Closest to the People? Incumbency Advantage and the Personal Vote in Non-Partisan Elections: Supplementary Materials

October 29, 2020
1 Personal Vote Estimates: Robustness Tests

Figure 1 provides five coefficients for each of the four main models presented in the main text. The two coefficients displayed in the main paper are “Intention A” and “Vote”. The first two coefficients, “Intention A” and “Intention B”, compare two alternative codings of the vote intention variable. Intention A excludes those who had not yet decided on a council candidate; Intention B (used in the main paper) codes “don’t know” responses as non-incumbent votes. We feel that the second coding strategy is superior to the first, but the figure indicates that the results are very similar regardless of the coding approach.

**Figure 1: Robustness Tests: Alternative Coding and Models**

|                  | No Controls | Balance Controls | All Controls | Ward FEs |
|------------------|-------------|------------------|-------------|----------|
| **Intention A**  |             |                  |             |          |
| **Intention B**  |             |                  |             |          |
| **Logit - Intend** |             |                  |             |          |
| **Vote Choice**  |             |                  |             |          |
| **Logit - Vote** |             |                  |             |          |

Description: this figure compares coefficients drawn from the main text (these are “Intention A” and “Vote Choice”) with an alternative coding of the incumbent intention variable (“Intention B”) and with marginal effects of the treatment variable drawn from logit models for both outcome variables of interest (“Logit - Intend” and “Logit - Vote”). The similarities among the coefficients demonstrate that the findings are robust to alternative modelling and coding choices.

Because our dependent variable is dichotomous, we also provide a third coefficient, labelled “Logit - Intend,” which provides the marginal effect of new voter status on incumbent vote intention drawn from a logit model. Once again the results are essentially identical to the probabilities estimated from the OLS model. The same is true of “Logit - Vote”, which provides the marginal effect of new voter status on vote choice, again drawn from a logit model.

Finally, figure 2 assesses the sensitivity of our results to the exclusion of each ward from the analysis. Given our findings in the main text regarding the variability of the personal vote across wards in Calgary, we would expect to see movement in the coefficient when dropping each ward from the analysis; however, we do not want to find that our findings are driven by some peculiarities of a particular ward. Each of the coefficients in the figure reports the personal vote estimate when that ward is dropped from the analysis. Because dropping respondents from a given ward may have substantial effects on covariate balance, these coefficients include the controls listed in the balance test in the main text. While we do see clear variation in the point estimate when dropping wards, the coefficient is statistically significant at 95% in all but one case and at 90% in all cases.
Figure 2: Robustness Tests: Ward Sensitivity Test

Description: this figure displays our estimate of the personal vote while dropping each incumbent race from the analysis.
2 Follow-Up Survey: Details and Robustness

We begin with table 1, which provides a balance test equivalent to the balance test table for the main analysis in the main text (note that some variables are missing because we did not ask about federal partisanship in the 2018 survey.) As is clear in the table, covariate balance between new and old voters in the follow-up survey is very good. In the absence of ward fixed effects, just one variable - university education - shows some imbalance. This imbalance disappears with ward FEs, but ward fixed effects create two new problems: significant differences between new voters and old voters in home value assessments along with some evidence of imbalance on economic retrospection. As in the main text, ward fixed effects appear to create more problems than they solve while also suffering from the design flaws discussed in the main text.

Table 1: Robustness Tests: Alternative Coding and Models

| Socio-Demographics | Overall | Ward Fixed Effects |
|---------------------|---------|-------------------|
|                     | Coefficient | p-value | Direction | Coefficient | p-value | Direction |
| Age                 | 0.000    | 0.76    |            | 0.000       | 0.83     |            |
| Gender              | 0.027    | 0.20    |            | 0.018       | 0.38     |            |
| Education           | -0.040   | 0.06    |            | -0.013      | 0.55     |            |
| Partisanship and Ideology |         |         |            |            |         |            |
| Provincial Conservative | -0.012 | 0.59    |            | 0.002       | 0.93     |            |
| Provincial NDP      | 0.032    | 0.34    |            | 0.008       | 0.80     |            |
| Ideology            | 0.002    | 0.58    |            | 0.006       | 0.24     |            |
| Retrospection and Context |         |         |            |            |         |            |
| Home Values         | -0.007   | 0.59    |            | -0.027      | 0.03     | -          |
| Economy             | -0.019   | 0.25    |            | -0.024      | 0.14     | -          |
| Mayoral Satisfaction| 0.005    | 0.58    |            | 0.006       | 0.55     |            |
| Margin of Victory   | -0.005   | 0.90    |            |            |         |            |

Description: to test for balance between new and old voters in the 2018 survey, this table replicates the balance test from the main text using the 2018 follow up survey.

It is also worth noting that the balance test coefficients in table 1 provide further evidence to support our claim in the main text that the differences between new voters and old voters in our survey on ideology, partisanship, and economic retrospection are due to chance variation rather than some systematic selection process.

With these balance test results in hand, we can now test the robustness of our findings from the follow-up survey in a similar manner to the main analysis: a bivariate model, a model including balance controls, and a model including ward fixed effects. In addition, because most of the models compare “don’t know” responses to provided responses, we include a model that controls for variables known to be associated with the propensity to guess on survey questions, rather than select the “don’t know” option. The most important of these is gender, with women consistently being found to be relatively unlikely to guess in knowledge questions (Mondak and Anderson 2004). We thus include a control for gender, as well as two other individual characteristics – age and education level – that might reasonably be expected to be associated with the propensity to guess (Mondak 2001, Mondak and Anderson 2004). Because these variables have the potential to introduce imbalance in the new
/ old voter comparison, these “guessing” models also include ward-level fixed effects. The tables consistently suggest that the results we report in the main text are robust to these alternative specifications.

This table reports additional models for responses to the question on recognizing one’s councillor on the street.

|                              | Bivariate | Balance | Guessing | Ward FEs |
|------------------------------|-----------|---------|----------|----------|
| New Voter                    | -0.0880***| -0.0873***| -0.0714**| -0.0749**|
|                              | (0.0331)  | (0.0331) | (0.0347) | (0.0341) |
| University Education         | 0.0809***| 0.0753***|
|                              | (0.0263)  | (0.0268) |
| Woman                        |          | -0.0292 |
|                              |          | (0.0263) |
| Age                          |          |         | 0.00363***|
|                              |          |         | (0.000928) |
| Observations                 | 1339      | 1333    | 1282     | 1339     |
| Ward FEs                     | No        | No      | Yes      | Yes      |
| Adjusted $R^2$               | 0.005     | 0.012   | 0.070    | 0.047    |

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
This table reports additional models for responses to the question on knowledge of one’s councillor’s background and views.

|                  | Bivariate | Balance | Guessing | Ward FEs |
|------------------|-----------|---------|----------|----------|
| New Voter        | -0.0860** | -0.0837** | -0.111*** | -0.114*** |
|                  | (0.0346)  | (0.0346) | (0.0366) | (0.0358) |
| University Education | 0.0500*   | 0.0497*   |          |          |
|                  | (0.0282)  | (0.0293)  |          |          |
| Woman            | -0.0165   |          |          |          |
|                  | (0.0286)  |          |          |          |
| Age              |           |          | 0.00307*** |          |
|                  |           |          | (0.000992) |          |
| Observations     | 1264      | 1259     | 1210     | 1264     |
| Ward FEs         | No        | No       | Yes      | Yes      |
| Adjusted $R^2$   | 0.004     | 0.006    | 0.049    | 0.038    |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
This table reports robustness tests for responses to one’s councillor’s position on the Olympics (response vs. don’t know).

|                          | Bivariate | Balance | Guessing | Ward FEs |
|--------------------------|-----------|---------|----------|-----------|
| New Voter                | -0.0706** | -0.0662** | -0.0752** | -0.0792** |
|                          | (0.0320)  | (0.0320) | (0.0333) | (0.0327)  |
| University Education     | 0.0755*** | 0.0489*  |
|                          | (0.0259)  | (0.0266) |
| Woman                    | -0.0750***|
|                          | (0.0264)  |
| Age                      | 0.00392***|
|                          | (0.000894)|
| Observations             | 1448      | 1442     | 1384      | 1448      |
| Ward FEs                | No        | No       | Yes       | Yes       |
| Adjusted $R^2$          | 0.003     | 0.008    | 0.054     | 0.032     |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
This table reports robustness tests for responses to one’s councillor’s position on the Olympics (correct response vs. incorrect response). As noted in the main text, it is not always easy to determine what a “correct” response to this question would be, because some councillors were more reticent about stating their view on the Olympic bid prior to the plebiscite. For this reason, we believe that the fixed effects model is particularly appropriate in this instance to compare within-ward differences in correct vs. incorrect responses. However, even the model without fixed effects, while not statistically significant at conventional levels (p=0.12), is consistent with the others in direction and magnitude.

|                          | Bivariate | Balance | Guessing | Ward FEs |
|--------------------------|-----------|---------|----------|----------|
| New Voter               | -0.0482   | -0.0418 | -0.0736*** | -0.0870*** |
|                         | (0.0312)  | (0.0312) | (0.0317) | (0.0313) |
| University Education    | 0.0739*** | 0.0588** |          |          |
|                         | (0.0259)  | (0.0261) |          |          |
| Woman                   | -0.0506*  |         |          |          |
|                         | (0.0258)  |          |          |          |
| Age                     |           |          | 0.00536*** |          |
|                         |           |          | (0.000859) |          |
| Observations            | 1448      | 1442    | 1384     | 1448     |
| Ward FEs                | No        | No      | Yes      | Yes      |
| Adjusted $R^2$          | 0.001     | 0.006   | 0.090    | 0.061    |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
This table reports robustness tests for responses to one’s councillor’s ideology (response vs. don’t know).

|                          | Bivariate | Balance  | Guessing | Ward FEa   |
|--------------------------|-----------|----------|----------|------------|
| **New Voter**            | -0.0561*  | -0.0516* | -0.0650**| -0.0708**  |
|                          | (0.0312)  | (0.0312) | (0.0329) | (0.0323)   |
| **University Education** | 0.0729*** | 0.0552** |          |            |
|                          | (0.0249)  | (0.0258) |          |            |
| **Woman**                | -0.153*** |          |          |            |
|                          | (0.0255)  |          |          |            |
| **Age**                  | 0.000780  |          |          |            |
|                          | (0.000857)|          |          |            |
| **Observations**         | 1448      | 1442     | 1384     | 1448       |
| **Ward FEa**             | No        | No       | Yes      | Yes        |
| **Adjusted $R^2$**       | 0.002     | 0.007    | 0.040    | 0.011      |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
This table reports robustness tests for responses to one’s councillor’s performance (response vs. don’t know).

|                  | Bivariate | Balance | Guessing | Ward FEs |
|------------------|-----------|---------|----------|----------|
| New Voter        | -0.0434*  | -0.0447*| -0.0579**| -0.0486**|
|                  | (0.0232)  | (0.0234)| (0.0252) | (0.0245) |
| University Education | 0.00510  | 0.00579 |          |          |
|                  | (0.0177)  | (0.0184)|          |          |
| Woman            |          | -0.0535***|         |          |
|                  |          | (0.0180)|          |          |
| Age              |          |         | 0.00299***|          |
|                  |          |         | (0.000653)|          |
| Observations     | 1448      | 1442    | 1384     | 1448     |
| Ward FEs         | No        | No      | Yes      | Yes      |
| Adjusted $R^2$   | 0.002     | 0.002   | 0.033    | 0.008    |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
3 Election Results Dataset: Additional Details

Calgary election results are taken from official election records in the Clerk’s Correspondence, City Clerks Fonds, City of Calgary Archives. These records are mixed amongst other correspondence; the City of Calgary Archives Clerks Correspondence Finding Aid is necessary for locating election results for each year. More recent election results are available at Calgary Public Library and were provided to the author directly by the City of Calgary Elections Office. Candidate incumbency was verified using official results as well as lists of elected mayors and councillors available in Hunter 2013.

4 Robustness Test: Mayoral Vote Intention

Figure 3 compares the effect of new voter status on mayoral incumbent vote intention and vote choice to the effect of new voter status on council incumbent vote intention and vote choice. We include our three imbalance variables (see the main text) in all of these analyses to control for the role of ideology and partisanship in both mayoral and council vote choice (this is particularly important in the mayoral context, because both ideology and partisanship played a role in the Calgary mayoral election). If our analysis is capturing the personal vote, rather than some other characteristic of new voters that makes them less satisfied with incumbents in general, we should see no effect on mayoral vote choice. As figure 3 illustrates, this is precisely what we find.

Figure 3: Robustness Test: Council vs. Mayoral Incumbent Vote

Description: this figure replicates the vote intention and vote choice variables from the main text for incumbent councillors and adds the same test for incumbent mayoral vote intention and vote choice. All models include controls for the imbalanced variables from the 2017 survey: Conservative partisanship, ideology, and economic retrospection.
5 Personal Vote Estimates: Full Tables

These tables provide coefficients for the vote intention and vote choice analyses in the main text. The first table is vote intention, and the second table is vote choice.

|                  | Bivariate | Balance | All Controls | Ward FEs | Balance and FEs | Matching |
|------------------|-----------|---------|--------------|----------|----------------|----------|
| New Voter        | -0.0964***| -0.104***| -0.120***    | -0.129***| -0.130***      | -0.0854**|
|                  | (0.0368)  | (0.0384) | (0.0406)     | (0.0350) | (0.0366)       | (0.0386) |
| Conservative     | 0.0811**  | 0.0865* | 0.0354       |          |                |          |
|                  | (0.0385)  | (0.0461) | (0.0364)     |          |                |          |
| Ideology         | -0.00715  | -0.00504| -0.00996     |          |                |          |
|                  | (0.00834) | (0.00980)| (0.00806)    |          |                |          |
| Economy          | 0.0388*   | 0.0481* | 0.0336*      |          |                |          |
|                  | (0.0212)  | (0.0248) | (0.0202)     |          |                |          |
| Age              | 0.00202*  |         |              |          |                |          |
|                  | (0.00113) |          |              |          |                |          |
| Woman            |          | -0.00337|              |          |                |          |
|                  |           | (0.0334) |              |          |                |          |
| Univ. Ed.        |          | -0.000238|             |          |                |          |
|                  |           | (0.0331) |              |          |                |          |
| Liberal          |          | -0.0550 |              |          |                |          |
|                  |           | (0.0518) |              |          |                |          |
| NDP              |          | -0.143* |              |          |                |          |
|                  |           | (0.0835) |              |          |                |          |
| Home Val.        |          | -0.0268 |              |          |                |          |
|                  |           | (0.0176) |              |          |                |          |
| Mayor Sat.       |          | 0.0364**|              |          |                |          |
|                  |           | (0.0183) |              |          |                |          |
| Observations     | 1121      | 1045    | 909          | 1121     | 1045           | 930      |
| Ward Fixed Effects| No        | No      | No           | Yes      | Yes            | No       |
| Adjusted $R^2$   | 0.005     | 0.010   | 0.018        | 0.112    | 0.118          | 0.151    |

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
|                          | Bivariate | Balance | All Controls | Ward FEs | Balance and FEs | Matching |
|--------------------------|-----------|---------|--------------|----------|----------------|----------|
| New Voter                | -0.0966** | -0.102** | -0.111**     | -0.125***| -0.131***      | -0.0731* |
|                          | (0.0400)  | (0.0415) | (0.0437)     | (0.0386) | (0.0402)       | (0.0418) |
| Conservative             | 0.134***  | 0.127**  | 0.0975**     |          |                |          |
|                          | (0.0427)  | (0.0503) | (0.0404)     |          |                |          |
| Ideology                 | -0.0199** | -0.0127  | -0.0177**    |          |                |          |
|                          | (0.00922) | (0.0111) | (0.00868)    |          |                |          |
| Economy                  | 0.0289    | 0.0197   | 0.0220       |          |                |          |
|                          | (0.0235)  | (0.0274) | (0.0217)     |          |                |          |
| Age                      | -0.0000637|         |              |          |                |          |
|                          | (0.00125) |          |              |          |                |          |
| Woman                    | -0.0363   |         |              |          |                |          |
|                          | (0.0367)  |          |              |          |                |          |
| Univ. Ed.                | -0.00579  |         |              |          |                |          |
|                          | (0.0367)  |          |              |          |                |          |
| Liberal                  | -0.0247   |         |              |          |                |          |
|                          | (0.0560)  |          |              |          |                |          |
| NDP                      | -0.0512   |         |              |          |                |          |
|                          | (0.0901)  |          |              |          |                |          |
| Home Val.                | -0.0213   |         |              |          |                |          |
|                          | (0.0186)  |          |              |          |                |          |
| Mayor Sat.               | 0.0309    |         |              |          |                |          |
|                          | (0.0200)  |          |              |          |                |          |
| Observations             | 961       | 900     | 781          | 961      | 900            | 774      |
| Ward Fixed Effects       | No        | No      | No           | Yes      | Yes            | No       |
| Adjusted $R^2$           | 0.005     | 0.015   | 0.009        | 0.126    | 0.142          | 0.184    |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
6 Equivalence Tests

Several recent articles (Hartman and Hidalgo 2018, Rainey 2014) have suggested that equivalence tests are better suited for exploring the plausibility of “null findings” in general and covariate balance tests in particular. In this appendix, we thus report the results of an equivalence test using the same variables in the balance tests in the main text. We use the two-one-sided t-tests (TOST) procedure as implemented in the “TOSTER” package in R.

Equivalence tests require that analysts specify a range of values outside of which a relationship should be considered substantively meaningful. In figure 4, we follow the rule suggested by Hartman and Hidalgo 2018 and use ±0.36 times the standard deviation for each variable. As is clear in the figure, only two variables – ideology and ideologue – are statistically significant at p<0.05, while several others – provincial and federal Conservative partisanship, economic retrospection – are close to statistical significance. As discussed in the main paper, these variables are likely to be capturing the same underlying phenomenon: slightly more partisan and ideological conservatives in the new voter group than the old voter group. However, the placement of the gray bars in the figure suggests that old and new voters are not meaningfully different from one another on any of the variables in the analysis.
The size of the gray bars in figure 4, however, strike us as rather large. For a more conservative test, we therefore selected values for each variable that we felt were considerably more conservative: for proportions, a difference of five percent between treatment and control groups was assumed to be meaningful; for ideology and ideologue, a value of one point on the 10-point scale was assumed to be meaningful; and for margin of victory, we chose a threshold of five percent (often used in RD analyses of election outcomes as a threshold for close elections). Figure 5 provides an overview of our results using these more conservative thresholds. Here we see more reason for concern with partisanship variables – particularly
provincial and federal Conservatism. While the ideology and ideologue variables remain statistically significant, they are within our boundary of meaningful difference even under our more conservative assumptions. Economic retrospection, once again, is statistically significant but not especially meaningful.

Figure 5: Equivalence Test 2

In general, these findings support our conclusions in the main text: while the new voter and old voter groups are well balanced overall, the new voter group appears to have more ideologically and partisan Conservatives, and thus it is appropriate to test the robustness of
the results when these partisan and ideological variables are included in the model. This is what we do in the second and third columns of figure 1 in the main text.
7 Competitiveness and the Personal Vote

Readers may worry - as we did - that the variable we use in our multilevel model to capture competitiveness, margin of victory, is too close to our quantity of interest. In non-partisan contests, we cannot use standard partisan proxies for district competitiveness, such as the proportion of registered Democrats in the district (besides, such data do not exist in Canada). Thus, to test the robustness of our model, we developed an alternative measure to attempt to capture a slightly different district-level competitiveness proxy: ideological fractionalization. Using all of the individual respondents in both our 2017 and 2018 surveys (more than 3,000 respondents), we first created a fractionalization index based on ideological self-placement on the left (0-4), centre (5), or right (6-10) of the ideological spectrum. The index is calculated as follows:

$$\text{IdeologicalFractionalization} = 1 - \sum_{i=1}^{N} s_i^2$$

This index captures the “fractionalization” of each ward in three ideological camps, and can be interpreted as the probability that two randomly selected individuals in a given ward will belong to the same group. If this index is a good measure of district-level competitiveness, it should correlate negatively with historical margins of victory (that is, higher margins of victory should be associated with lower levels of fractionalization). Using our historical election results dataset, we find that the index correlates negatively and strongly with margins of victory in the 2017 election ($r=-0.70$), historical margins of victory since 2000 ($r=-0.67$), and even with historical margins of victory since 1977 ($r=-0.23$) and proportion of acclamations since 1977 ($r=-0.49$). We thus believe that this fractionalization index serves as a good measure of district competitiveness.

Figure 6 summarizes the interaction between ideological fractionalization and our treatment variable, using a multilevel random-intercepts, random-slopes model similar to the model in the main text. Across the observed range of ideological fractionalization in Calgary wards, we see that increased fractionalization is associated with larger personal vote effects on new voters - precisely what we observed in the main text. Perhaps most strikingly, the estimated size of the effect – approaching 20 percentage points in the most fractionalized ward – is nearly identical to the estimated size of the effect in highly competitive districts in the main text. This additional test provides us with more confidence in the estimates that we report in the main text and draw into the second simulation.
8 Calgary Redistricting Map

In the map, gray areas represent open races, blue areas represent “old voters”, and red areas represent “new voters.” Reassuringly, new voters are not concentrated in a particular quadrant (NE, NW, SE, SW) or ward.
Figure 7: New Voters and Old Voters in Calgary Wards
9 Survey Questions and Coding

In this section we summarize all of the survey questions we use in the main text. As noted in the main text, these questions are drawn from two surveys: the Canadian Municipal Election Study (2017) and the Calgary Year in Review (2018). We provide more detail on these surveys below.

9.1 Outcome Variables

Vote intention. Incumbent vote intention is measured from the pre-election wave of the CMES 2017 survey in two ways (see SM1 above for more detail). The first measure, used in the main paper, is recoded to (1) if the respondent indicated an intention to vote for the incumbent candidate, and (0) if they indicated an intention to vote for another candidate or selected “don’t know”. The second measure, used in the robustness test in SM1, is recoded to (1) for a stated intention to vote for the incumbent and (0) for a stated intention to vote for another candidate, excluding “don’t know” responses.

- Question text and options (for individuals who stated they were likely to vote in the municipal election). “Which city council candidate do you think you will vote for in your ward?” Options: candidate names from ward; none, other, don’t know/haven’t decided.
- Question text and options (for individuals who stated they were not likely to vote in the municipal election). “If you do vote, which city council candidate do you think you will vote for?” Options: candidate names from ward, none of these/definitely will not vote, don’t know/haven’t decided.
- Source: CMES 2017 survey (pre-election wave).
- Note: these two questions were combined into a single vote intention measure for this paper.
- Number of complete responses: 1,129.

Vote choice. Incumbent vote choice is measured from the post-election wave of the 2017 CMES survey. The variable is recoded to (1) if the individual indicated that they voted for the incumbent candidate and (0) if the individual voted for a different candidate.

- Question text “Which City Council candidate did you vote for in your ward?” Options: list of candidates on ballot in individual’s ward.
- Source: CMES 2017 survey (post-election wave).
- Number of complete responses: 970.

Knowledge of Councillor Background. Knowledge of councillor background is measured as (1) if the individual chose “somewhat agree” or “strongly agree”, (0) if the individual chose “somewhat disagree” or “strongly disagree”. “Don’t know” responses were excluded from this analysis.
• Question text: “Please tell us if you agree or disagree with the following statements about your councillor, (councillor name piped in based on ward of residence): I know a lot about his/her background and character.” Options: strongly disagree, somewhat disagree, somewhat agree, strongly agree, don’t know.

• Source: Calgary Year in Review 2018.

• Number of complete responses: 1,283.

Familiarity with Councillor. This variable is measured as (1) if the individual chose “somewhat agree” or “strongly agree”, (0) if the individual chose “somewhat disagree” or “strongly disagree”. “Don’t know” responses were excluded from this analysis.

• Question text: “Please tell us if you agree or disagree with the following statements about your councillor, (councillor name piped in based on ward of residence): I would recognize him/her if we passed each other on the street.” Options: strongly disagree, somewhat disagree, somewhat agree, strongly agree, don’t know.

• Source: Calgary Year in Review 2018.

• Number of complete responses: 1,358.

Councillor issue position. This variable is measured as (1) if the individual chose any option other than “don’t know” for the issue position question, and (0) if the individual chose “don’t know”.

• Question text: “To your knowledge, do the following elected officials support or oppose the Calgary 2026 Olympic Bid? Councillor (name piped in based on ward of residence).” Options: Strongly supports, somewhat supports, neither supports nor opposes, somewhat opposes, strongly opposes, don’t know.

• Source: Calgary Year in Review 2018.

• Number of complete responses: 1,477.

Councillor ideology. This variable is measured as (1) if the individual chose any option other than “don’t know” for the councillor ideology question, and (0) if the individual chose “don’t know”.

• Question text: “In politics people sometimes talk of left and right. Where would you place yourself on a scale from 0 to 10, where 0 means left and 10 means right?...Using the same scale, where would you place the following politicians? Councillor (piped in based on ward of residence)” Options: 0 (left), 1, 2, 3, 4, 5 (Centre), 6, 7, 8, 9, 10 (Right), Don’t know.

• Source: Calgary Year in Review 2018.

• Number of complete responses: 1,477.
**Councillor performance.** This variable is measured as (1) if the individual chose any option other than “don’t know” for the councillor performance question, and (0) if the individual chose “don’t know”.

- Question text: “How satisfied are you with the performance of...your current city councillor?” Options: Very satisfied, somewhat satisfied, somewhat unsatisfied, very unsatisfied, don’t know.

- Source: Calgary Year in Review 2018.

- Number of complete responses: 1,477.

9.2 **Old Voter / New Voter Variable**

The new voter/old voter variable is coded on the basis of the individual’s neighbourhood of residence. This variable is based on the following survey questions.

**Ward of residence.** This question is used for models which include ward fixed effects in the main text and the robustness tests. As we will explain below, it is also used in the community of residence question. Respondents were provided with a ward map of the city as well as a link to the City of Calgary website which allowed for ward lookup. Respondents in wards with open races are excluded from the analysis.

- Question text: “In which ward do you live?” Options: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, “Don’t know / unsure”.

- Source: Canadian Municipal Election Study 2017.

- Number of complete responses: 1,529.

**Community of residence.** We use this question to manually assign each respondent to new voter / old voter status without having to rely on their own knowledge of whether their ward boundaries have changed. There are more than two hundred official communities in Calgary. These communities are well known to respondents. We piped in community options based on the respondent’s ward (see question above) to avoid overwhelming respondents with a full list of 200 communities. Respondents in wards with open races are excluded from the analysis.

- Question text: “In which community do you live?” Options: [list of community names in respondent’s ward], “Don’t know / unsure”.

- Source: Canadian Municipal Election Study 2017.

- Number of complete responses: 1,499.
9.3 Control Variables

Age. Age calculated from year of birth question. Don’t know / refuse responses are excluded from the analysis.

- Question text: “In what year were you born?” (List of years, prefer not to say)
- Source: Canadian Municipal Election Study 2017, Calgary Year in Review 2018.
- Number of complete responses: 1,428 (CMES), 1,417 (CYR)

Woman. Gender question in both surveys converted to “woman” variable, male=0, female=1, other values excluded.

- Question text: “Are you:” Options: Male, Female, My gender identity is (open ended), Prefer not to say
- Source: Canadian Municipal Election Study 2017, Calgary Year in Review 2018
- Number of complete responses: 1,515 (CMES), 1,466 (CYR).

University education. Measured from highest completed education question. Completion of bachelor’s degree or higher = 1, other categories = 0, don’t know excluded.

- Question text: “What is the highest level of education that you have completed?” Options: No schooling, some elementary school, completed elementary school, some secondary/high school, completed secondary/high school, some technical/community college, completed technical/community college, some university, bachelor’s degree, master’s degree, professional degree or doctorate, prefer not to say / don’t know.
- Source: Canadian Municipal Election Study 2017, Calgary Year in Review 2018
- Number of complete responses: 1,522 (CMES), 1,471 (CYR).

Partisanship. As is standard practice in comparative partisanship research, we measure partisanship (Liberal, Conservative, and New Democratic Party) using a party identification question followed by a strength of identification question. Party identifiers are measured as those who (a) choose a political party in the first question, and (b) choose either “very strongly” or “fairly strongly” in the follow-up questions. Respondents who satisfy both criteria are coded as (1) for the relevant party; all others are coded (0).

- Question text (first question): “In federal politics, do you usually think of yourself as a:” Options: Liberal, Conservative, NDP, Green, Bloc, Other, None of the above, Don’t know.
- Question text (follow-up question for those who do not select “none of the above” or “don’t know” in the first question). “How strongly do you identify with that party?” Options: very strongly, fairly strongly, not very strongly, don’t know.
- Source: Canadian Municipal Election Study 2017
• Number of complete responses: 1,529 (CMES).

**Ideology.** Don’t know responses excluded.

• Question text: “In politics people sometimes talk of left and right. Where would you place yourself on a scale from 0 to 10, where 0 means left and 10 means right?” Options: 0 (left), 1, 2, 3, 4, 5 (centre), 6, 7, 8, 9, 10 (right), Don’t know.

• Source: Canadian Municipal Election Study 2017

• Number of complete responses: 1,411

**Home values.** Don’t know responses excluded.

• Question text: “How have home values changed in your neighbourhood in the past year?” Options: decreased a lot, decreased a little, stayed the same, increased a little, increased a lot, don’t know.

• Source: Canadian Municipal Election Study 2017

• Number of complete responses: 1,359

**Economic performance.** Don’t know responses excluded.

• Question text: “Over the past year has the economy in the following places gotten better, gotten worse, or stayed about the same?...Calgary” Options: better, worse, stayed about the same, don’t know.

• Source: Canadian Municipal Election Study 2017

• Number of complete responses: 1,510

**Mayor performance.** Don’t know responses excluded.

• Question text: “How satisfied are you with the performance of...the current mayor?” Options: Very satisfied, somewhat satisfied, somewhat unsatisfied, very unsatisfied, don’t know.

• Source: Canadian Municipal Election Study 2017.

• Number of complete responses: 1,514.
10 Simulation: Additional Detail

The second simulation in our paper incorporates variation in the estimated personal vote at different levels of competitiveness. More specifically, the simulation adds the following steps to the simulation described in the main text:

1. Create a normally-distributed distribution of the personal vote for each 1% increment of margin of victory in the entire range of marginal effect estimates that are statistically significant in the previous section. Each distribution has a mean equal to the point estimate of the coefficient obtained for the personal vote (ranging from -.190 when \( MV=0.0 \) to -.077 when \( MV=0.38 \)) and a standard deviation equal to its standard error.

2. Make a random draw of one incumbent victory from the election results dataset and record the margin of victory in that election.

3. Make a random draw of an estimated personal vote from the personal vote distribution that corresponds to the margin of victory selected in step two.

4. Repeat steps 3-8 from the first simulation procedure, as described above.

As in the first simulation, an example may help to illustrate how this second simulation accounts for competitiveness. Before the simulation begins, we create a distribution of the personal vote at each value of the margin of victory (increments of 0.01), starting from 0.0 and ending at 0.38, the last point at which the marginal effect of the personal vote is statistically significant. Assume that we have drawn the same race as above in this second simulation – Jane versus Joe and Sally. Since the margin of victory in that race was 10%, we randomly draw a personal vote estimate from the distribution for that particular margin of victory; in this case, assume that we draw an estimate of the personal vote effect of -15%. Once again, we subtract this effect from Jane’s vote share (it now equals 35%) and once again reallocate four fifths of the subtracted vote share to Joe, the runner-up candidate (thus 12% + 40% = 52%). Since subtraction and reallocation did change the election outcome, the result is recorded as a (1). Creating 1,000 of these simulated outcomes, and then running the full process 1,000 times, creates an overall distribution of the simulated effect of the personal vote on election outcomes when accounting for competitiveness.
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