

Who Comes Home to The Base?

The Effect of Divisive Primaries on Campaign Contributions

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Abstract

Does negative advertising in primary campaigns affect one's probability of supporting his party in a general election campaign? We are the first to answer this question using administrative panel-data from the Federal Election Commission (FEC), which links individuals' contributions in the primary to their contributions in the general election. Using an instrumental variable strategy and data that span 3 election cycles, we find that higher fractions of intra-party negative advertising deters supporters of the individual's preferred party's losing candidate from contributing in the general election. However, the deterrant effect of negative advertising is amplified for individuals who initially contributed to the winning candidate in the primary election.

1 Introduction

The personal attacks against me during the primary finally became so heavy that the state Republican chairman, Gaylord Parkinson, postulated what he called the Eleventh Commandment: Thou shalt not speak ill of any fellow Republican. It's a rule I followed during that campaign and have ever since. – Ronald Reagan (1990, 150)

While Ronald Reagan may have believed in not speaking ill of his fellow party-members, candidates running in recent presidential nominating contests certainly have not followed the "Eleventh Commandment." During the 2008 presidential nominating contests alone, Democratic and Republican candidates spent just under \$9 million attacking members of their own political parties. Reporters and political consultants repeatedly discuss the detrimental long-term effects of within-party negative advertisements, claiming they decrease participation in the general election and benefit the opposing party. Even into Obama's second presidential term, news articles refer to attacks made during the 2008 presidential primary by Hillary Clinton on then-Senator Barak Obama's managerial skills (Thrush 2013).

While pundits seem certain that negative campaigning is costly to candidates, and possibly even harmful to politicians who have been elected, this paper is the first to study the potentially added cost of negative primary campaigns through foregone general-election campaign contributions due to a negative contest. Using data from the Center for Responsive Politics (Opensecrets.org) on individual-level campaign contributions, we build a panel of individuals who contributed at some point throughout the election season and are able to link individuals from a primary to a general election contest. We determine if individuals who contributed to losing candidates in the primary “came home,” contributing to their preferred party’s nominee during the general election campaign. For example, we ask: What is the likelihood that individuals who contributed to Hillary Clinton during the 2008 Democratic primary ultimately contributed to Barack Obama during the general election after witnessing a negative primary campaign? Similarly, we look to see if individuals contributing to the candidate who won the nomination are deterred from giving to that same candidate in the general election due to a negative campaign. The Wisconsin Advertising Project data allow us to measure the negativity of the election in each media market based on the tone of the television advertisements aired during the primary contest. Our data span three election cycles: 2000, 2004, and 2008, giving us variation in the number of contests, the tone of the race, and the partisanship of each contest.

While other studies have examined the degree to which divisive primaries influence general election outcomes (Kenney and Rice 1987; Lingle 1980; Lingle, Owen and Sonner 1995; Bernstein 1977; Hacker 1965; Kenney and Rice 1984; Kenney 1988; Piereson and Smith 1975; Hogan 2003; Born 1981; Atkeson 1998; Makse and Sokhey 2010), there are two main caveats to this literature. First, all of these studies use the post-election vote totals (referred to as competitiveness) of the primary to determine divisiveness, which could be endogenous to both general election vote choice and voter turnout in that area.¹ Second, the studies rely on aggregate vote return data to measure the dependent variable, general election outcomes, which do not account for observed and unobserved components of the campaign that are correlated with both closeness of the primary and the ultimate result of the general election.²

This paper is the only study to use individual-level administrative panel data to understand the effect of divisive primaries on an individual’s probability of coming back to his base during the general election.³ We use the population of individuals who contributed to campaigns, as these data allow us to link individuals across the primary and general election.⁴ The observational data also reduce measurement error in the dependent variable that is correlated with other confounding factors when surveys are conducted (i.e. political interest and susceptibility to negative advertising) that exists. The availability of individual-level

¹One exception is Wichowsky and Niebler (2010) who respond to issues raised by Ware (1979) and measure negativity as the fraction of negative ads in the contest. One shortcoming of this study is that the authors’ data spans only one election cycle; however, in this paper, we measure divisiveness the same way they do.

²According to Mutz (1995), these characteristics make loyalty-based contributing all the more plausible.

³Henderson et al. (2010) use panel survey data to look at the propensity for individuals who voted for losing candidates in the primary to come back to their bases in the general election.

⁴Similar to Urban and Niebler (2014), this paper examines the effect of televised campaign advertisements on individual-level contributions to presidential candidates instead of voter turnout or vote choice. In that paper, the authors find that being in a market with advertising in an uncontested state increases campaign contributions, focusing solely on the volume of ads.

panel data allows us to account for all time-invariant within-individual differences in and preferences for political information.

We also account for potential endogeneity of negative intraparty ads and campaign contributions, where candidates may target negative ads to areas where individuals may be least susceptible to the detrimental effects of negative advertising, by instrumenting for negative advertising. Our instrument for negativity relies on the number of candidates remaining at the time of a state's primary; the idea that primary candidates in two candidate contests are twice as likely to air negative ads than those in primary races with more than two candidates is documented empirically in Gandhi, Iorio and Urban (2013).

We document that among those individuals who gave to a losing candidate in the primary election, doubling the fraction of negative advertisements (say from 10 percent to 20 percent) in markets with advertisements, decreases the probability that these contributors give to the winning candidate in their preferred party in the general election by about 1.5 percent for Republicans. Since few (less than 10 percent in 2008), individuals contribute to the winning candidate in their party after supporting the losing candidate in the primary, this relative effect is quite large. For Democrats, contributors to the losing candidate in the primary are not deterred by intra-party negative advertisements. Across both parties, negative campaigns have a greater deterrent effect for those who gave to the winning candidate in the primary than for those who gave to a losing candidate in the primary. We supplement our main findings with panel survey data from the Cooperative Campaign Analysis Project (CCAP) and find that, consistent with previous literature, intra-party negativity either decreases or does not affect vote choice. Thus, the costs may be borne in lost campaign contributions.

We also contribute to a small, but growing, literature which attempts to understand the determinants of individual-level giving in presidential contests (Ansolabehere, de Figueiredo and Snyder Jr. 2003; Fremeth, Richter and Schaufele 2013; Gimpel and Lee 2008; Gordon, Hafer and Landa 2007; Joulfaian and Marlow 1991; Urban and Niebler 2014). In this literature, we are the first to consider the potential effects of a divisive primary on general election contributions. While presidential campaigns are financed almost entirely through individual-level contributions, most papers focus on the determinants of Political Action Committee (PAC) giving and the potential for PAC contributions to improve access or influence voting behavior (Austen-Smith 1995, 1998; Baron 1989; Chappell 1982; Cotton 2012; Kroszner and Stratmann 1998; Snyder 1992, 1990; Stratmann 1995, 1998).

The remainder of the paper is organized as follows: Section 2 describes the current state of the literature on divisive primaries, negative advertising, and campaign contributions; Section 3 describes the Opensecrets and WiscAds data and provides summary statistics; Section 4 explains the empirical strategy of the paper; Section 5 presents the main results; Section 6 discusses the lack of a relationship between negativity and vote choice; Section 7 provides concluding remarks.

2 Divisive Primaries

Primary elections are assumed to be divisive. Candidates from the same party vie against one another in an effort to win the opportunity to represent their party in the general election campaign. In doing so, they must appeal to extreme members of their party coalitions for votes (Polsby 1983) and campaign contributions. Following the conclusion of a particularly competitive or drawn-out primary campaign, political pundits and party activists often express concern that the divisiveness of the primary harms the eventual nominee in the general election campaign (Broder 2008, April 24). Academics disagree on the degree to which divisive primaries have a negative effect on general election outcomes, finding that the effects vary based on the type of election (presidential, gubernatorial, state legislative) (Kenney and Rice 1987; Lingle 1980; Lingle, Owen and Sonner 1995; Bernstein 1977; Hacker 1965; Kenney and Rice 1984; Kenney 1988; Piereson and Smith 1975; Hogan 2003) and whether the nominee is a challenger or incumbent (Born 1981). In order to understand how divisive primaries may affect general election campaign contributions, we first need to understand individuals' decisions to contribute. We next outline three potential reasons individuals contribute to campaigns and how each would be affected by an increase in negativity in the primary.⁵

First, individuals may contribute to campaigns to “buy influence” or proximity to politicians.⁶ If this is the case, these givers will likely be unaffected by negativity in a primary and more likely to support the winner in the general election if they originally gave to a losing candidate since they have not yet contributed to the winning candidate.

Second, individuals may contribute to political campaigns since their contributions are transparent, meaning their employers and neighbors can see how much and to whom they have contributed. Thus, people in specific industries may contribute to candidates whose policies align with their job (e.g., someone who supports banking for a stock trader) or regional demands (e.g., someone who is focused on immigration for residents of New Mexico). For these people, divisive contests are unlikely to increase the marginal costs of contributing, and thus, the marginal benefits (transparent contributions) will continue to outweigh the marginal costs; these individuals will continue to contribute in spite of negative advertising.

Third, individuals may receive some type of warm glow after giving to a candidate that aligns with their interests and political preferences, as this type of giving directly enters an individual's utility function (Ansolabehere, de Figueiredo and Snyder Jr. 2003).⁷ Simultaneously, strong intra-party negativity may force candidates to choose a more specific platform. If the individual contributor becomes wedded to a very particular platform and that individual aligns more with his own party than the opponents, he may be wedded to the loser of his preferred party's platform and convinced that the winner's platform is not correct based on

⁵Stratmann (1992) demonstrates how PAC giving can be rational, where he shows that contributors give to candidates who remain undecided regarding their interests.

⁶There is a large literature studying the effects of campaign contributions on influence, especially pertaining to PAC contributions. See, for example Claessens, Feijen and Laeven (2008); Morton and Cameron (1992); Snyder (1990, 1991); Stratmann (1991, 1995) and citations therein for more on this literature.

⁷One could think of this as a similar setting to the warm glow theory associated with charitable giving (Andreoni 1990). However, in this setup, there are no tax incentives associated with giving to candidates' campaigns.

the nuances described in the campaigns. This specific alignment may result in the individual abstaining from the general election process. For example, during the 2008 Democratic nominating contest, Obama consistently pointed out that then-Senator Clinton had supported, and voted for, the Iraq War in 2003, whereas he had consistently opposed U.S. intervention in Iraq (Zeleny 2007, February 26). More hawkish Democratic voters who supported the Iraq War may have favored Senator Clinton for her stance, and upon her defeat either lost interest in the general election or been inclined to support Senator McCain.

Related to the third theory, it may be the case that individuals donate to candidates during the nominating phase of the campaign out of a sense of loyalty. In this case, their proclivity to “come home” and support their party’s eventual nominee may be decreased, particularly if the nominating contest contains many petty personal attacks. An especially negative primary campaign may leave primary donors disillusioned by the campaign process. In early experimental settings, researchers show that negative campaign advertisements demobilize the American electorate (Ansolabehere et al. 1994). Some observational research contradicts this claim and finds a modest, but positive effect of negative advertising on voter turnout (Goldstein and Freedman 2002*a*; Geer 2006; Wattenberg and Briens 1999) while a meta-analysis of the subject finds that, “recent literature does not bear out the idea that negative campaigning is an effective means of winning votes...nor is there any reliable evidence that negative campaigning depresses voter turnout” (Lau Et Al. 2007; see also Lau Et Al. 1999). Research on the persuasion capability of televised campaign advertising moves away from examining the effects of strictly negative advertising instead focusing on ads that elicit emotions such, fear, anger, enthusiasm, and pride (Brader 2006).⁸

We further note that our measure of campaign contributions describes a stronger commitment to the candidate and party than do vote choice measures. Small increases in observed party disunity may affect one’s proclivity to contribute, while that individual may still choose to vote for his/her preferred party. (Ansolabehere, de Figueiredo and Snyder Jr. 2003) argue that campaign contributions directly enter individuals’ utility functions. Small deterrents may reduce the benefits of contributing, causing the marginal cost to exceed the marginal benefit.⁹

3 Data

This paper utilizes data from the Center for Responsive Politics (Opensecrets.org) and the Wisconsin Advertising Project (WiscAds). We combine data from these sources to identify the potential detrimental effects of divisive primaries, beginning by building a database of individual-level contributors in primary and general presidential election contests from 2000, 2004, and 2008. Using the individual, committee, and candidate files from Opensecrets, we identified those individuals (based on their contributor ID number) who donated money

⁸Although fear and anger are not simply synonyms for negative ads, Ridout and Franz (2011) argue that the effects of negative ads are complicated and can vary drastically depending on the intended effects of the individual ads.

⁹Atkeson (1998) argues that the negative effects of divisive primaries are diminished when the quality of the candidate and the prior vulnerability of his or her party is taken into account. This could mean that strong candidates are more likely to be able to overcome the harsh tone of a primary.

to at least one of the major party candidates participating in the presidential election.¹⁰ Since we are ultimately interested in whether individuals “come home” and contribute to their party’s general election candidate, individuals who contributed only to minor-party presidential candidates during the primary and general election campaigns are not included in this dataset. Furthermore, since we are only interested in whether individuals contribute to more than one presidential candidate (and for purposes of this paper are uninterested in whether they also give to candidates down ballot or to political action committees), we eliminate all individual contributions that were not to a presidential candidate or to the Democratic or Republican National Committees (DNC or RNC). In the Opensecrets data we use for 2000, 2004, and 2008, only 2-3 percent of givers contributed to multiple candidates in the primary.¹¹

We next categorize contributions as either being given during the nominating or general election contests. We consider a donation to be for a primary election and campaign if it fulfills the following: 1) it is given to a candidate that only participated in the nominating contest phase of the election; or 2) it was given to a candidate in the period prior to the candidate accepting his party’s nomination.¹² In constructing the data in this way, our assumption is that candidates have an incentive to count as much money as they can as part of their primary election coffers. This money, as we understand, can be transferred to the candidate’s general election fund so long as in doing so, the candidate does not exceed the amount of money he is allowed to raise under the federal matching fund guideline.^{13,14} We also provide robustness to our main effects by dropping contributors who gave after the nomination was determined but before the conventions were held. A contributor may have been giving money in support of the general election at this time. However, this money would still be labeled as “primary contributions” since general election funds were not permitted at this time. Primary dollars are only aggregated once the final primary contribution is made. Thus, we cannot distinguish between individuals who had already given to the primary winner and those who are giving to him for the first time.

In this study, instead of operationalizing divisiveness only as the competitiveness of the primary election as nearly all studies examining the divisive primary hypothesis do, we take the advice of Ware (1979) and differentiate between “narrow games” and “hard victories.”

¹⁰Table 9 in the Appendix provides information about which candidates’ contributions are included in the data.

¹¹Dowdle and his co-authors (2013) argue that when greater numbers of individuals contribute to more than one candidate during the primary nominating contest, the party is less fractured and therefore should not suffer negative effects when the nominating contest is over. We do not see this in Presidential elections from 2000-2008.

¹²Table 9 in the Appendix includes information about when the national party conventions were held in 2000, 2004, and 2008.

¹³The only candidate for whom the federal matching fund guideline is not an issue is Barack Obama. In 2008, he became the first presidential candidate under the current system not to accept federal matching funds for the general election contest. However, since we include contributions to the DNC and RNC in the dataset as well, we believe this not to be problematic.

¹⁴We believe this assumption to be sound given the text that the Obama campaign placed on its website about individual-level contributions in 2012. It read, “The first \$2,500 from a contributor to Obama Victory Fund 2012 will be allocated to Obama for America, designated for general election debt retirement. The next \$30,800 from a contributor will be allocated to the Democratic National Committee. Any additional amount(s) from a contributor will be divided equally among the Florida, Iowa, Pennsylvania, and Virginia State Democratic Party Committees, up to \$10,000 per committee and subject to the biennial aggregate limits (<https://contribute.barackobama.com/>).

Similar to Wichowsky and Niebler (2010), we measure the divisiveness of the primary campaign by the percentage of televised campaign advertisements that were negative, not just the margin of victory attained by the winning candidate. The Wisconsin Advertising Project data provide information about the tone of the local advertising campaign for the presidential nominating campaign. We re-code WiscAds data from storyboards and videos to be sure that the negativity is aimed within party and is not a preemptive attack of future opponents in the general election. In other words, we consider only the percentage of the airings in each media market that were “intraparty negative,” meaning that the favored candidate and the targeted candidate were of the same party.^{15,16} The unit of analysis for the intraparty negativity measure using WiscAds data is the media market (or DMA). To merge the negativity of the campaign for each individual donor, we assign individuals to media markets based on the zip codes they provided when making their campaign contributions. This information is contained in the Opensecrets individual-donor database.

Thus, in each year’s dataset, each observation is a unique individual campaign contributor who donated money to a presidential candidate, the RNC, or the DNC at some point during the election cycle. We will identify individuals who do and do not “come back to their base” among several categories:

- People who contributed to a losing Democratic (Republican) candidate in the primary, and contributed to the Republican (Democratic) candidate in the general election
- People who contributed to a losing Democratic (Republican) candidate in the primary, and contributed to a third party candidate in the general election
- People who contributed to a losing Democratic (Republican) candidate in the primary, and did not contribute to any candidate in the general election
- People who contributed to a losing Democratic (Republican) candidate in the primary, and contributed to the Democratic (Republican) candidate in the general election

To describe an individual’s propensity to return home to their base with campaign contributions, we define the following unconditional probabilities:

$$Pr(W_P | N_{iP} = 0) \tag{1}$$

$$Pr(W_P | N_{iP} = 1) \tag{2}$$

where P indexes the party in $\{R, D\}$ and W_P equals one if the contributor gave to the candidate who won the party’s nomination in the general election. N_{iP} equals one if the contributor gave to the candidate who eventually won the nomination and zero if the

¹⁵In 2000, we have advertising information for the largest 75 media markets, covering about 80 percent of the U.S. population. In 2004, this information was collected for the largest 100 media markets, and in 2008, WiscAds includes information for all 210 media markets in the U.S. Thus, for 2000 and 2004, we are able to identify markets that did and did not advertise in only a subset of areas. In markets without any advertisements, the fraction of negativity is undefined. Thus, we focus our analysis on markets that did receive advertisements, as we cannot separately identify the effects of advertising and the effects of negative advertising on an individual’s propensity to contribute without exploring variation in the intensity of both advertising and the tone of advertising.

¹⁶For more on the Wisconsin Advertising Project Data, see Goldstein and Freedman (2000; 2002) and Franz et al. (2007).

contributor gave to a losing candidate. The conditional probabilities mark the probability that an individual comes home to contribute to the winning candidate in the party he contributed to in the primary.

Table 1 shows summary statistics on these two sets of conditional probabilities. The first set of probabilities from Equations (1) and (2) (shown in Panel A) are conditional on giving to a losing Republican candidate in the primary, where we see that the most common subsequent general election action is to not give at all. In 2000, 97 percent of individuals who gave to a losing Republican candidate did not give at all in the general election. A small fraction, 1.89 percent, gave to Republican nominee George W. Bush after their preferred candidate lost the primary contest. Less than one percent switched parties, donating to either Obama, the DNC, or a third-party candidate after contributing to a losing Republican candidate in the primary. In 2008 it became more slightly more likely for individuals to get behind Republican nominee John McCain after one's preferred candidate withdrew from the primary election: 10 percent of individuals did this.

Panel B of Table 1 shows the same statistics for Democrats in 2004 and 2008. In 2004, 95 percent of contributors who gave to a losing candidate in the primary did not give to any candidate in the general election. In 2008, however, almost 15 percent of individuals donating money to a candidate who did not ultimately win the nomination ended up contributing to Barack Obama's general election coffers. Across the board, very few individuals who gave to a losing candidate ultimately supported a different party, though this percentage was higher in 2008 when compared to 2000 and 2004.

While we could attribute the lack of "coming home" to donate to one's preferred party's nominee as a lack of party unity, it is important to define a comparison group. Thus, in Table 1 we also look at the individuals who gave to the winning candidates in the primary to see if they continued to give to their preferred candidate in the general election. This is the conditional probability from Equation (2). A particularly divisive primary might actually drive an individual to dislike his originally-preferred candidate. In Table 1, the probability of giving to President Bush in 2000, given that you gave to him in the primary, was only 6 percent. In 2008, however, the probability of giving to Senator McCain, given that you had contributed to his campaign in the primary, was closer to 28 percent. Similarly, in Panel B the probability of giving to Senator Kerry, conditional on giving to his campaign in the primary was only 8 percent, whereas President Obama's return probability was closer to 40 percent.

Next, we present summary statistics regarding the dollars contributed in the campaign in Table 2. Conditional on giving, average individual contributions have increased over time for both primary and general election contests, though individual limits have also increased.¹⁷ Further, the number of contributors has increased substantially from 2000 to 2008 for both Republican and Democratic primaries and general elections.¹⁸ The numbers in brackets

¹⁷This is not surprising, especially following the passage of the Bipartisan Campaign Reform Act (BCRA) in 2002, which indexed contribution limits for individuals to inflation. See Table 9 for the limits by year. BCRA also decreased "soft money" contributions and increased direct contributions from individuals to candidates.

¹⁸It is possible that individuals give to multiple candidates of one party in the primary, thus making these averages seem higher. However, we find that only 3 percent of individuals donating to Democrats in the primary gives to more than one Democrat; only 2 percent of donors giving to Republican candidates do the same. Giving

represent the total dollar amounts contributed in each year and election by party. In 2008, over \$300 million was contributed to Democrats in the primary contest and almost \$250 million for Republicans. This is substantially greater than the \$25 and \$35 million for Democrats and Republicans in the 2000 primary contests, respectively. This is likely due to a number of factors, including the difference in the duration of the campaign, the number of competitors in each contest, increased campaign contribution limits, and the increased focus and mobilization efforts designed to encourage individuals to contribute to candidates' campaigns.

Table 3 shows the descriptive statistics of the tone of primary advertisements. Here, we report the fraction of intraparty negative advertisements by media market for each election year and party. In 2000, only 35 of the most-populated 75 media markets had any advertisements and nearly all (31 of 35) markets experienced some degree of negative advertising. Overall, 35 percent of the ads were spent attacking other Republican primary candidates. In 2004, Democrats advertised in 74 of the largest 100 media markets, though the tone was more positive; only 2 percent of ads attacked fellow Democrats seeking the nomination. Conditional on attacking at all in a given market, the average fraction of negative advertisements was 10 percent, and 54 of the 74 markets with advertisements were entirely positive. Thus, we are testing if those negative ads (essentially comparing markets with and without negative ads) were detrimental to raising funds in the general election.

Table 3 further shows that during the 2008 nominating campaign, Republican candidates advertised in 72 of the 210 U.S. media markets, and Democrats advertised in 135. This difference is due to the drawn-out nature of the contest between Clinton and Obama where the two candidates actively competed in nearly every state in the U.S. The overall intraparty negativity for Republicans and Democrats was low at about 3 percent. However, in the 36 markets where Democrats engaged in intra-party attacks, up to a third of the ads were negative, with an average of 10 percent of negative ads in each market. Finally, in 2008, Republicans went negative in 16 markets, and in those markets the average fraction of negative ads was 14 percent. We use the variation in both across market intensity of and existence of negative ads in markets to measure the degree of divisiveness in each election and identify the effect of a divisive primary on coming back to one's base.

4 Empirical Strategy

After understanding the baseline conditional probabilities of returning to one's base, we now seek to estimate the effect of negative advertising on the conditional probabilities described in Equations (1) and (2). Our unique data construction enables us to study the effects of divisive primaries while controlling for time-invariant individual-level characteristics. We seek to account for omitted variable bias by including controls that will be correlated with both the overall tone of the campaign in a given market as well the probability that one returns to his base. Specifically, we estimate Equation (3) below.

to primary candidates in both parties is even more of an anomaly: less than one percent of individuals do this.

$$W_{i,y,m,P} = \beta_0 + \beta_1 N_{y,m,P} + \beta_2 \mathbf{H}_{y,m,P} + \gamma_y + \eta_s + \epsilon_{i,y,m,P} \quad (3)$$

$W_{i,y,m,P}$ equals 1 if individual i gave to the winner in the same party P in election year y , and 0 if he did not (i.e. did not give or gave to an alternate candidate). $N_{y,m,P}$ is the fraction of own-party negative ads in media market m during the primary for party P in election year y .¹⁹ $\mathbf{H}_{y,m,P}$ includes total ad volume for the party in media market m during the given primary for party P in election year y , an indicator for whether the primary contribution came before or after the primary contest, negativity in the general election for party P in media market m , general election ad volume for party P in media market m , and primary turnout for party P in election year y by county.²⁰ We also include election year fixed effects, γ_y and state fixed effects η_s ; $\epsilon_{i,y,m,P}$ is the error term.

Linear probability models (LPMs) can generate unrealistic fitted values for binary outcomes. However, LPMs perform reasonably well for estimating marginal effects with fixed effects, which we estimate in this study (Angrist and Pischke 2008). According to Wooldridge (2002), the LPM differs from the logit and probit specifications in that it assumes constant marginal effects, while the logit and probit models imply diminishing marginal returns in covariates [p. 469]. Wooldridge (2002) further asserts that logit models can also be used to provide consistent estimates with fixed effects. While we present the LPM estimates, the results are highly similar to the marginal effects from comparable logit specifications. We are also careful to provide robust standard errors in order to control for heteroskedasticity in all of our models (Haughwout, Peach and Tracy 2008) corrected for clustering at the state level.

Again, we look at conditional probabilities so we condition our samples on those who gave to a Republican or Democratic candidate in the primary. We separate our regressions based on party, since Democratic and Republican primaries do not always occur simultaneously. For example, Democratic primaries were contested in 2004 and 2008, but Republican primaries were contested in 2000 and 2008.²¹ We further separate them based on who the contributor gave to in the primary (the future nominee or a losing candidate). Each giver is exposed to a similar national campaign via cable television, and thus we do not control for national trends in the primary campaign.

Concern may arise that candidates only place intra-party negative ads in markets containing districts that will not be close in the general election. First, Table 11 shows that there is no statistical difference in closeness between the markets that do and do not have primary advertisements. Second, primary markets with intra-party negative ads, compared to those markets with only positive ads, are in areas that are more close. Third, Democrats

¹⁹Since the fraction of negative advertising is undefined for places without any ads, we will omit individuals living in these markets from our analysis. Thus, we compare the dosage of negativity, and not merely an advertising effect.

²⁰Turnout information comes from David Leip's Election Atlas of the United States, which collects primary vote returns by county for the 2000, 2004, and 2008 presidential nominating contests.

²¹Gore had some opposition in 2000 by Senator Bradley. However, Bradley did not win a single contest against Gore and there were no intra-party negative ads aired in the primary.

and Republicans tend to advertise more slightly heavily in areas where they did slightly worse in the previous general election. Fourth, while Democrats appear to go negative equally in markets that do and do not favor their party, Republicans air negative ads slightly more in areas where they were not the favored candidates in previous elections.

For example, it is not the case that areas with close elections Table 11 shows that the volume and type of ads candidates place in a market do not appear to be correlated with the closeness of the previous Presidential general election.

5 Results

We begin with a basic regression to determine how the fraction of negative ads influences the conditional probability from Equation (1) for each party. Table 4, Column (1) demonstrates that doubling the fraction of intra-party negative ads (say from the average, 2 percent to 4 percent), results in a 1 percent decrease in the probability that a contributor to a non-winning Democratic primary candidate comes home to contribute to the winning Democrat, though this is not statistically different from zero. If we compare this to the average probability that an individual returns to his base, which is approximately 10 percent when averaging 2004 and 2008 together, the decreased likelihood of “coming home” is actually quite large stemming from a potentially small increase in negativity. This raw effect is similar for Republicans, as presented in Column (2). Here, the coefficient is slightly smaller, meaning there is a 0.6 percent decrease in returning home after being exposed to negativity; however, the Republicans’ overall mean rate of “coming home” is smaller as well, approximately 6 percent.

Columns (3) and (4) of Table 4 provide comparable results, but now restricts the sample to include individuals who gave to the winning candidate in the primary, as in Equation (2). When only estimating how negativity changes the conditional probability from Equation (1), we find that doubling negativity decreases the probability that a candidate contributes to the winner in the general election by 1.5 percent for Democrats and 1.9 percent for Republicans. When comparing this to the means in Table 1, 24 and 17 percent for Democrats and Republicans respectively, this effect size is 6 and 11 percent of the average probabilities, respectively. All of these models incorporate state fixed effects, an election year dummy, and a control for the volume of ads. Thus, negative ads may be equally detrimental for individuals who originally supported the winning candidate as for those who originally supported a losing candidate.²²

Table 5 provides additional robustness tests for the samples from Equation (1) and (2) in Columns (1)-(2) and (3)-(4), respectively. These specifications include all of the control variables in $\mathbf{H}_{y,m,P}$ from Equation 3. Specifically, we control for whether the candidate gave his initial contribution before the primary campaign in his state. The rationale for this is that if contributors give before the primary campaign is complete, they may be more susceptible to a “sour grapes” feeling after being exposed to a negative local campaign. If one’s initial

²²The results from Columns (1)-(4) remain consistent if we soak up any variation across markets by including media market-level fixed effects.

contribution comes after the primary in his state, he should be less affected by the negativity in his area, if at all. We find that those who gave prior to their state’s primary day are less likely to contribute to their party in the general election. We also include a control for the level of engagement in the primary contest (which may be correlated with both the tone and the probability of coming home) by controlling for the turnout in primary contests. Finally, we control for time varying factors that may affect an individual’s propensity to contribute to the ultimate winner and the level of negativity. These controls include the party’s tone and ad volume in the general election in that local market. The addition of these control variables did not change the sign but somewhat changes the magnitude of the coefficients on the $\ln(\%Negative)$ variables. However, the standard errors of the coefficients and of the regression increase with these additions.

5.1 Endogeneity

It could still be the case that parties collude and only advertise in areas where they do not fear missed campaign contributions in the general election. For example, it could be the case that in some markets within Texas, Republican candidates would not attack Ron Paul in fear of alienating his supporters in the general election. For this reason, we posit an instrumental variable strategy that takes into account this endogeneity concern.

We build upon the findings in Gandhi, Iorio and Urban (2013), where primary elections with more than two candidates are less likely to engage in negative advertising. This is due to the spillover benefits associated with “going negative” when there are more than two candidates in the race. For example, if John Edwards attacked Hillary Clinton, Barack Obama may have benefited from this without incurring any added costs. However, in duopoly contests, candidates have similar returns to positive and negative advertising. Our instrument captures this finding. We exploit variation in the number of candidates remaining at the time of each primary. Specifically, we determine the number of candidates remaining in each state/party/year combination by only counting candidates that can still plausibly win the nomination. We then recode this variable to compare duopoly and non-duopoly contests. Once only two candidates remain, the average rate of intra-party negativity increases. We document this first stage in Table 6, where duopolies exhibit 200 percent, or 4 times the negativity of non-duopolies. This is slightly larger than the effect found in Gandhi, Iorio and Urban (2013), though they only document this effect for gubernatorial, Senate, and House primary races. The effect may be more pronounced in Presidential primary contests. At the same time, the instrument is seemingly uncorrelated with an individual’s decision to return home to his/her base after making an initial decision to contribute to a winner or loser in the primary.²³

Table 6 strengthens our findings from Table 4. First, we determine that for Democrats who originally contributed to a losing candidate, the fraction of negativity in the market does not affect an individual’s ultimate contribution decision in the general election (Column

²³While concern may arise that closeness of the election is correlated with both the likelihood that a contest is a duopoly and the probability one returns to his/her base, the duopoly measure is seemingly unrelated to the ex post closeness measured by the HerfindahlHirschman Index of that state’s primary for each party in the data.

(1)). However, doubling the fraction of negativity in the Republican primary decreases the probability that financial supporters of a losing candidate contribute to the Republican who won the nomination by 1.6 percent. Further, Columns (3) and (4) show that primary negativity is detrimental for initial supporters of the winner, where doubling negativity decreases the probability that primary contributors will contribute to their party again in the general election by 1.8 percent for Democrats and 4.8 percent for Republicans. Thus, negativity can alienate individuals who support the winning candidate even more than those individuals who supported the opposition.

5.2 How much does negative advertising cost?

While negative advertising can be fundamental in helping a candidate to clinch his or her party's nomination, candidates might also consider all potential external costs of negative advertising prior to engaging in the activity in a primary contest. We remain agnostic on the benefits of negative advertising with respect to how voters learn about selecting the correct candidates. However, in Section 6, we document that, if anything, intra-party negativity in the primary deters voters from returning to their bases in the general election, or in some case, has no effect. In this section, we use a back-of-the-envelope calculation to calculate the external cost of "going negative." Focusing first on Democratic candidates, and using our preferred specification from Table 6 Column (1), we find that negativity does not affect one's propensity to give after giving to a losing candidate in the primary. However, Democrats who initially gave to the winning candidate in the primary were 1.8 percent less likely to give again in the general election after the fraction of negative advertising doubled. In 2004, 155,202 contributors gave to Kerry in the primary and in 2008, 207,554 contributors gave to Obama in the primary. Thus, doubling the fraction of negative advertising results in a decrease of 6,529 contributors. The average contribution amount for these two years was just under \$1,000 for primaries (See Table 2). Thus, the reduction in contributions based on doubling the fraction of negative ads is \$6.5 million, or \$2.8 million in 2004 and \$3.7 in 2008. If we instead provide a more conservative estimate, where we assume that only those givers in markets with negative ads are affected, this reduces to a loss of \$0.5 million in 2008 and \$0.9 million in 2004.

Creating a comparable calculation for Republicans, Table 6 Column (2) suggests that doubling the fraction of negative advertisements decreases the probability of Republican general election contributions by 1.6 percent. In 2000, 52,078 individuals gave to a losing Republican candidate, and in 2008, 116,760 gave to a Republican candidate other than McCain in the primary. This results in a decrease of 2,701 contributors. Similarly, doubling negativity made Republicans who initially gave to a winning candidate in the primary 4.8 percent less likely to give to that same candidate again in the general election. In 2000, 92,632 individuals gave to Bush in the primary, and in 2008, 124,434 individuals gave to McCain in the primary. Doubling the fraction of negative advertisements reduced the number of contributors by 4,124. An average contribution to a Republican primary candidate was \$671 and \$1,178 in 2000 and 2008, respectively. Thus, the overall reduction in contributions based on doubling the fraction of negative ads is \$12.8 million for Republicans, or \$9.2 million in

2008 and \$3.5 million in 2000. Providing a more conservative estimate, where we assume that only contributors in markest with negative ads will be affected, this reduces the loss to \$1.55 million in 2008 and \$1.8 million in 2000.

Next, we are careful to demonstrate that new givers are not inspired by intra-party negativity in the primaries, which would fill the gaps of the dollars foregone. Table 10 shows that negative advertisements also have a deterrent effect on contributors who did not give at all during the nominating phase of the election. While most of these effects are statistically indistinguishable from zero, we documet a 4 percent decrease in new givers when the fraction of negative advertising in Republican primaries doubles. We assert that this makes our estimate of foregone contributions more conservative.

It could also be the case that negative advertisements in the primary generate additional campaign contributions for eventual winners, thus offsetting this effect. We devote Section 9.1 to empirically estimating this effect, where we find that this is not the case. If anything, we assert that higher fractions of intra-party negative advertisements result in lower campaign contributions for the winning candidate.

6 Vote Choice

Most papers studying the effects of negative primaries on one’s decision to return to vote for his preferred party measure divisiveness using the ex-post closeness of the race. One exception to this is Wichowsky and Niebler (2010), who measure divisiveness with the fraction of negative advertisements aired in the race. However, their study uses aggregate data to study the effect. 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 bases. This survey asks individuals who they voted for in both the primary and general elections in March and November, respectively.²⁴ As mentioned previously, the literature is divided as to whether divisive primaries cause harm to general election candidates. Table 7 shows the percentage of CCAP respondents who fall into various categories based on for whom they indicated voting during both the nominaing 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 “coming home” and 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).

²⁴CCAP oversamples individuals living in both early-primary and battleground states.

$$W_{i,m,P} = \beta_0 + \beta_1 NA_{m,P} + \epsilon_{i,m,P} \quad (4)$$

Table 8 estimates the extensive margin effect negative ads have on coming home to one's base in Equation 4. 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 8 are based on those individuals who voted for a candidate 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 is non-positive.

7 Conclusion

In the 2008 presidential primary contests, candidates spent just shy of \$9 million on within-party attack advertising. Despite the fact that this is a small fraction of all primary spending, the potential consequences associated with running a negative primary campaign should be considered. Using data from the Center for Responsive Politics and the Wisconsin Advertising Project, we find that doubling the fraction of negative primary advertising decreases the probability that a contributor will give to his preferred party in the general election by about 1 percent. Persistence in giving is low. Less than 15 percent of contributors to a losing candidate in the primary return to contribute to anyone in the general election, and at most 40 percent of individuals who contributed to the winner in the primary return to contribute to the same candidate in the general election.

We find that local negative campaigns in primary contests deter contributors from returning home to contribute to their bases in the general election. Using back-of-the-envelope

calculations, we estimate that in 2008 alone for both parties, the total cost of foregone contributions is an average of \$8.4 million dollars. While a more positive campaign may inhibit a candidate's probability of winning the nomination, a candidate who fears being cash-constrained in the general election should remain cognizant of the potential dollars lost due to participating in a more negative campaign. Average primary negativity is low (near 3 percent of all ads in a given market), making our estimates somewhat conservative. In future election contests, it is likely that the negativity of a campaign will increase substantially, thus deterring more primary givers from contributing again in the general election.

8 Tables and Figures

Table 1: Summary Statistics: Probability of Coming Back to your Party

Panel A		
Republicans	2000	2008
Gave to Losing Republican in Primary and		
...Winning Republican in General	1.89	9.95
...Third Party in General	0.11	0.03
...Democrat in General	0.62	1.84
...No one in General	97.40	88.39
Observations	52,067	116,760
Gave to Winning Republican in Primary and		
...Winning Republican in General	5.73	27.93
...Third Party in General	0.02	0.00
...Democrat in General	0.27	1.55
...No one in General	93.99	70.94
Observations	92,632	124,434
Panel B		
Democrats	2004	2008
Gave to Losing Democrat in Primary and		
...Winning Democrat in General	5.14	14.91
...Third Party in General	0.11	0.02
...Republican in General	0.27	1.18
...No one in General	94.52	84.05
Observations	91,013	156,875
Gave to Winning Democrat in Primary and		
...Winning Democrat in General	8.02	40.35
...Third Party in General	0.05	0.00
...Republican in General	0.15	0.63
...No one in General	91.80	59.24
Observations	155,202	207,554

Notes: All cells are conditional probabilities from Equations (1) and (2). Data from Opensecrets, 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).

Table 2: Summary Statistics: Dollars Contributed

Republicans	2000	2004	2008
Primary Election Dollars Contributed	671.5 (386.4) [34,523,269]	1164.9 (749.2) [172,409,361]	1178.2 (982.6) [249,176,417]
Observations	51,447	148,190	221,846
General Election Dollars Contributed	744.5 (316.2) [7,483,899]	984.9 (707.4) [14,440,343]	733.4 (629.5) [56,931,193]
Observations	10,361	19,560	97,503
Democrats	2000	2004	2008
Primary Election Dollars Contributed	742.5 (319.6) [25,880,677]	987.0 (903.1) [224,045,884]	996.0 (917.5) [316,419,091]
Observations	35,166	227,286	343,927
General Election Dollars Contributed	678.3 (325.5) [5,774,936]	1099.9 (720.7) [28,786,616]	729.0 (651.3) [152,335,865]
Observations	8,590	26,622	238,313

Notes: Cells are average contribution amounts, conditional on contributing, means reported with standard deviations in parentheses. The total dollar amount of contributions in the given year/election cycle is in brackets.

Table 3: Summary Statistics: Primary Advertisements

Republicans	2000	2008
Fraction Within Party Negative Ads	0.353 (0.220)	0.0306 (0.0801)
Observations	35	72
Total Primary Ads	1024.9 (838.2)	1066.9 (1767.9)
Observations	75	210
Democrats	2004	2008
Fraction Within Party Negative Ads	0.0260 (0.0488)	0.0284 (0.0659)
Observations	74	135
Total Primary Ads	1957.9 (2328.3)	1861.1 (2180.2)
Observations	100	210

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

Table 4: Do Negative Campaigns Deter Contributors from Coming Back to Their Bases?

DV =1 if Gave to Same Party's Winner in General				
	Democrat (1)	Republican (2)	Democrat (3)	Republican (4)
ln(Dem % Negative)	-0.0112 (0.0103)		-0.0147*** (0.00544)	
ln(Dem Ads)	0.00607 (0.00657)		-0.00572 (0.00765)	
ln(GOP % Negative)		-0.00617*** (0.00155)		-0.0189*** (0.00380)
ln(GOP Ads)		0.00138** (0.000552)		0.000298 (0.000832)
2008	0.121*** (0.0144)	0.0633*** (0.00461)	0.354*** (0.0101)	0.184*** (0.0113)
Fixed Effects Included:				
State	X	X	X	X
Observations	39811	41423	64266	47298

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1) and (3) include data from 2004 and 2008, Columns (2) and (4) include data from 2000 and 2008. The samples in Columns (1) and (2) condition on giving to a losing candidate in the primary. For example, in Column (1), the contributor gave to someone other than Obama or Kerry in the primary. The samples in Columns (3) and (4) condition on giving to a winning candidate in the primary. For example, in Column (3), the contributor gave to either Obama or Kerry in the primary. The dependent variable equals one if that contributor then gave to Obama or Kerry in the general election, and zero otherwise.

Table 5: Do Negative Campaigns Deter Contributors from Coming Back to Their Bases?

DV =1 if Gave to Same Party's Winner in General				
	Democrat (1)	Republican (2)	Democrat (3)	Republican (4)
ln(Dem % Negative)	-0.0135 (0.0106)		-0.00565 (0.00862)	
ln(Dem Ads)	0.00661 (0.00906)		0.0151 (0.0124)	
ln(GOP % Negative)		-0.0163*** (0.00341)		-0.00604 (0.00569)
ln(GOP Ads)		-0.00218 (0.00135)		0.00289 (0.00190)
Gave Before Primary (D)	-0.109*** (0.00685)		-0.170*** (0.0252)	
Gave Before Primary (R)		-0.144*** (0.0433)		-0.108*** (0.0204)
ln(Dem General % Negative)	-0.00437 (0.00802)		0.0104 (0.0150)	
ln(GOP General % Negative)		0.00643 (0.0210)		0.0936*** (0.0216)
ln(Dem General Airings)	0.00367 (0.0111)		-0.0227 (0.0148)	
ln(GOP General Airings)		-0.00433** (0.00190)		0.00155 (0.00230)
Democratic Turnout	0.439 (0.400)		0.245 (0.246)	
Republican Turnout		-0.00171 (0.00311)		-0.0244** (0.00931)
Fixed Effects Included:				
State	X	X	X	X
Year	X	X	X	X
Observations	30769	24019	30551	23860

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1) and (3) include data from 2004 and 2008, Columns (2) and (4) include data from 2000 and 2008. The samples in Columns (1) and (2) condition on giving to a losing candidate in the primary. For example, in Column (1), the contributor gave to someone other than Obama or Kerry in the primary. The samples in Columns (3) and (4) condition on giving to a winning candidate in the primary. For example, in Column (3), the contributor gave to either Obama or Kerry in the primary. The dependent variable equals one if that contributor then gave to Obama or Kerry in the general election, and zero otherwise.

Table 6: Instrumental Variables

IV: Stage 2				
DV =1 if Gave to Same Party's Winner in General				
	Democrat	Republican	Democrat	Republican
	(1)	(2)	(3)	(4)
ln(Dem % Negative)	0.00223 (0.00683)		-0.0182*** (0.00571)	
ln(GOP % Negative)		-0.0156*** (0.00568)		-0.0477*** (0.0115)
Fixed Effects Included:				
State	X	X	X	X
Year	X	X	X	X
Observations	39321	38726	63281	43569
Number of States	33	32	42	31
IV: Stage 1				
DV =ln(% intra-party negativity)				
	Democrat	Republican	Democrat	Republican
	(1)	(2)	(3)	(4)
Duopoly _D	2.378*** (0.0371)		2.402*** (0.0298)	
Duopoly _R		1.853*** (0.0191)		1.894*** (0.0223)
Fixed Effects Included:				
State	X	X	X	X
Year	X	X	X	X
Observations	39321	38726	63281	43569
Number of States	33	32	42	31
F-Statistic	4106.3	9431.7	6507.6	7226.8

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1) and (3) include data from 2004 and 2008, Columns (2) and (4) include data from 2000 and 2008. The samples in Columns (1) and (2) condition on giving to a losing candidate in the primary. For example, in Column (1), the contributor gave to someone other than Obama or Kerry in the primary. The samples in Columns (3) and (4) condition on giving to a winning candidate in the primary. For example, in Column (3), the contributor gave to either Obama or Kerry in the primary. The dependent variable equals one if that contributor then gave to Obama or Kerry in the general election, and zero otherwise.

Table 7: Summary Statistics: Probability of Coming Back to your Party (2008)

Panel A	
Republicans	
Voted for Losing Republican in Primary and	
...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
Voted for McCain in Primary and	
...McCain in General	79.03
...Third Party in General	0.85
...Obama in General	18.01
...No one in General	2.12
Observations	944
Panel B	
Democrats	
Voted for Losing Democrat in Primary and	
...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
Voted for Obama in Primary and	
...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 8: Do Negative Campaigns Deter Voters in the General Election?

DV =1 if Voted for Same Party's Winner in General				
	Democrat (1)	Republican (2)	Democrat (3)	Republican (4)
Negative Ads (D)	-0.642** (0.297)		-0.648 (0.800)	
Negative Ads (R)		-0.106* (0.0583)		-0.374** (0.152)
Observations	3033	2116	1707	661

Robust standard errors 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 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.

References

- Andreoni, Jim.** 1990. "Impure Altruism and Donations to Public Goods: A Theory of Warm-glow Giving." *Economic Journal*, 100: 464–477.
- Angrist, Joshua D., and Jorn-Steffen Pischke.** 2008. *Mostly Harmless Econometrics: An Empiricists' Companion*. Princeton University Press.
- Ansolabehere, Stephen, John M. de Figueiredo, and James M. Snyder Jr.** 2003. "Why Is There So Little Money in U.S. Politics?" *Journal of Economic Perspectives*, 17: 105–130.
- Ansolabehere, Stephen, Shanto Iyengar, Adam Simon, and Nicholas Valentino.** 1994. "Does Attack Advertising Demobilize the Electorate?" *American Political Science Review*, 88 (4): 829–838.
- Atkeson, Lonna Rae.** 1998. "Divisive Primaries and General Election Outcomes: Another Look at Presidential Campaigns." *American Journal of Political Science*, 42(1): 256–271.
- Austen-Smith, David.** 1995. "Campaign Contributions and Access." *American Political Science Review*, 89(3): 277–303.
- Austen-Smith, David.** 1998. "Allocating Access for Information and Contributions." *Journal of Law, Economics, and Organization*, 15(2): 277–303.
- Baron, David P.** 1989. "Service Induced Campaign Contributions and the Electoral Equilibrium." *Quarterly Journal of Economics*, 104: 45–72.
- Bernstein, Robert A.** 1977. "Divisive Primaries Do Hurt: U.S. Senate Races, 1956-1972." *The American Political Science Review*, 71 (2): 540–545.
- Born, Richard.** 1981. "The Influence of House Primary Election Divisiveness on General Election Margins, 1962-1976." *The Journal of Politics*, 43 (3): 640–661.
- Brader, Ted.** 2006. *Campaigning for Hearts and Minds: How Emotional Appeals in Political Ads Work*. The University of Chicago Press.
- Broder, David S.** 2008, April 24. "The Democrats' Worst Nightmare." *The Washington Post*, p. A21.
- Chappell, H.W. Jr.** 1982. "Campaign Contributions and Congressional Voting: A Simultaneous Probit-Tobit Model." *Review of Economics and Statistics*, 62(1): 77–83.
- Claessens, Stijn, Erik Feijen, and Luc Laeven.** 2008. "Political connections and preferential access to finance: The role of campaign contributions." *Journal of Financial Economics*, 88(3): 554 – 580. Darden - {JFE} Conference Volume: Capital Raising in Emerging Economies.

- Cotton, Christopher.** 2012. "Pay-to-play Politics: Informational Lobbying and Campaign Finance Reform when Contributions Buy Access." *Journal of Public Economics*, 96(3-4): 369–386.
- Dowdle, Andrew, Scott Limbocker, Song Yang, Patrick A. Stewart, and Karen Sebold.** 2013. *Invisible Hands of Political Parties in Elections: Party Activists and Political Aggregation from 2004 to 2012*. Palgrave Pivot.
- Fremeth, Adam, Brian Kelleher Richter, and Brandon Schaufele.** 2013. "Campaign Contributions over CEOs' Careers." *American Economic Journal: Applied Economics*, 5(3): 170–88.
- Gandhi, Amit, Daniela Iorio, and Carly Urban.** 2013. "Negative Advertising and Political Competition." *Working Paper*.
- Geer, John G.** 2006. *In Defense of Negativity: Attack Ads in Presidential Campaigns*. University of Chicago Press.
- Gimpel, James G, and Frances E. Lee.** 2008. "The Check Is in the Mail : Elections Interdistrict Funding Flows in Congressional." *American Journal of Political Science*, 52(2): 373–394.
- Goldstein, Ken, and Paul Freedman.** 2000. "New Evidence for New Arguments: Money and Advertising in the 1996 Senate Elections." *The Journal of Politics*, 62 (4): 1087–1108.
- Goldstein, Ken, and Paul Freedman.** 2002a. "Campaign Advertising and Voter Turnout: New Evidence for a Stimulation Effect." *The Journal of Politics*, 64 (3): 721–740.
- Goldstein, Ken, and Paul Freedman.** 2002b. "Lessons Learned: Campaign Advertising in the 2000 Elections." *Political Communication*, 19 (1): 5–28.
- Gordon, Sanford C., Catherine Hafer, and Dimitri Landa.** 2007. "Consumption or Investment? On Motivations for Political Giving." *Journal of Politics*, 69(4): 1057–1072.
- Hacker, Andrew.** 1965. "Does a "Divisive Primary Harm a Candidate's Election Chances?" *The American Political Science Review*, 59 (1): 105–110.
- Haughwout, Andrew, Richard Peach, and Joseph Tracy.** 2008. "Juvenile Delinquent Mortgages: Bad Credit or Bad Economy?" *Journal of Urban Economics*, 64(2): 246–257.
- Henderson, Michael, D. Sunshine Hillygus, and Trevor Tompson.** 2010. "'Sour Grapes" or Rational Voting? Voter Decision Making Among Thwarted Primary Voters in 2008." *Public Opinion Quarterly*, 74(3): 499–529.
- Hogan, Robert E.** 2003. "The Effects of Primary Divisiveness on General Election Outcomes in State Legislative Elections." *American Politics Research*, 31 (1): 27–47.
- Joulfaian, David, and Michael L. Marlow.** 1991. "Incentives and Political Competition." *Public Choice*, 69: 351–355.

- Kenney, Patrick J.** 1988. "Sorting Out the Effects of Primary Divisiveness in Congressional and Senatorial Elections." *The Western Political Quarterly*, 41(4): 765–777.
- Kenney, Patrick J., and Tom W. Rice.** 1984. "The Effect of Primary Divisiveness in Gubernatorial and Senatorial Elections." *The Journal of Politics*, 46 (3): 904–915.
- Kenney, Patrick J., and Tom W. Rice.** 1987. "The Relationship between Divisive Primaries and General Election Outcomes." *American Journal of Political Science*, 31(1): 31–44.
- Kroszner, R.S., and Thomas Stratmann.** 1998. "Interest-Group Competition and the Organization of Congress: Theory and Evidence from Financial Services' Political Action Committees." *American Economic Review*, 88(5): 1163–1187.
- Lau, Richard R., Lee Sigelman, and Ivy Brown Rovner.** 2007. "The Effects of Negative Political Campaigns: A Meta-Analytic Reassessment." *The Journal of Politics*, 69 (4): 117–1209.
- Lau, Richard R., Lee Sigelman, Caroline Heldman, and Paul Babbitt.** 1999. "The Effects of Negative Political Advertisements: A Meta-Analytic Assessment." *The American Political Science Review*, 93 (4): 851–875.
- Lengle, James I.** 1980. "Divisive Presidential Primaries and Party Electoral Prospects, 1932-1976." *American Politics Research*, 3: 261–277.
- Lengle, James I., Diana Owen, and Molly W. Sonner.** 1995. "Divisive Nominating Mechanisms and Democratic Party Electoral Prospects." *The Journal of Politics*, 57 (2): 370–383.
- Makse, Todd, and Anand E. Sokhey.** 2010. "Revisiting the Divisive Primary Hypothesis: 2008 and the Clinton-Obama Nomination Battle." *American Politics Research*, 38(2): 233–265.
- Morton, Rebecca, and Charles Cameron.** 1992. "Elections and the Theory of Campaign Contributions: A Survey and Critical Analysis." *Economics & Politics*, 4(1): 79–108.
- Mutz, Diana C.** 1995. "Effects of Horse-Race Coverage on Campaign Coffers: Strategic Contributing in Presidential Primaries." *The Journal of Politics*, 57 (4): 1015–1042.
- Piereson, James E., and Terry B. Smith.** 1975. "Primary Divisiveness and General Election Success: A Re-examination." *The Journal of Politics*, 37 (2): 555–562.
- Polsby, Nelson W.** 1983. *Consequences of Party Reform*. New York, NY: Oxford University Press.
- Reagan, Ronald W.** 1990. *Ronald Reagan: An American Life*. Simon and Schuster.
- Ridout, Travis N., and Michael M. Franz.** 2011. *The Persuasive Power of Campaign Advertising*. Temple University Press.

- Snyder, James.** 1992. "Long-Term Investing in Politicians; Or Give Early Give Often?" *Journal of Law and Economics*.
- Snyder, James M.** 1990. "Campaign Contributions as Investments: The U.S. House of Representatives, 1980-1986." *The Journal of Political Economy*, 98: 1195–1227.
- Snyder, James M.** 1991. "On Buying Legislatures." *Economics & Politics*, 3(2): 93–109.
- Stratmann, Thomas.** 1991. "What Do Campaign Contributions Buy? Deciphering Causal Effects of Money and Votes." *Southern Economic Journal*, 57(3): 606–620.
- Stratmann, Thomas.** 1992. "Are Contributors Rational? Untangling Strategies of Political Action Committees." *Journal of Political Economy*, 100(3): 647–664.
- Stratmann, Thomas.** 1995. "Campaign Contributions and Congressional Voting: Does the Timing of Contributions Matter?" *Review of Economics and Statistics*, 98(6): 1195–1227.
- Stratmann, Thomas.** 1998. "The Market for Congressional Votes: Is the Timing of Contributions Everything?" *Journal of Law and Economics*, 41: 85–114.
- Thrush, Glenn.** 2013. "Hillary Clinton's 2008 slaps still sting President Obama." *Politico*, <http://www.politico.com/story/2013/08/barack-obama-hillary-clinton-2008-campaign-95035.html>.
- Urban, Carly, and Sarah E. Niebler.** 2014. "Dollars on the Sidewalk: Should U.S. Presidential Candidates Advertise in Uncontested States?" *American Journal of Political Science*, 58(2): 322–336.
- Ware, Alan.** 1979. "Divisive' Primaries: The Important Questions." *British Journal of Political Science*, 9(3): 381–384.
- Wattenberg, Martin P., and Craig Leonard Briens.** 1999. "Negative Campaign Advertising: Demobilizer or Mobilizer?" *American Political Science Review*, 93 (4): 891–899.
- Wichowsky, Amber, and Sarah E. Niebler.** 2010. "Narrow Victories and Hard Games: Revisiting the Primary Divisiveness Hypothesis." *American Politics Research*, 38(6): 1052–1071.
- Wooldridge, Jeffrey M.** 2002. *Econometric Analysis of Cross Section and Panel Data*. The MIT Press.
- Zeleny, Jeff.** 2007, February 27. "As Candidate, Obama Carves Antiwar Stance." *The New York Times*.

9 Appendix

Table 9: Candidates, Convention Dates, and Contribution Limits by Year

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

Table 10: Negative Campaigns Deter those who did not give in the Primary from Giving in the General Election

DV =1 if Gave in the General and not the Primary				
	OLS		IV	
	Democrat (1)	Republican (2)	Democrat (3)	Republican (4)
ln(Dem % Negative)	-0.0138 (0.00914)		-0.000638 (0.00386)	
ln(Dem Ads)	-0.000723 (0.0129)			
ln(GOP % Negative)		-0.00446 (0.00421)		-0.0379*** (0.00929)
ln(GOP Ads)		0.00107 (0.00160)		
Fixed Effects Included:				
State	X	X	X	X
Year	X	X	X	X
Observations	105807	121097	104574	117141

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1) and (3) include data from 2004 and 2008, Columns (2) and (4) include data from 2000 and 2008. Each sample conditions on not giving in the primary. The dependent variable equals one if that contributor then gave to a party nominee in the general election, and zero otherwise.

Table 11: Summary Statistics: Primary Advertisements and Lagged Election Results

	Market with any Primary Ad	Market with no Primary Ads
Closeness	12.616 (0.363)	12.153 (0.785)
N	145	786
	Market with Primary Ads and any Negative Primary Ads	Market with Primary Ads and no Negative Primary Ads
Closeness	11.667 (0.393)	15.834*** (0.836)
N	607	179
	Market with any Democratic Primary Ads	Market with no Democratic Primary Ads
Democratic %	45.046 (0.344)	46.549*** (0.320)
N	499	432
	Market with any Republican Primary Ads	Market with no Republican Primary Ads
Republican %	48.603 (0.344)	52.070*** (0.504)
N	645	286
	Market with Democratic Primary Ads (some Negative)	Market with Democratic Primary Ads (none Negative)
Democratic %	44.829 (0.468)	45.235 (0.498)
N	232	267
	Market with Republican Primary Ads (some Negative)	Market with Republican Primary Ads (none Negative)
Republican %	47.814 (0.367)	53.116*** (0.829)
N	549	96

Notes: Cells are means, standard errors in parentheses. *** marks that the two 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 year in the given state. The ad data come from the Wisconsin Advertising Project (WiscAds). In 2000, the WiscAds data cover the top 75 media markets; in 2004 they covers the top 100 markets; 2008 covers all 210 media markets.

Table 12: Do Negative Campaigns Deter Contributors from Coming Back to Their Bases? Dropping Individuals who Gave After the Primary was Determined but Before the Convention

		DV = 1 if Gave to Same Party's Winner in General							
		OLS				IV			
		Democrat (1)	Republican (2)	Democrat (3)	Republican (4)	Democrat (5)	Republican (6)	Democrat (7)	Republican (8)
ln(Dem % Negative)		-0.0112 (0.0105)		-0.0155*** (0.00543)		0.00225 (0.00683)		-0.0181*** (0.00570)	
ln(Dem Ads)		0.00626 (0.00660)		-0.00318 (0.00762)					
ln(GOP % Negative)			-0.00389** (0.00163)		-0.0174*** (0.00472)		-0.0155*** (0.00569)		-0.0477*** (0.0116)
ln(GOP Ads)			-0.00220 (0.00200)		-0.00187 (0.00384)				
Fixed Effects Included:									
State	X	X	X	X	X	X	X	X	X
Year	X	X	X	X	X	X	X	X	X
Observations	39602	39395	64045	44383	39312	38694	63265	43533	

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (1), (3), (5), and (7) include data from 2004 and 2008, Columns (2), (4), (6), and (8) include data from 2000 and 2008. The samples in Columns (1), (2), (5), and (6) condition on giving to a losing candidate in the primary. For example, in Column (1), the contributor gave to someone other than Obama or Kerry in the primary. The samples in Columns (3), (4), (7) and (8) condition on giving to a winning candidate in the primary. For example, in Column (3), the contributor gave to either Obama or Kerry in the primary. The dependent variable equals one if that contributor then gave to Obama or Kerry in the general election, and zero otherwise. Columns (1)-(4) provide OLS estimates and (5)-(8) provide IV estimates.

9.1 Negativity in the Primary and Campaign Contributions

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.^{25,26} 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 5.1.

Table 13 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 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.

²⁵We 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.

²⁶We use population data from the 2000 Census at the zip code level to determine which zip codes contain no individual contributors in the primary.

Table 13: Negativity and Primary Contributions: IV Results

Dependent Variable	Stage 1		Stage 2	
	% Intra-party Negative Ads Democrat (1)	Republican (2)	$\frac{\$s}{Pop}$ Contributed to Winner Democrat (3)	Republican (4)
Duopoly _D	0.13444*** (0.0059)			
Duopoly _R		0.11422*** (0.0079)		
ln(Dem % Negative)			0.235 (2.579)	
ln(Rep % Negative)				-10.03 (7.198)
Fixed Effects Included:				
State	X	X	X	X
Year	X	X	X	X
Observations	26565	20212	26565	20212
F-Statistic (Stage 1)	523.4	207.6		

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. 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.