

# Online Appendix to Does Negative Advertising Affect Giving Behavior? Evidence from Campaign Contributions

Sarah Niebler<sup>1</sup>, Carly Urban<sup>2</sup>

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## Appendix A: Data Appendix

### *Individual Giver Matching*

The analysis in this paper uses the individual contributor identifier in the CRP data (contribid). The process the CRP uses to create this measure is labor intensive. First, they use the original electronic filings from the Federal Election Commissions secure server (<http://ftp.fec.gov/FEC/>) to pull the address and last name. Each time there is more than one match across the primary and general election (meaning two last names with the same address), an alert is created requiring someone on staff to manually match the individual. This process is repeated for the entire address, as well as a combination of the zip code, street name, and last name. Anytime a discrepancy arises, coders match individuals manually. For this reason, CRP notes that earlier editions of the data (pre 2000), may be less accurate since the process was less iterative and labor-intensive.

This process may introduce measurement error if those with last names often misspelled (i.e., names of foreigners) are most sensitive to negativity and thus are shown as not responding by decreasing contributions when actually they did. This would understate our estimated effect. Another problem may arise if individuals who are most likely to move are also those least sensitive to negativity. This would result in us overstating the effect of negativity. The IV strategy helps us to alleviate these concerns, but the measurement error stemming from inaccurate matching is important to note.

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<sup>1</sup>Assistant Professor of Political Science, Dickinson College

<sup>2</sup>Assistant Professor of Economics, Montana State University, Corresponding Author: carly.urban@montana.edu (406) 994-2005.

Table A.1: Candidates, Convention Dates, and Contribution Limits by Year

| Democratic          | Republican      |                     |           |
|---------------------|-----------------|---------------------|-----------|
| <b>2000</b>         |                 |                     |           |
| Al Gore             | George W. Bush  | DNC Nomination Date | 8/17/2000 |
|                     | Lamar Alexander | RNC Convention Date | 8/3/2000  |
|                     | Gary Bauer      | Labor Day           | 9/4/2000  |
|                     | Elizabeth Dole  | Limit to candidate  | \$1,000   |
|                     | Steve Forbes    | Limit to party      | \$20,000  |
|                     | Orrin Hatch     |                     |           |
|                     | John Kasich     |                     |           |
|                     | Alan Keyes      |                     |           |
|                     | John McCain     |                     |           |
|                     | Dan Quayle      |                     |           |
|                     | Robert Smith    |                     |           |
| <b>2004</b>         |                 |                     |           |
| John Kerry          | George W. Bush  |                     |           |
| Wesley Clark        |                 | DNC Nomination Date | 7/29/2004 |
| Howard Dean         |                 | RNC Convention Date | 9/2/2004  |
| John Edwards        |                 | Labor Day           | 9/6/2000  |
| Richard Gephardt    |                 | Limit to candidate  | \$2,000   |
| Bob Graham          |                 | Limit to party      | \$25,000  |
| Dennis Kucinich     |                 |                     |           |
| Joe Lieberman       |                 |                     |           |
| Carol Moseley Braun |                 |                     |           |
| Al Sharpton         |                 |                     |           |
| <b>2008</b>         |                 |                     |           |
| Barack Obama        | John McCain     |                     |           |
| Joe Biden           | Sam Brownback   | DNC Nomination Date | 8/28/2008 |
| Hillary Clinton     | Jim Gilmore     | RNC Convention Date | 9/4/2008  |
| Chris Dodd          | Rudy Giuliani   | Labor Day           | 9/1/2008  |
| John Edwards        | Mike Huckabee   | Limit to candidate  | \$2,300   |
| Dennis Kucinich     | Duncan Hunter   | Limit to party      | \$28,500  |
| Bill Richardson     | Ron Paul        |                     |           |
| Tom Vilsack         | Mitt Romney     |                     |           |
|                     | Tom Tancredo    |                     |           |
|                     | Fred Thompson   |                     |           |
|                     | Tommy Thompson  |                     |           |

Table A.2: Primary Advertisements and Lagged Election Results

|           | Market with<br>Primary Ads      | Market without<br>Primary Ads      |
|-----------|---------------------------------|------------------------------------|
| Closeness | 12.616<br>(0.363)               | 12.153<br>(0.785)                  |
| N         | 145                             | 786                                |
|           | Market with<br>Negative Ads     | Market without<br>Negative Ads     |
| Closeness | 11.667<br>(0.393)               | 15.834***<br>(0.836)               |
| N         | 607                             | 179                                |
|           | Market with<br>Dem Primary Ads  | Market without<br>Dem Primary Ads  |
| Dem %     | 45.046<br>(0.344)               | 46.549***<br>(0.320)               |
| N         | 499                             | 432                                |
|           | Market with GOP<br>Primary Ads  | Market without GOP<br>Primary Ads  |
| GOP %     | 48.603<br>(0.344)               | 52.070***<br>(0.504)               |
| N         | 645                             | 286                                |
|           | Market with Dem<br>Negative Ads | Market without Dem<br>Negative Ads |
| Dem %     | 44.829<br>(0.468)               | 45.235<br>(0.498)                  |
| N         | 232                             | 267                                |
|           | Market with GOP<br>Negative Ads | Market without GOP<br>Negative Ads |
| GOP %     | 47.814<br>(0.367)               | 53.116***<br>(0.829)               |
| N         | 549                             | 96                                 |

Notes: Cells are means, standard errors in parentheses. \*\*\* marks that the 2 groups are statistically different at the 1% level. All others are not statistically different at the 10% level. Closeness is the absolute value of the percentage difference between Republican and Democratic candidates in the previous presidential election in the given state.

## Appendix B: Congressional Appendix

Table B.1: Summary Statistics: Persistence in Giving in Congressional Elections

| <b>Panel A</b>  |        |         |
|---|--------|---------|
| <b>Republicans</b>                                    | House  | Senate  |
| <b>Gave to Losing Republican in Primary and</b>       |        |         |
| ...Winning Republican in General                      | 12.11  | 14.66   |
| ...Democrat in General                                | 0.66   | 0.51    |
| ...No one in General                                  | 84.67  | 87.11   |
| ...Another Republican for a Different Race in General | 13.06  | 10.59   |
| Observations  | 56,184 | 50,274  |
| <b>Gave to Winning Republican in Primary and</b>      |        |         |
| ...Winning Republican in General                      | 22.84  | 26.30   |
| ...Democrat in General                                | 0.17   | 0.29    |
| ...No one in General                                  | 76.93  | 73.32   |
| ...Another Republican for a Different Race in General | 11.99  | 13.41   |
| Observations  | 86,018 | 131,565 |
| <b>Panel B</b>  |        |         |
| <b>Democrats</b>                                      | House  | Senate  |
| <b>Gave to Losing Democrat in Primary and</b>         |        |         |
| ...Winning Democrat in General                        | 8.61   | 16.38   |
| ...Republican in General                              | 0.60   | 0.82    |
| ...No one in General                                  | 90.67  | 82.49   |
| ...Another Democrat for a Different Race in General   | 14.08  | 9.04    |
| Observations  | 44,767 | 30,292  |
| <b>Gave to Winning Democrat in Primary and</b>        |        |         |
| ...Winning Democrat in General                        | 28.34  | 26.76   |
| ...Republican in General                              | 0.25   | 0.36    |
| ...No one in General                                  | 71.34  | 72.76   |
| ...Another Democrat for a Different Race in General   | 15.83  | 17.19   |
| Observations  | 70,654 | 105,549 |

Notes: All cells are conditional probabilities. Data from CRP, where each observation is an individual contributor that gave to a winning candidate in the primary or a losing candidate in the primary for Democrats (Panel A) or Republicans (Panel B). The first three categories in each section roughly sum to 100. The small difference comes from the very small amount of individuals who give to both parties in the general election. The final category in each section is independent of the other three.

Table B.2: Summary Statistics: Dollars Contributed in Congressional Elections

| <b>Republicans</b> | 2000         | 2002         | 2004           | 2008          |
|--------------------|--------------|--------------|----------------|---------------|
| Primary \$s        | 766<br>(306) | 766<br>(310) | 1,206<br>(708) | 1226<br>(841) |
| N                  | 76,225       | 58,216       | 81,111         | 82,002        |
| General \$s        | 848<br>(269) | 852<br>(268) | 1363<br>(708)  | 1482<br>(849) |
| N                  | 47,682       | 33,125       | 46,985         | 40,839        |
| <b>Democrats</b>   | 2000         | 2002         | 2004           | 2008          |
| Primary \$s        | 802<br>(294) | 765<br>(309) | 1113<br>(712)  | 1155<br>(844) |
| N                  | 55,604       | 50,748       | 64,042         | 58,790        |
| General \$s        | 867<br>(258) | 840<br>(275) | 1267<br>(723)  | 1358<br>(854) |
| N                  | 32,043       | 27,545       | 47,455         | 39,239        |

Notes: Cells are average contribution amounts, conditional on contributing, means reported with standard deviations in parentheses.

Table B.3: Summary Statistics: Primary Advertisements in Congressional Elections

| <b>Republicans</b>    | 2000             | 2002           | 2004             | 2008           |
|-----------------------|------------------|----------------|------------------|----------------|
| % Negative Ads        | 22.6<br>(31.2)   | 21.5<br>(25.7) | 27.1<br>(28.8)   | 30.9<br>(37.0) |
| Markets               | 44               | 38             | 58               | 68             |
| Primary Ads           | 392<br>(436)     | 690<br>(778)   | 1624<br>(1100)   | 984<br>(1212)  |
| Markets               | 75               | 100            | 100              | 210            |
| <b>Democrats</b>      | 2000             | 2002           | 2004             | 2008           |
| Fraction Negative Ads | 17.7<br>(24.6)   | 15.9<br>(27.5) | 13.5<br>(21.9)   | 18.8<br>(30.2) |
| Markets               | 40               | 37             | 44               | 65             |
| Primary Ads           | 1,507<br>(1,728) | 918<br>(796)   | 1,902<br>(2,088) | 906<br>(1,040) |
| Markets               | 75               | 100            | 100              | 210            |

Notes: Cells are average negative ads, average total ads by media market/year. The data comes from the Wisconsin Advertising Project (WiscAds). In 2000, the WiscAds data covers the largest 75 media markets; in 2002 and 2004 it covers the largest 100 markets; 2008 covers all 210 media markets. Percent of negative ads is only defined in markets where there are non-zero advertisements.

Table B.4: Robustness: Congressional Races, In-State Giving Only

**IV: Stage 2**

DV =1 if Gave to Same Party's Winner in General

|                                | Dem<br>(1)              | GOP<br>(2)           | Dem<br>(3)          | GOP<br>(4)        |
|--------------------------------|-------------------------|----------------------|---------------------|-------------------|
| ln(D % Negative)               | -0.0150***<br>(0.00458) |                      | -0.0154<br>(0.0608) |                   |
| ln(R % Negative)               |                         | -0.0369*<br>(0.0211) |                     | -0.490<br>(0.461) |
| <u>Fixed Effects Included:</u> |                         |                      |                     |                   |
| State                          | X                       | X                    | X                   | X                 |
| Year                           | X                       | X                    | X                   | X                 |
| Office                         | X                       | X                    | X                   | X                 |
| N                              | 947                     | 1139                 | 1940                | 735               |
| States                         | 37                      | 40                   | 38                  | 40                |
| Races                          | 53                      | 78                   | 54                  | 80                |
| Gave in Primary to             | Loser                   | Loser                | Winner              | Winner            |

**IV: Stage 1**

DV =ln(% Negative)

|                      | Dem<br>(1)          | GOP<br>(2)          | Dem<br>(3)          | GOP<br>(4)        |
|----------------------|---------------------|---------------------|---------------------|-------------------|
| Duopoly <sub>D</sub> | 1.194***<br>(0.146) |                     | 1.365***<br>(0.464) |                   |
| Duopoly <sub>R</sub> |                     | 1.082***<br>(0.273) |                     | 0.415*<br>(0.217) |
| F-Stat               | 67.12               | 15.66               | 8.638               | 3.667             |

Robust standard errors clustered at the district by year level in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . The sample includes data from 2000, 2002, 2004, and 2008 U.S. House and Senate races. The samples in Columns (1) and (2) condition on giving to a losing candidate in the primary. The samples in Columns (3) and (4) condition on giving to a winning candidate in the primary. The dependent variable equals one if that contributor then gave to a winning candidate in the general election, and zero otherwise. Negativity is defined as the percent of negative ads aired in the race in which the individual contributed in in the primary. Office fixed effects represent a dummy for House or Senate.



## Appendix C: Negativity in the Primary and Voter Behavior in the General Election

We use individual-level panel data from the 2008 Cooperative Campaign Analysis Project (CCAP) to examine the role that negative advertising during nominating contests plays in whether voters “came home” to their preferred parties. This survey asks individuals who they voted for in both the primary and general elections in March and November, respectively.<sup>3</sup> As mentioned previously, the literature is divided as to whether divisive primaries cause harm to general election candidates. Table C.1 shows the percentage of CCAP respondents who fall into various categories based on for whom they indicated voting during both the nominating and general election contests. Not surprisingly, the majority of Republicans and Democrats, even those who did not vote for their parties’ nominees during the nominating contest, report voting for their party’s nominee in the general election. Interestingly, however, a larger percentage of those who voted for a candidate other than McCain in the primary reported voting for him in the general election as compared to those who voted for McCain during the primary (85 percent to 79 percent). Perhaps it was the case that Obama did lure some of the moderate McCain voters to the Democratic side during the general election. The pattern among Democratic primary voters was opposite: a higher percentage of those who voted for Obama during the primary stayed loyal to him during the general as compared to those who voted for a losing Democrat in the nominating contest (89 percent to 77 percent).

$$W_{i,m,P} = \beta_0 + \beta_1 NA_{m,P} + \epsilon_{i,m,P} \quad (1)$$

Table C.2 estimates the extensive margin effect negative ads have on coming home to one’s base in Equation 1. Here,  $NA_{y,m,P} = 1$  if there were any negative ads in an individual’s media market and zero otherwise conditional on the market every airing any ads. We again instrument for negative ads using the duopoly measure. However, since there is less variation in the negative advertising measure, we no longer have enough variation to include state level fixed effects. Results presented in Columns (1) and (3) of Table C.2 are based on those individuals who voted for a candidate

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<sup>3</sup>CCAP oversamples individuals living in both early-primary and battleground states.

other than the eventual nominee during the nominating phase of the election, while results presented in Columns (2) and (4) include individuals who voted for either Obama or McCain during the primary. The dependent variable in the Democratic models equals one if the respondent reported voting for Obama in the general election and zero otherwise. The dependent variable in the Republican models equals one if the respondent voted for McCain in the general election. Overall, neither advertising nor negative advertising appears to have any statistically significant effects, and for Democrats, these coefficients are close to zero in magnitude. For Republicans, negative ads deter voters, though again this effect is not statistically different from zero.

Columns (1) and (2) condition on contributing to a losing candidate in the primary and Columns (3) and (4) condition on giving to the candidate who ultimately won the nomination in the primary. For Democrats, the negative ads decrease the probability of returning to the base by 35 to 50 percent. For Republicans, this effect is much smaller, between 2.9 and 7.7 percent. These effects are relatively large in magnitude, which could be due to the nature of survey data in political questionnaires. Since people were surveyed in March, those in earlier states may misreport who they voted for based on the status of the election at the time of the survey (i.e. a bandwagon effect). However, we use these results to simply assert that the effect of intra-party negative advertising on vote choice is non-positive.

Table C.1: Summary Statistics: Probability of Coming Back to your Party (2008)

| <b>Panel A</b>                                    |       |
|---|-------|
| <b>Republicans</b>                                |       |
| <b>Voted for Losing Republican in Primary and</b> |       |
| ...McCain in General                              | 85.38 |
| ...Third Party in General                         | 3.45  |
| ...Obama in General                               | 10.01 |
| ...No one in General                              | 1.16  |
| Observations                                      | 2,982 |
| <b>Voted for McCain in Primary and</b>            |       |
| ...McCain in General                              | 79.03 |
| ...Third Party in General                         | 0.85  |
| ...Obama in General                               | 18.01 |
| ...No one in General                              | 2.12  |
| Observations                                      | 944   |
| <b>Panel B</b>                                    |       |
| <b>Democrats</b>                                  |       |
| <b>Voted for Losing Democrat in Primary and</b>   |       |
| ...Obama in General                               | 77.41 |
| ...Third Party in General                         | 2.02  |
| ...McCain in General                              | 18.21 |
| ...No one in General                              | 2.35  |
| Observations                                      | 3,316 |
| <b>Voted for Obama in Primary and</b>             |       |
| ...Obama in General                               | 88.97 |
| ...Third Party in General                         | 0.76  |
| ...McCain in General                              | 9.39  |
| ...No one in General                              | 0.87  |
| Observations                                      | 1,831 |

Notes: All cells are conditional probabilities. Data from the 2008 CCAP, where each observation is an individual voter conditional on the described primary voting condition. The sample is conditional upon survey respondents answering questions regarding both primary and general election vote choice.

Table C.2: Do Negative Campaigns Deter Voters in the General Election?

| DV =1 if Voted for Same Party's Winner in General |                   |                    |                   |                    |
|---|-------------------|--------------------|-------------------|--------------------|
|   | Dem               | GOP                | Dem               | GOP                |
|   | (1)               | (2)                | (3)               | (4)                |
| Negative Ads (D)                                  | -0.642<br>(1.321) |                    | -0.648<br>(3.168) |                    |
| Negative Ads (R)                                  |                   | -0.106<br>(0.0880) |                   | -0.374*<br>(0.220) |
| Observations                                      | 3,033             | 2,116              | 1,707             | 661                |

Robust standard errors clustered at the state level in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Negative Ads (D) and Negative Ads (R) are equal to 1 if the total negative ads in a given market are greater than 0 and 0 otherwise. All data are from 2008 alone. The samples in Columns (1) and (2) condition on voting for a losing candidate in the primary. For example, in Column (1), the individual voted for someone other than Obama or Kerry in the primary. The samples in Columns (3) and (4) condition on voting for a winning candidate in the primary. For example, in Column (3), the individual voted for either Obama or Kerry in the primary. The dependent variable equals one if that contributor then voted for Obama or Kerry in the general election, and zero otherwise.

## Appendix D: Negativity and Campaign Contributions in the Primary

It may also be the case that higher fractions of intra-party negative advertising generate additional campaign contributions for the winner in primary elections. This benefit would then change our estimates of the “cost” to going negative in the primary for winning candidates, since they can roll extra money over from the primary to the general election. We confirm that this is not the case in this section. Specifically, we aggregate our campaign contribution data to the zip code-level to determine the dollars contributed to each party’s winner in each zip code for each election cycle’s primary. This way, we are able to determine which zip codes contained no givers. We cannot capture zip codes with individuals who gave under \$200 in our data. Thus, if many people gave \$100, this zip code would appear as if there were no contributions. We use population data from the 2000 Census at the zip code level to determine which zip codes contain no individual contributors in the primary. Since we are looking at the zip code-level, we create a dependent variable that is per-capita contributions. We separate this by party and only look at giving to the candidate in the primary for this specification. For example, in 2008 we consider all dollars contributed to Obama in the primary in zip code  $z$  divided by that zip code’s population. We again separate our regressions by party as in the previous analysis. Further, we instrument for negativity using the same instrument that we employ in Section 5.

Table D.1 shows the results of the regression described. We again include state and year fixed effects in the model and cluster our standard errors at the state by election level, as well as using robust standard errors to account for heteroskedasticity. Columns (1) and (2) verify that the first stage of the regression is strong, with an F-statistic over 200 in both cases. In addition, zip codes in states with duopoly primary contests contain 11-13 percent more negative advertisements when compared with other zip codes within markets with some level of advertising and contests with more than two candidates. Column (3) shows that for Democrats, increasing the percent of negative advertisements results in 0.24 additional dollars per capita, though this is not statistically different from zero. For Republicans, increasing the fraction of negative advertisements deters contributions (Column (4)), though again the standard errors on this effect are large. Thus, we assert that increasing the proportion of negative advertisements does not generate additional campaign contributions in the primary for candidates.

Table D.1: Instrumental Variables: Negativity and Primary Contributions

| Dependent Variable             | IV Stage 1             |                        | IV Stage 2                              |                   |
|--------------------------------|------------------------|------------------------|---|-------------------|
|                                | % Negative             |                        | $\frac{\$s}{Pop}$ Contributed to Winner |                   |
|                                | Dem                    | GOP                    | Dem                                     | GOP               |
|                                | (1)                    | (2)                    | (3)                                     | (4)               |
| Duopoly <sub>D</sub>           | 0.13444***<br>(0.0059) |                        |   |                   |
| Duopoly <sub>R</sub>           |                        | 0.11422***<br>(0.0079) |   |                   |
| ln(D % Negative)               |                        |                        | 0.235<br>(2.579)                        |                   |
| ln(R % Negative)               |                        |                        |   | -10.03<br>(7.198) |
| <u>Fixed Effects Included:</u> |                        |                        |   |                   |
| State                          | X                      | X                      | X                                       | X                 |
| Year                           | X                      | X                      | X                                       | X                 |
| Observations                   | 26,565                 | 20,212                 | 26,565                                  | 20,212            |
| F-Statistic (Stage 1)          | 523.4                  | 207.6                  |   |                   |

Robust standard errors clustered at the state by election level in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Negative Ads (D) and Negative Ads (R) are equal to 1 if the total negative ads in a given market are greater than 0 and 0 otherwise. Columns (1) and (3) include data from 2004 and 2008, Columns (2) and (4) include data from 2000 and 2008. The dependent variable aggregates the winners campaign contributions to the zip code-level and divides by the zip code population from the 2000 Census.