

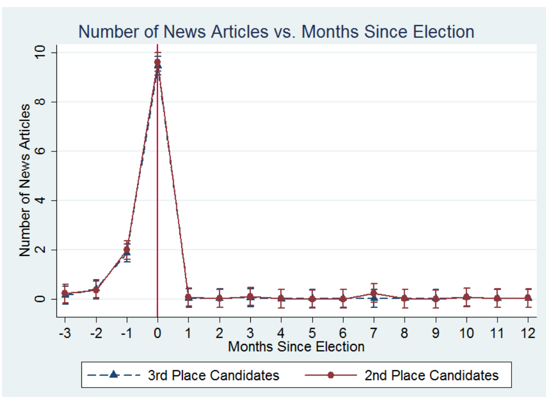
	Candidacy, t+1	Winner, t+1	Candidacy, t+1	Winner, t+1
Panel A: Brazil	Towns Without AM Radio		Towns With AM Radio	
Runner-Up Effect	10.55***	8.364***	6.977	8.197***
	(3.139)	(2.230)	(4.568)	(3.091)
Close 3rd-Place Mean	28.74	10.72	33.48	6.757
IK Bandwidth(%)	11.56	12.57	11.56	12.57
Observations	3774	4046	1782	1900
Panel B: India State	< Median State Newspaper Circulation		> Median State Newspaper Circulation	
Runner-Up Effect	5.371***	4.111***	3.222**	2.422**
	(1.570)	(1.158)	(1.624)	(1.136)
Close 3rd-Place Mean	35.12	8.131	28.13	7.340
IK Bandwidth	9.139	7.807	9.139	7.807
Observations	11700	10382	10818	9486

Standard errors clustered at the constituency level in parentheses. Outcomes measured as percentages. Estimates are based on local linear regression estimates. See Table 1 notes and main text for further description.

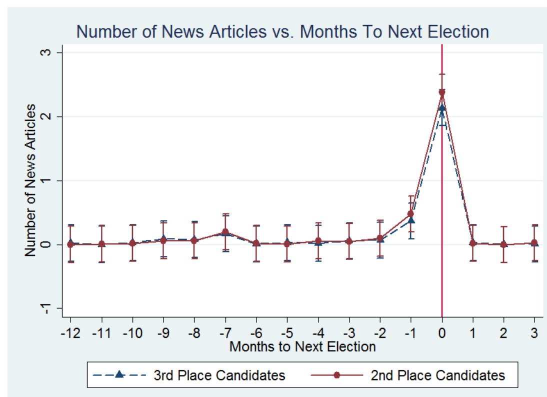
Figure 4 Number of Newspaper Articles for 2nd and 3rd Place Canadian Candidates

Panel (a) plots the average number of newspaper articles for close 2nd and 3rd place Canadian parliament candidates in the months before and after the election in which they nearly tied for 2nd place. Panel (b) plots the number of articles for those same candidates around the next election. Panel (c) is the same as Panel (b), except it only includes candidates that chose to run in the next election.

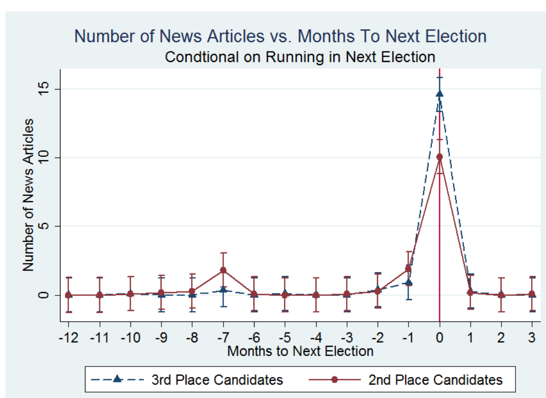
(a) Articles after election at t



(b) Articles before election at $t+1$



(c) Articles before election at $t+1$, conditional on running in next election



Online Appendix (Not for Publication)

A.1 Derivation of Equation 3

The object of interest is:

$$E[W_1 - W_0|x = 0, R_1 = 1] = E[W_1|x = 0, R_1 = 1] - E[W_0|x = 0, R_1 = 1]$$

The first term on the right side can be expressed as:

$$\frac{\text{Prob}[(W_1 = 1) \cap (R_1 = 1)|x = 0]}{\text{Prob}[R_1 = 1|x = 0]} = \frac{E[W_1 R_1|x = 0]}{E[R_1|x = 0]}$$

The second term can be expressed similarly and further rearranged:

$$\frac{\text{Prob}[(W_0 = 1) \cap (R_1 = 1)|x = 0]}{\text{Prob}[R_1 = 1|x = 0]} =$$

$$= \frac{\text{Prob}[(W_0 = 1) \cap (R_0 = 1; R_1 = 1)|x = 0] + \text{Prob}[(W_0 = 1) \cap (R_0 = 0; R_1 = 1)|x = 0]}{\text{Prob}[R_1 = 1|x = 0]} =$$

$$\frac{E[W_0 R_0|x = 0] + \text{Prob}[(W_0 = 1) \cap (R_0 = 0; R_1 = 1)|x = 0]}{E[R_1|x = 0]}$$

where the last step uses the assumption of no defiers. Finally, note that:

$$\text{Prob}[(W_0 = 1) \cap (R_0 = 0; R_1 = 1)|x = 0] =$$
$$\text{Prob}[W_0 = 1|R_0 = 0; R_1 = 1|x = 0] \cdot \text{Prob}[R_0 = 0; R_1 = 1|x = 0] =$$
$$E[W_0|R_1 > R_0, x = 0] \cdot \text{Prob}[R_1 > R_0|x = 0]$$

Combining these we obtain equation 3:

$$\frac{1}{E(R_1|x = 0)}[E(W_1 R_1 - W_0 R_0|x = 0) - \text{Prob}(R_1 > R_0|x = 0) \cdot E(W_0|x = 0, R_1 > R_0)]$$

A.2 Party Level Outcomes

Figure A.7 presents a graphical analysis of whether a party that comes in close second-place is more likely to run in, and win, a subsequent in election. The figures for Brazil, India State, and

India Federal show reasonably clear discontinuities at the transition from third to second-place, suggesting that a party that barely comes in second versus third-place is more likely to field a candidate in the next election, and that candidate is more likely to win the next election. For Canada, however, the figure shows little evidence of a difference between close second and third parties on future outcomes.

Table A.2 presents our regression discontinuity estimates of these effects. For Brazil, the runner-up effect on a party running in the next election is 4.8 p.p., which is approximately half the size of the runner-up effect on a candidate running in the next election (9.4 p.p. - Table 1). Similarly, the runner-up effect on a party winning the next election (5.6 p.p.) is approximately 67 percent the size of the runner-up effect on a candidate winning the next election (8.3 p.p.). As mentioned in the text, the likely reason for the smaller magnitudes when we use party versus candidate outcomes in Brazil is that 37% of second- and third-place candidates switch parties.

In the Indian state sample, we find the effect sizes using party outcomes are similar to those when we use candidate outcomes. Using party outcomes, the runner-up effects on running again and winning the next election are 3.6 p.p. and 3.8 p.p.; these are quite close the corresponding effect sizes using candidate outcomes (Table 1).

In the Indian federal sample, the point estimates using party outcomes are smaller than those using candidate outcomes, but still positive. The statistical significance of these estimates varies more with the specific bandwidth chosen for estimation. Close second parties are 2.2 p.p. (1.3 p.p.) more likely to run (win) than close third parties, whereas close second candidates are 4.9 p.p. (2.7 p.p.) more likely to run (win). Consistent with Figure A.7, in Table A.2 we find no evidence that Canadian parties that barely come in second-place are more likely to run in or win future elections.

Table A.3 presents regression discontinuity tests of balance on pre-existing party characteristics. For the Brazilian and Indian state elections we find no significant differences in past candidacy, winning, major party, or vote share. For the India Federal election, the quadratic specification suggests that close second-place parties were more likely to have won the previous election. However, visual inspection of Figure A.8c, suggests that this significant effect is being driven by quadratic functional form fitting curve better away from the cutoff. In particular, the quadratic functional form takes a linear shape to fit the pattern away from the cutoff, but this causes it to miss the non-linearity close to the right hand side of the cutoff. In Canada, we find a 10% significant difference in the optimal bandwidth specification on candidacy in the past election. However, inspection of Figure A.8d does not suggest an imbalance. Lastly, we find close second-place parties have lower vote share both in the optimal bandwidth and quadratic specifications in the Canadian sample. Figure A.10 provides the relevant plot for this outcome. An imbalance is not clearly visible, and the discontinuity seems to be driven by observations in the bin immediately to the right of the cutoff; there are other variations across individual bins of similar magnitude. When conducting a large number of balance tests over multiple outcomes and samples some spurious significant results are expected, and so we do not conclude that electoral manipulation and/or imbalance is an issue.

A.3 UK House of Commons Results

Elections to the UK House of Commons are scheduled every five years, but can happen more frequently in the case of failure to form a government. Our UK Parliament data covers the universe of elections, including bye-elections, for the period 1931 - 2010.[64] We again match candidates over time using their names, and define a candidate as running again if we find a match for them in the next election.[65] We also match constituencies by name, considering constituencies with the same name over years as the same constituency. We have a total of 40,206 candidates in the UK data contesting in 11,609 elections across 1,345 constituencies. 8,384 elections had three or more candidates and at least one subsequent election.

Figure A.11a presents a graphical analysis of the probability that U.K. parliamentary candidates will run in, and win, the next election in their constituency. The triangle figures and fitted curves show there is a small increase in the probability that a runner-up candidate runs in the next election. The estimated effect is 3.2 p.p. in the optimal bandwidth specification and close to significant at the 10 percent level (p-value = 10.2%). The point estimates using other bandwidths are generally small and positive, although they are never statistically significant at the 5 percent level.

The circle figures and fitted curve suggest that close second-place candidates in the UK are not more likely to win future elections, and this result is also confirmed when we estimate the effect size in a regression-discontinuity model. It is perhaps unsurprising that we do not find an effect, given that close second- and third-candidates have such a low probability of winning in general (less than 2 percent). In this sense the British case is more similar to the American one, in that in situations where second- and third-candidates get similar amounts of votes, the third-place candidate is really not a viable candidate in future elections.

[64] We do not use the CLEA data for U.K. elections because it is missing candidate names for a large fraction of elections. For election years 2005 and 2010 our data come from the UK electoral commission (`http://www.electoralcommission.org.uk/our-work/our-research/electoral-data`). For election years 1931-2001 our data come from the Politics Resources website (`http://www.politicsresources.net/area/uk/`). Our U.K. by-elections data come from (`http://web.archive.org/web/20131014014802/http://by-elections.co.uk/links.html`).

[65] Our manual check procedure finds that our algorithm correctly identified whether a candidate ran again or not in the next election for 100 percent of sampled UK candidates.

A.4 Categorization of Party Platforms

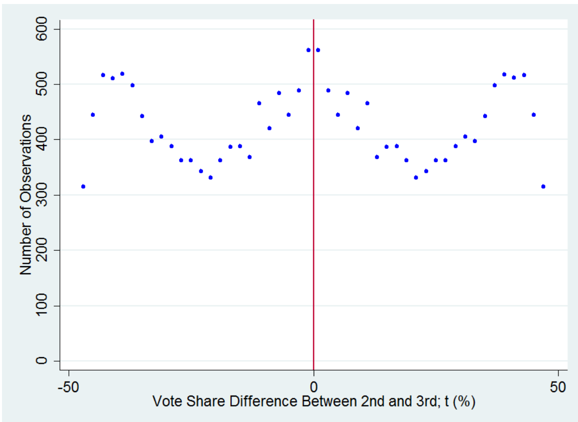
We categorized all Brazilian parties that fielded a candidate in a mayoral election in our samples into three categories, which could be labeled as "left", "center", "right". We follow the discussion in Power and Zucco (2009), supplemented with web searches for (small) parties missing in their analyses.

We also categorized parties in Indian state elections into three categories. The first group includes parties with communist/socialist orientation, the second group includes the Congress party, its off-shoots, and associates, and the last one includes the BJP, its off-shoots and associates, as well as other Hindu-nationalist parties. This definition, and the coding of several large parties is from Singh and Saxena (2011). We also coded many remaining parties using a protocol that sequentially i) assigned parties with mentions to communism and socialism in their name to the first group, ii) checked if the party's entry on Wikipedia mentioned an orientation, parties with socialist/communist/left-wing orientation were assigned to the first group, parties with center/center-left/center-right/populist/social democracy as orientation to the second group, and those with right-wing orientation to the last group, and finally iii) if the party's Wikipedia page mentioned associations with another categorized party, they were assigned to that group. Associations are mergers, splits from, or common coalition formation.

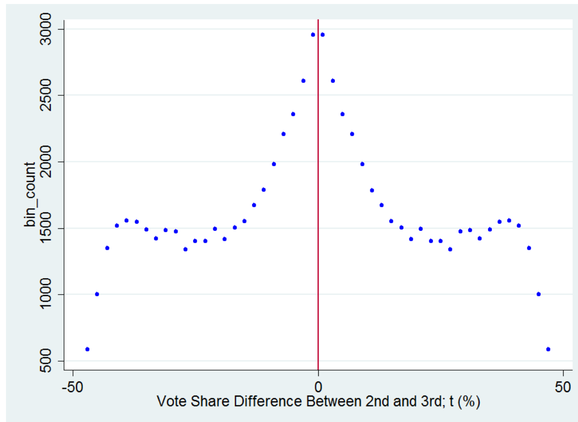
Figure A.1 Density of Running Variable

Circles represent the number of candidates within 2 p.p. bins of vote share difference between 2nd and 3rd placed candidate (the running variable in the RDD).

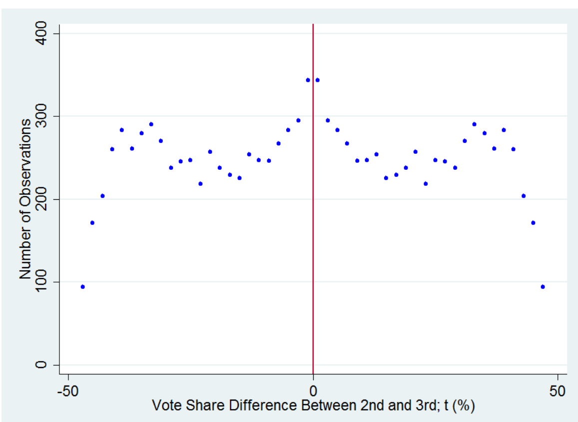
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

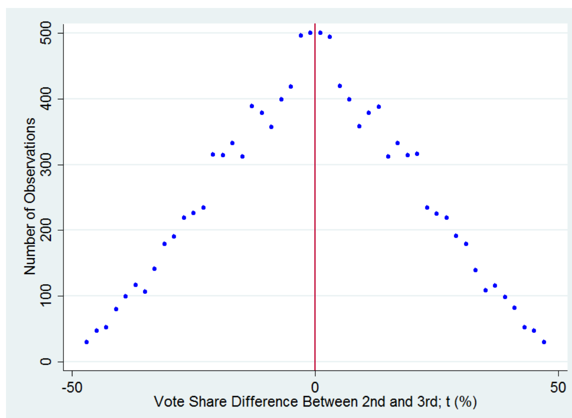
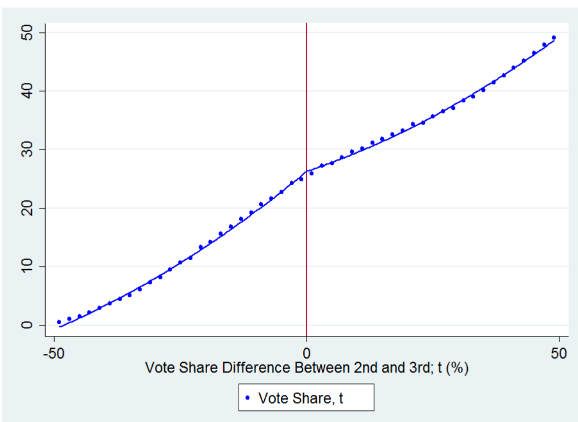


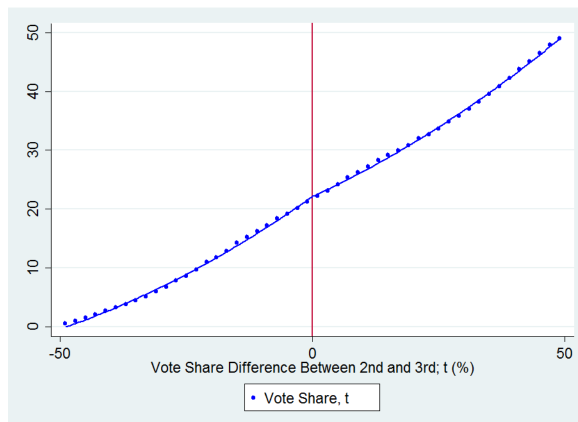
Figure A.2 Vote Shares of 2nd and 3rd Candidate

Circles represent the local averages of candidate vote shares at the t election. Averages are calculated within 2 p.p. bins of vote share difference (x-axis). Votes shares are measured as percentages. Continuous lines are a quadratic fit over the original (unbinned) data.

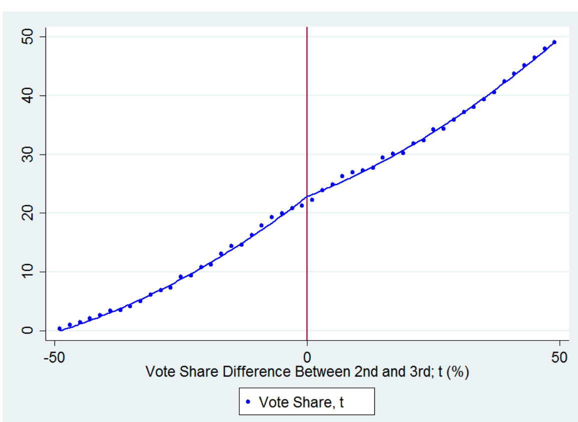
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

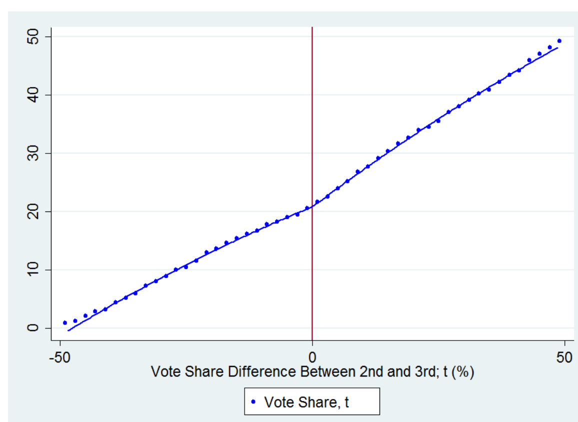
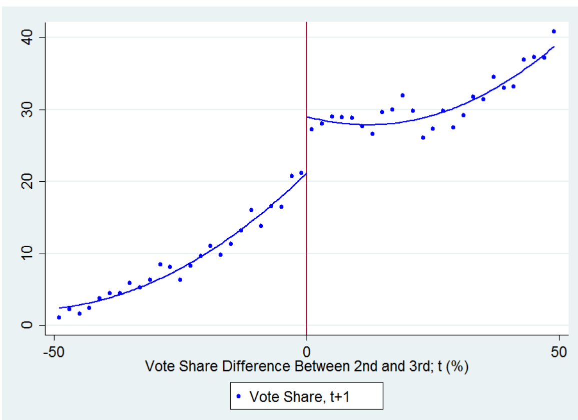


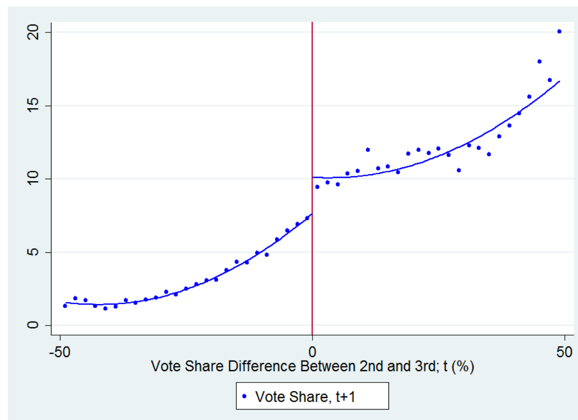
Figure A.3 Vote Share of 2nd and 3rd Candidate, t+1

Circles represent the local averages of candidate vote shares at the next (*t+1*) election. Averages are calculated within 2 p.p. bins of vote share difference (x-axis). Votes shares are measured as percentages, candidates not running at *t+1* are assigned a vote share of zero. Continuous lines are a quadratic fit over the original (unbinned) data.

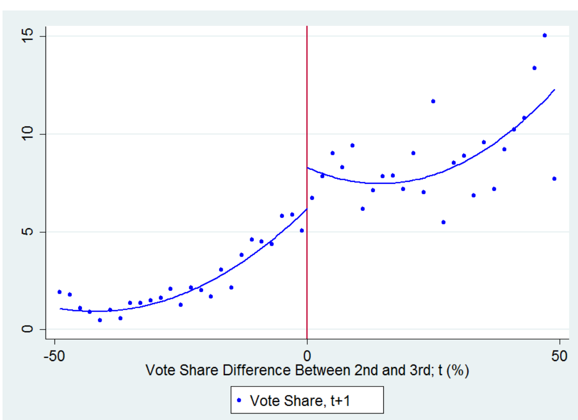
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

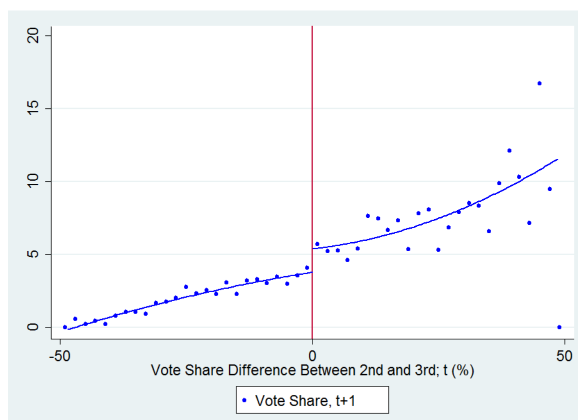
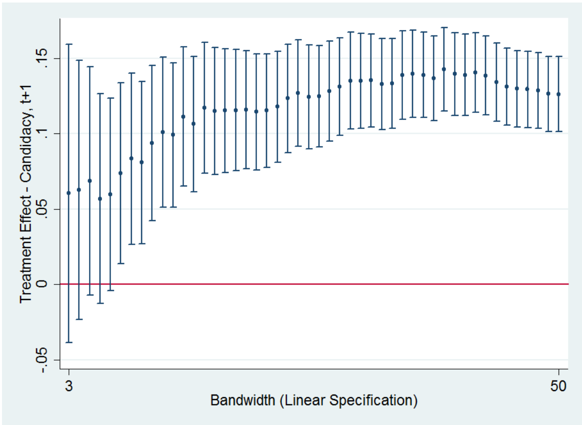


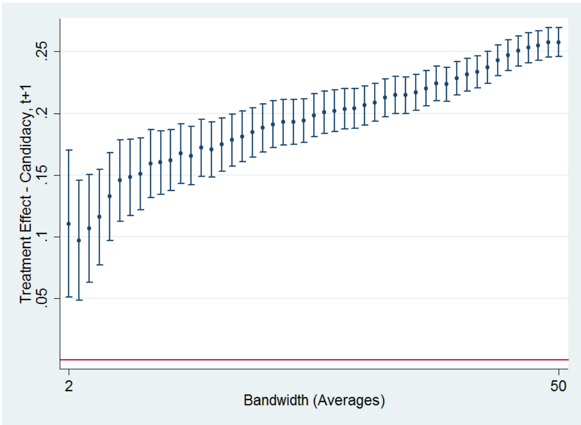
Figure A.4 Robustness to Bandwidth Choice - Brazil

Circles represent the estimated treatment effect of being 2nd place using different bandwidth choices (x-axis). Lines represent the 95% confidence interval (standard errors clustered at the constituency level). We report all possible cases for in integer bandwidth values (1,2,...50), except those with small sample sizes (below 300 for the zero order polynomial, below 600 for the first order polynomial).

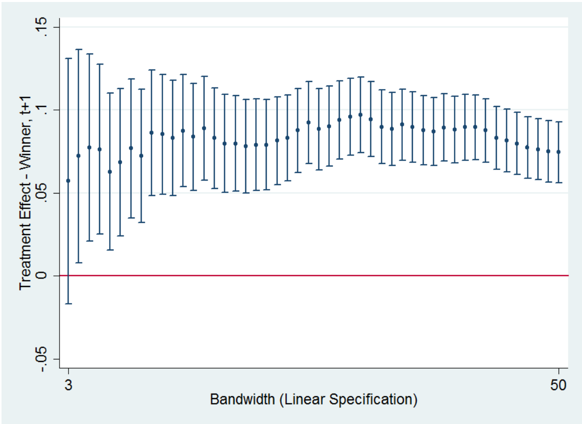
(a) Outcome: Candidacy, *t+1*; Poly. Order: 1



(b) Outcome: Candidacy, *t+1*; Poly. Order: 0



(c) Outcome: Winner, *t+1*; Poly. Order: 1



(d) Outcome: Winner, *t+1*; Poly. Order: 0

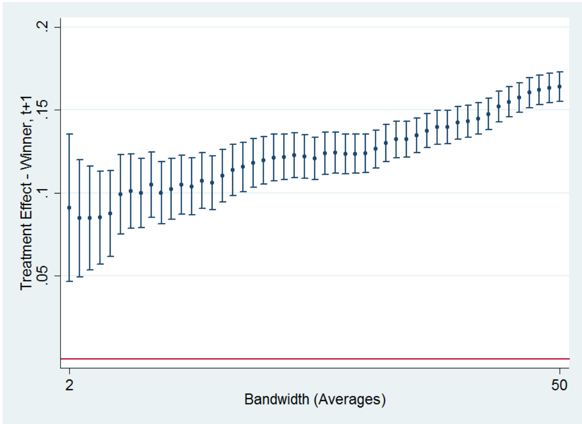
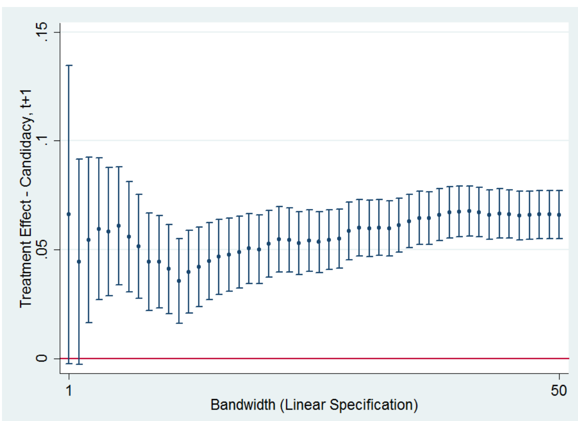


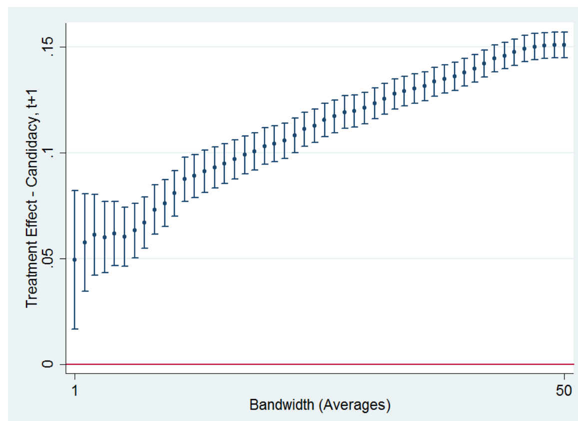
Figure A.5 Robustness to Bandwidth Choice - India State

Circles represent the estimated treatment effect of being 2nd place using a different bandwidth choice (x-axis). Lines represent the 95% confidence interval (standard errors clustered at the constituency level). We report all possible cases for in integer bandwidth values (1,2,...50), except those with small sample sizes (below 300 for the zero order polynomial, below 600 for the first order polynomial).

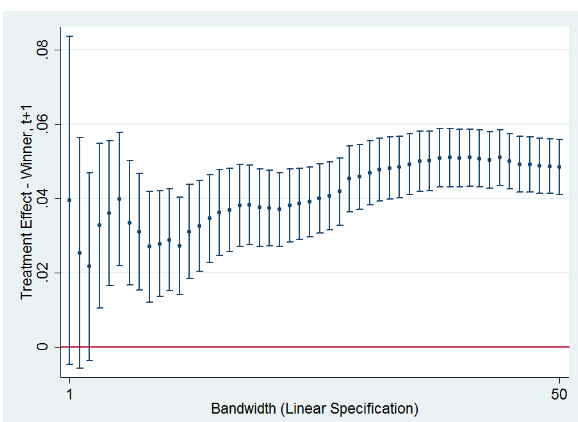
(a) Outcome: Candidacy, *t+1*; Poly. Order: 1



(b) Outcome: Candidacy, *t+1*; Poly. Order: 0



(c) Outcome: Winner, *t+1*; Poly. Order: 1



(d) Outcome: Winner, *t+1*; Poly. Order: 0

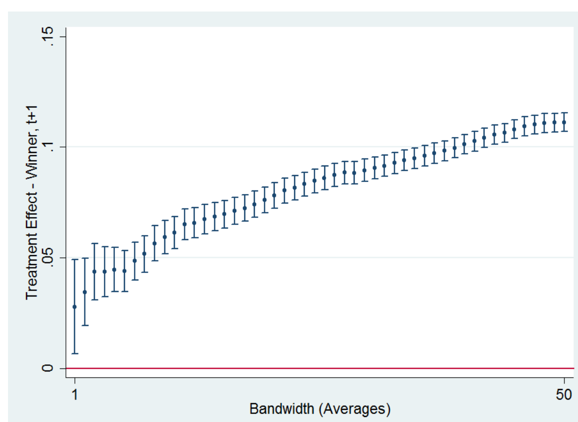
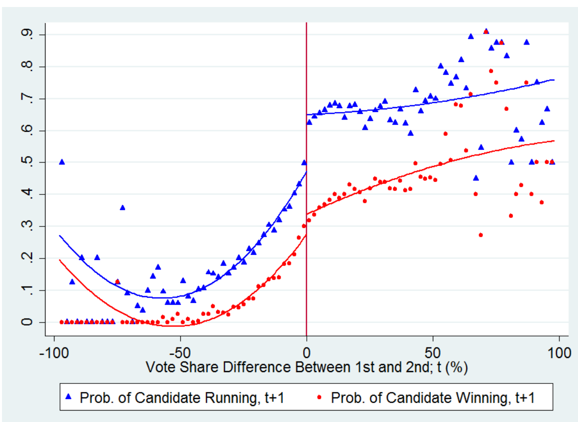


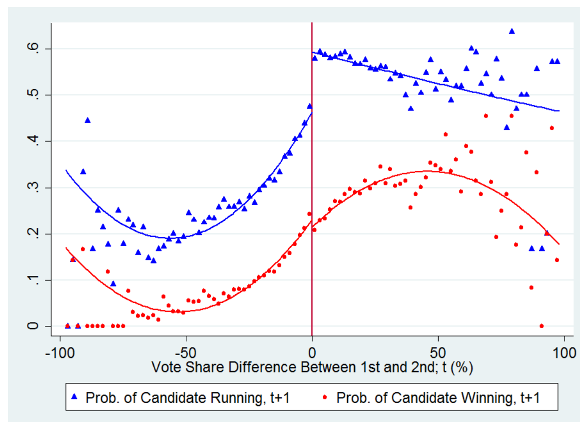
Figure A.6 Effect of 1st vs 2nd

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed first and second at election t.

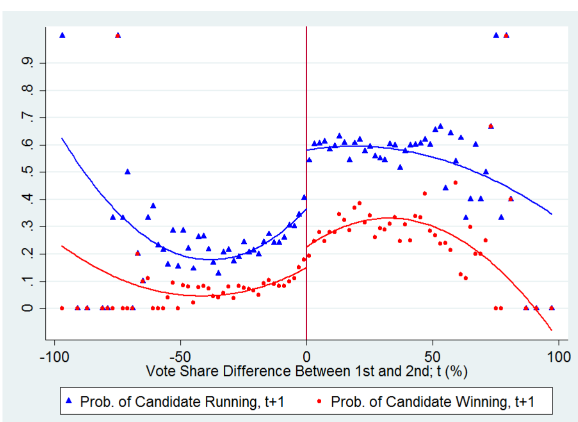
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

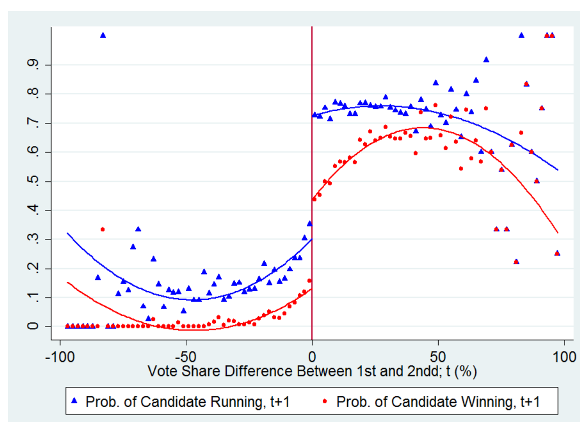
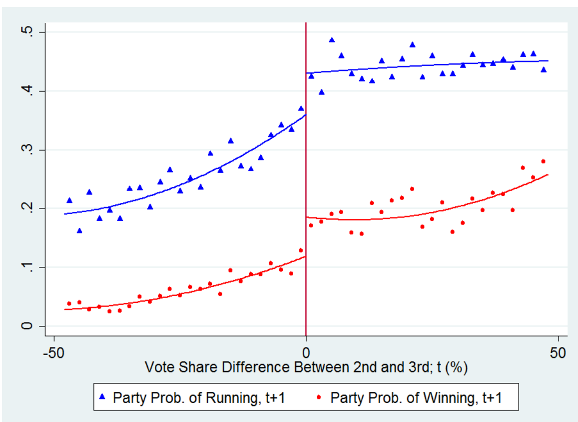


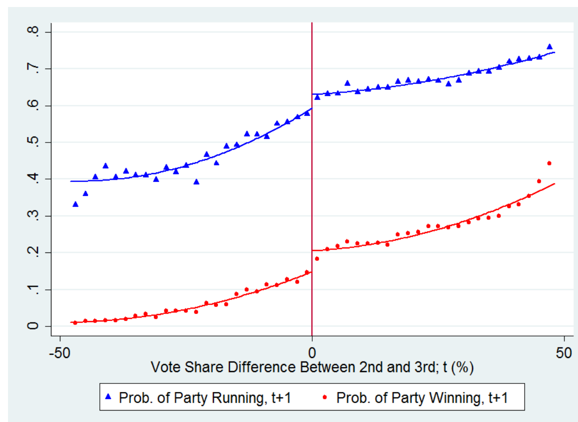
Figure A.7 Effect of 2nd vs 3rd, Party Outcomes

Triangles (circles) represent the local averages of a dummy indicating whether the *party* ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only *parties* placed second and third at election t.

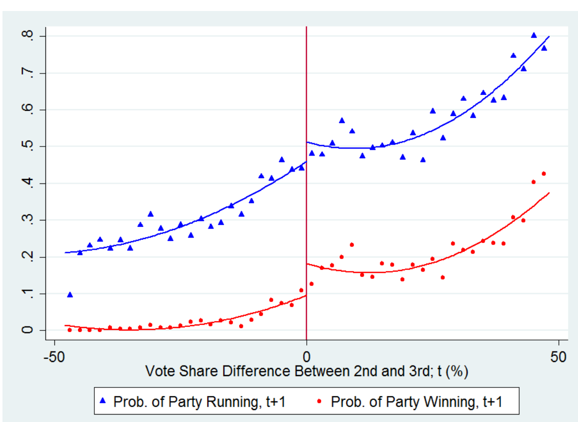
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

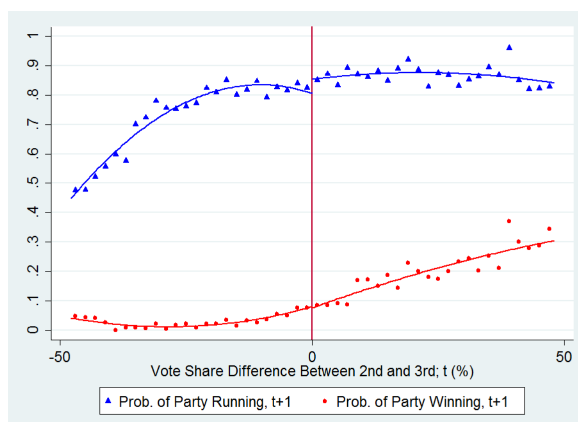
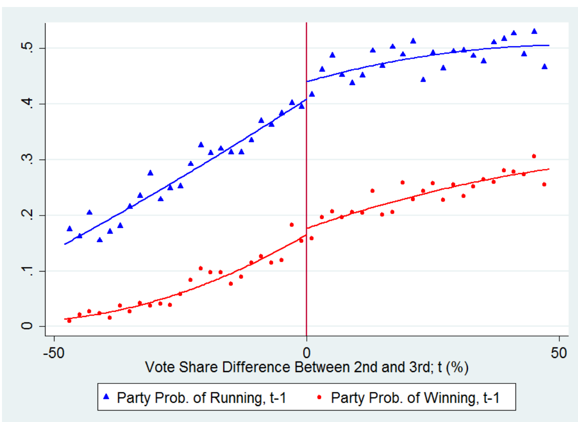


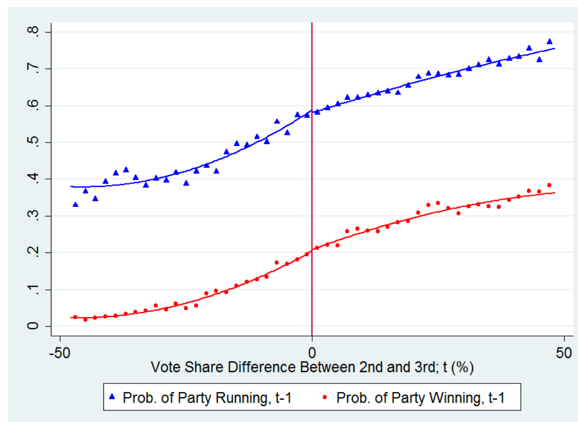
Figure A.8 Covariate Smoothness, 2nd vs 3rd, Party Outcomes

Triangles (circles) represent the local averages of a dummy indicating whether the *party* ran in (won) the past (*t-1*) election. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only *parties* placed second and third at election t.

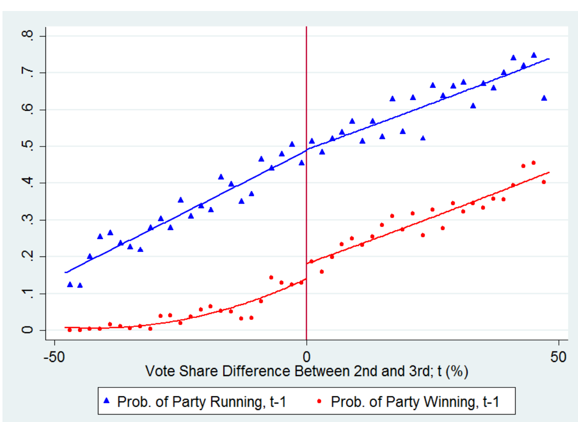
(a) Brazil



(b) India State



(c) India Federal



(d) Canada

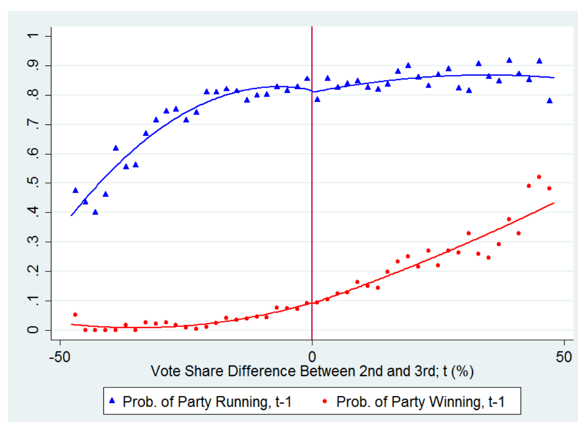
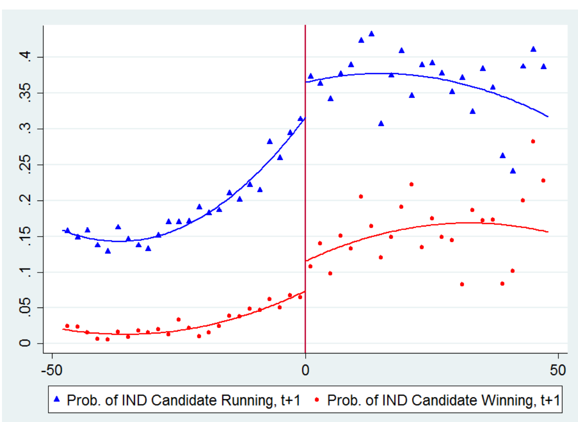


Figure A.9 Runner-Up Effect for Independent Candidates, India State

Triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (*t+1*) election. Averages are calculated within 2 p.p. bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only *independent* candidates placed second and third at election *t*.

(a) Runner-up Effect (*t+1*)



(b) Placebo Test (*t-1*)

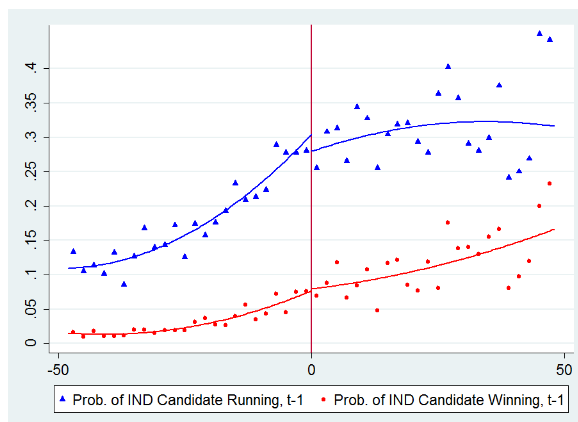
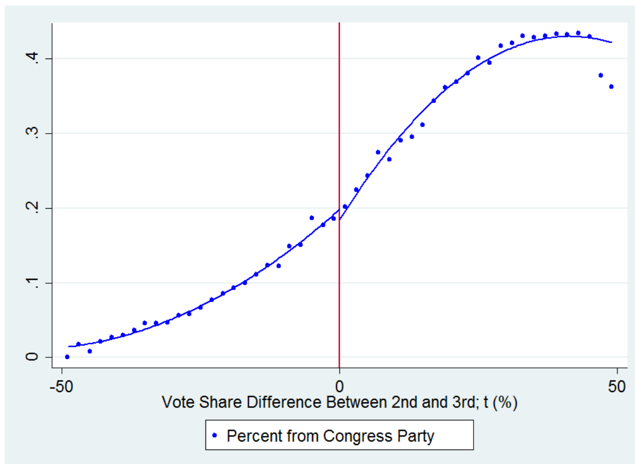


Figure A.10 Additional Covariate Smoothness Figures

In Panel (a) circles represent the local averages of a dummy for whether the candidate was from the Congress Party in vote shares at the t India state election. In Panel (b) circles represent the local averages of voteshare of candidates in the past election. Averages are calculated within 2 p.p. bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data.

(a) India State: Fraction of Congress Candidates



(b) Canada: Party's Voteshare In Last Election

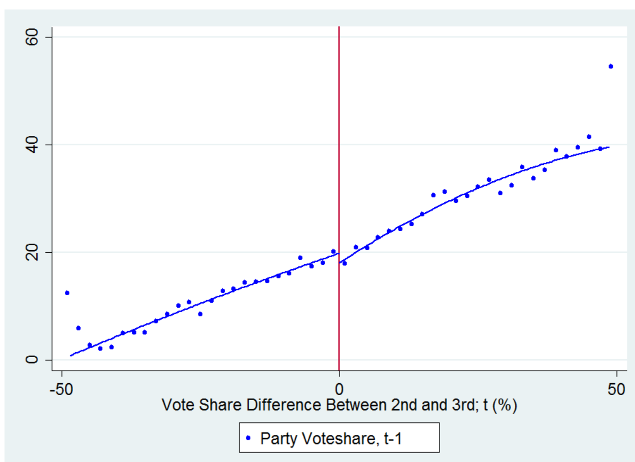
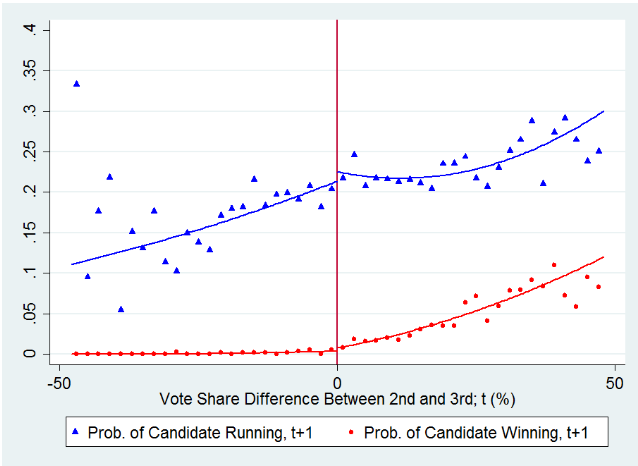


Figure A.11 United Kingdom: Effect of 2nd vs 3rd

In Panel (a), triangles (circles) represent the local averages of a dummy indicating whether the candidate ran in (won) the next (t+1) election. Panel (b) repeats the exercise for *past (t-1)* elections. Averages are calculated within 2 p.p.-wide bins of vote share difference (x-axis). Continuous lines are a quadratic fit over the original (unbinned) data. Sample includes only candidates placed second and third at election t.

(a) Effect on Running/Winning Next Election



(b) Placebo Check

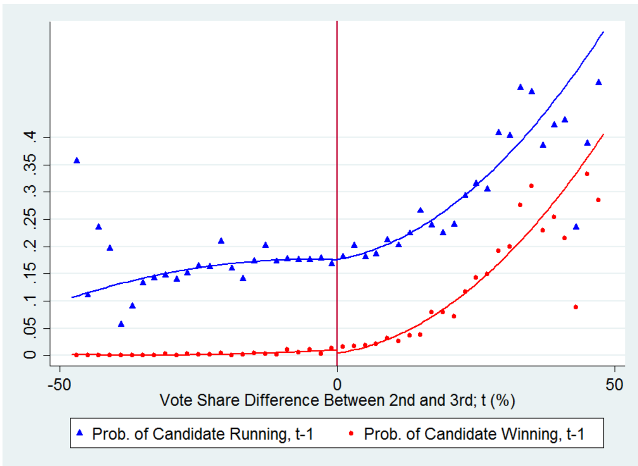


Table A.1: Effect of 1st vs. 2nd Place

Polynomial Order			One	One	One	Zero	Two
Bandwidth			Optimal BW	$\frac{1}{2}\times$Optimal BW	2×Optimal BW	2 percent	Full Sample
	3rd-pl. Mean	Optimal BW Value	(1)	(2)	(3)	(4)	(5)
Panel A: Brazil							
Candidacy, t+1 (%)	52.36	5.028	8.573***	3.918	12.15***	12.67***	17.56***
		[N=7382]	(2.414)	(3.447)	(1.697)	(1.892)	(1.070)
Winner, t+1 (%)	32.38	6.002	-1.525	-4.809	0.823	1.849	6.111***
		[N=8660]	(2.357)	(3.381)	(1.674)	(2.059)	(1.124)
Panel B: India State							
Candidacy, t+1 (%)	48.81	4.802	9.565***	7.317***	10.53***	10.30***	13.04***
		[N=19324]	(1.368)	(1.880)	(0.984)	(1.051)	(0.640)
Winner, t+1 (%)	24.84	6.760	-4.554***	-5.763***	-3.944***	-3.456***	-1.571**
		[N=26406]	(1.147)	(1.596)	(0.836)	(1.037)	(0.628)
Panel C: India Federal							
Candidacy, t+1 (%)	43.43	4.969	10.05***	8.897*	15.21***	13.79***	21.41***
		[N=2774]	(3.449)	(5.096)	(2.449)	(2.685)	(1.699)
Winner, t+1 (%)	19.51	6.083	-1.712	-2.516	3.404	1.396	7.647***
		[N=3278]	(2.887)	(4.002)	(2.096)	(2.444)	(1.606)
Panel D: Canada							
Candidacy, t+1 (%)	37.37	6.903	36.21***	34.02***	36.75***	37.30***	42.41***
		[N=5378]	(2.421)	(3.568)	(1.666)	(2.205)	(1.217)
Winner, t+1 (%)	16.43	7.871	26.54***	26.19***	27.20***	27.71***	30.73***
		[N=6028]	(2.398)	(3.445)	(1.704)	(2.335)	(1.329)

Standard errors clustered at the constituency level in parentheses. The unit of observation is a candidate. Outcomes measured as percentages. Each figure in columns (1)-(5) reports a separate local polynomial regression estimate with the specified bandwidth and polynomial order. Separate polynomials are fitted on each side of the threshold. "2nd-pl. Mean" is the estimated value of the dependent variable for a 2nd-placed candidate that "ties" with the 1st-placed candidate, based on the specification on column (1). The optimal bandwidth (BW) is based on Imbens and Kalyanaraman's (2012) procedure, with the associated number of observations reported in brackets.

Table A.2: Effect of 2nd vs. 3rd Place with Party Outcomes

Polynomial Order Bandwidth	3rd-pl. Mean	Optimal BW Value	One Optimal BW (1)	One $\frac{1}{2}\times$Optimal BW (2)	One $2\times$Optimal BW (3)	Zero 2 percent (4)	Two Full Sample (5)
Panel A: Brazil							
Candidacy, t+1 (%)	37.91	13.60	4.777**	1.322	7.769***	5.526*	7.255***
		[N=6298]	(2.412)	(3.310)	(1.738)	(3.041)	(1.935)
Winner, t+1 (%)	11.68	13.02	5.605***	3.788	5.913***	4.278*	6.660***
		[N=6096]	(1.831)	(2.561)	(1.300)	(2.274)	(1.428)
Panel B: India State							
Candidacy, t+1 (%)	58.60	11.92	3.586***	3.485**	3.465***	4.321***	3.822***
		[N=21872]	(1.170)	(1.603)	(0.883)	(1.360)	(0.954)
Winner, t+1 (%)	14.53	9.190	3.780***	2.342	5.011***	3.601***	5.810***
		[N=17903]	(1.121)	(1.550)	(0.832)	(1.175)	(0.795)
Panel C: India Federal							
Candidacy, t+1 (%)	53.04	16.06	1.784	0.858	3.902**	3.269	5.368**
		[N=3827]	(2.486)	(3.375)	(1.862)	(3.299)	(2.306)
Winner, t+1 (%)	12.08	9.494	1.416	-2.292	6.262***	1.649	9.151***
		[N=2463]	(2.602)	(3.745)	(1.916)	(2.827)	(1.887)
Panel D: Canada							
Candidacy, t+1 (%)	82.37	16.66	2.884**	2.038	2.357**	2.610	4.744***
		[N=6659]	(1.416)	(1.990)	(1.137)	(1.946)	(1.403)
Winner, t+1 (%)	8.369	13.10	-1.975	-0.496	0.944	1.004	-0.330
		[N=5469]	(1.469)	(2.068)	(1.062)	(1.740)	(1.291)

Standard errors clustered at the constituency level in parentheses. The unit of observation is a party. Outcomes measured as percentages. Each figure in columns (1)-(5) reports a separate local polynomial regression estimate with the specified bandwidth and polynomial order. Separate polynomials are fitted on each side of the threshold. "3rd-pl. Mean" is the estimated value of the dependent variable for a 3rd-placed party that "ties" with the 2nd-placed party, based on the specification in column (1). The optimal bandwidth (BW) is based on Imbens and Kalyanaraman's (2012) procedure, with the associated number of observations reported in brackets.

Table A.3: Covariate Smoothness with Party Outcomes (2nd vs. 3rd Place)

Specification Bandwidth(%)	3rd-pl. mean (1)	Optimal BW Value (2)	Linear Optimal BW (3)	Quadratic Full Sample (4)
Panel A: Brazil				
Candidacy, t-1 (%)	40.99	17.11	2.705	2.875
		[N=7264]	(2.153)	(1.926)
Winner, t-1 (%)	16.97	16.65	0.476	1.057
		[N=7116]	(1.806)	(1.602)
Vote Share, t-1 (%)	0.350	16.78	0.0183	0.0180
		[N=2936]	(0.0123)	(0.0113)
PMDB Party, t (%)	13.41	23.88	-0.325	-1.088
		[N=12208]	(1.223)	(1.268)
Panel B: India State				
Candidacy, t-1 (%)	57.98	16.59	0.374	-0.707
		[N=28130]	(1.067)	(0.977)
Winner, t-1 (%)	20.51	12.62	0.0598	0.338
		[N=23108]	(1.069)	(0.867)
Vote Share, t-1 (%)	13.69	13.26	0.113	0.0457
		[N=29463]	(0.400)	(0.336)
Congress Party, t (%)	17.20	10.85	0.0292	-0.761
		[N=29172]	(0.917)	(0.688)
Panel C: India Federal				
Candidacy, t-1 (%)	54.04	21.50	-0.369	0.313
		[N=4997]	(2.461)	(2.427)
Winner, t-1 (%)	16.52	10.86	1.383	4.265*
		[N=2772]	(2.887)	(2.272)
Vote Share, t-1 (%)	14.26	16.30	0.0828	0.552
		[N=4326]	(1.023)	(0.952)
Congress Party, t (%)	9.312	17.53	0.379	0.455
		[N=5604]	(1.619)	(1.544)
Panel D: Canada				
Candidacy, t-1 (%)	83.95	16.71	-2.693*	-0.562
		[N=6965]	(1.483)	(1.526)
Winner, t-1 (%)	9.385	13.95	0.0931	-0.00543
		[N=6005]	(1.512)	(1.394)
Vote Share, t-1 (%)	20.05	11.39	-1.757**	-1.875***
		[N=5088]	(0.753)	(0.619)
Liberal Party, t (%)	22.70	10.71	-0.351	2.102
		[N=5364]	(2.433)	(1.969)

See Table A.2 notes for further description. Outcomes measured as percentages.