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SMALL CAMPAIGN DONORS

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### **ABSTRACT**

We build a new dataset of all 340 million individual contributions reported to the U.S. Federal Election Commission 2005-2020 to study the characteristics and behavior of small campaign donors. The reporting requirements of fundraising platforms such as ActBlue enable us to observe contribution-level information on the vast majority of small donations, which have grown rapidly since 2005. Small donors differ from large donors in gender, ethnicity, and income, and they are more representative of the U.S. population. They act less strategically than large donors, respond more to candidates' public prominence, and are more susceptible to TV and social media ads.

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A data appendix is available at <http://www.nber.org/data-appendix/w30050>

# 1 Introduction

Small donors – citizens contributing small amounts of money to political campaigns – have become a topical issue of U.S. politics in recent years. The media has presented them as increasingly important to the outcome of elections<sup>1</sup>, and sometimes pictured them as initiating a “revolution”<sup>2</sup>, in particular for their potential to mitigate the capture of the political process by interest groups and wealthy individuals. Yet, due to a lack of disaggregated data, we know little about small donors and their behavior.

In this paper, we provide the first comprehensive evidence on the characteristics and behavior of small donors, using new data emerging from the growing use of “conduits” – organizations that channel contributions from individuals to campaigns. We build a novel dataset of all 340 million contributions made by individuals and reported to the U.S. Federal Election Commission (FEC) between 2005 and 2020. A key characteristic of this dataset is that it allows us to observe contribution-level data for the vast majority of donations, no matter how small. This is because most contributions in recent years have been channeled by conduits such as ActBlue, an online fundraising platform launched in 2004 that now dominates Democratic fundraising, and WinRed, its Republican counterpart launched in 2019. Conduits have more stringent reporting requirements than traditional campaign committees: they must report detailed information on all the contributions they collect, while campaigns are only obligated to give information on donors giving more than \$200. In the 2020 election cycle, about 87.2% of reported contributions went through ActBlue or WinRed – 86.5% of which would have not been observable if they had been made directly to campaign committees. By including these contributions, we can observe contribution-level data for 92% of the total amounts received by candidates during that cycle.

For each of these observed contributions, the FEC data include information about the amount and date of the contribution, the donor’s first and last names, their address, occupation, and employer. We use this information to create unique donor identifiers, and differentiate “small” from “large” donors based on their total contributions: we call “small donors” those who do not give more than \$200, over a two-year election cycle, to any one committee to which they contribute.<sup>3</sup> This definition is specific to an election cycle, so that the same individual can be a small donor during a cycle, but large in the next. Out of 42.9 million unique donor-cycles in our dataset, 23.2 million are small donors. In addition, we use donors’ name, occupation and address to infer their gender, ethnicity, geo-location, home value and income. We complement these data with information on all House, Senate, and presidential candidates for 2005-2020, for which we collected electoral information and hand-coded gender and ethnicity.

Using this new dataset, we produce four sets of results. The first gives evidence on the growing importance of small donors and their contributions in U.S. politics. The number of observable small

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<sup>1</sup>See, e.g., “‘Not the billionaires’: why small-dollar donors are Democrats’ new powerhouse” (*The Guardian*, March 10, 2019); “Why Famous, Powerful Presidential Candidates Are Begging You for Five Dollars” (*The New Yorker*, June 10, 2019).

<sup>2</sup>See, e.g., “Campaign Reforms May Never Pass, But the Low-Dollar Revolution Has Already Begun” (*American Prospect*, February 28, 2019), and “Small dollars, big changes” (*The Washington Post*, February 6, 2020).

<sup>3</sup>The choice of \$200 comes from the fact that it is the legal reporting threshold for campaign committees in the U.S. With this definition, a small donor is a donor who, absent the reporting features described above, would not be observable. See Section 2.1 for more details. In Section 4, we report results using finer categories of donor size.

donors has increased dramatically over time, from about 50,000 in the 2006 election cycle to nearly 14.5 million in 2020.<sup>4</sup> In comparison, the number of large donors has increased from 1.3 to 5.4 million over the same period.

Our second set of results provide descriptive evidence on the characteristics of small donors and the patterns of their contributions, as well as differences with large donors. First, the share of women is larger among small donors, especially in recent election cycles: 54.1% of small donors are women, compared to 37.5% of large donors. Second, while ethnic minorities are underrepresented among both small and large donors, this representational gap is less pronounced among small donors. In particular, the share of Black and Hispanic donors among small donors (6.7% and 7.3%, respectively) is 1.8 to 2 times larger than among large donors. Third, jobs in high-education occupational categories are overrepresented among small donors (40.6%, against 17.4% for the US working age population), but less so than among large donors (55.9%). The median annual salary of employed small donors (\$75,458) is 24% lower than the one of large donors. Similarly, their median home value is 33% lower. Fourth, both small and large donors are concentrated, in terms of donors per capita, in the same areas: the coasts and in large metropolitan areas. Fifth, contributions by small and large donors are far from being perfectly correlated across candidates. While some candidates receive nearly no small contribution, others receive a much larger share of all small donor contributions than their share of large donor contributions. Finally, the timing of contributions by small and large donors differs substantially: in particular, small donors contribute much more in the aftermath of key events, such as the death of Justice Ruth Bader Ginsburg in 2020.

In the third part of the analysis, we focus on the determinants of small and large donor contributions. To organize our investigation, we develop a simple conceptual framework that encompasses three motives underlying donor choice: the electoral motive, the expressive motive, and the favor motive. We single out key factors that are predicted to influence donor behavior: the closeness of the race, whether the candidate is the incumbent, and the alignment between the donor and the candidate in terms of ideology, gender, ethnicity, and geography (being from the same district). We compare the influence of these factors for small and large donors with saturated fixed effects models including election, office (Senate vs. House), state, and, most importantly, contributor fixed effects. Our main regressions focus on donations to Democratic candidates for the period 2012-2020, during which the penetration of ActBlue was very high, ensuring that we observe most donations by both small and large donors. We also check whether our findings extend to primary elections and to donations to Republican candidates.

Only some of the factors highlighted in the conceptual framework prove to be relevant in practice. The one with the largest impact, by far, is geography: donors contribute much more to candidates from their district. The other factors showing a positive impact are the closeness of the race, the gender and ethnic match between the donor and the candidate, and the ideology of the candidate (with candidates

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<sup>4</sup>One cannot know the exact number of small donors, as small donors contributing directly to committees (i.e. not through a conduit organization) are only reported by committees through their total dollar contribution amount, referred to as “unitemized contributions”. However, using those aggregates, we show in Section 2 that (i) our dataset includes the vast majority of small donors, and (ii) the increase in observable small donors cannot solely be driven by an increase share of donors that are made visible thanks to conduit reporting.

on the left and center of the distribution of ideologies attracting more donations than those on the right). Interestingly, we find that across the board the magnitudes of these effects are lower for small donors than for large donors. For instance, in our preferred specification, large donors contribute 2.9% more to a candidate in a close race than in a safe one, against a non-significant 1.0% for small donors. Similarly, large donors contribute 367% more to in-district candidates, compared to 109% more for small donors. These differences increase evenly with the size of the donors when we investigate the effects of those factors across different deciles of donors defined based on the size of their total donations.

Interpreted through the lens of our conceptual framework, our findings suggest that small donors are more driven by expressive motives than large donors, and less by the desire to influence the outcome of the election or to curry favor with politicians. However, the relative unimportance for small donors of matching factors such as ethnicity and gender suggests that their expressive utility of contributing is driven by other considerations than the desire to support a candidate resembling them. Indeed, our analysis shows that Democratic out-of-district small donor donations tend to go to nationally prominent contests, either because the Democratic candidate holds a leadership position within the party or one of its sub-groups (e.g., Nancy Pelosi or Alexandria Ocasio-Cortez) or because the Republican candidate against which the Democratic candidate runs is a nemesis of the Democratic Party (e.g., Amy McGrath, who challenged Mitch McConnell in 2020). We discuss in Section 4 how these findings, together with the descriptive patterns on the timing of small donor contributions, are suggestive evidence of a “salience-modulated” expressive motive.

The effects of all these factors on donor behavior can be driven by the combination of donors’ own motives (push factors) and/or differences in campaign outreach activities across races and candidates (pull factors). While fully disentangling the effects of push and pull factors is beyond the scope of this paper, we do make progress in this direction by providing evidence on the causal impact of two specific pull factors on contributions: TV and social media advertisements, which together account for more than half of all candidate campaign expenses (Ridout et al., 2021).

Our fourth set of results establish that advertising on both TV and social media positively impacts donations, in particular from small donors. First, to estimate the effects of TV ads, we extend Spenkuch and Toniatti (2018)’s border discontinuity design to House and Senate Democratic candidates of the 2012-2020 period. We find that Democratic ads and Republican ads have effects of opposite signs on the number of small donors contributing to Democratic candidates, as well as on the amount of their contributions. The effects of Democratic ads are bigger for small donors: an additional 1,000 Democratic ads in a county increases the number of small contributors by 4.3% of the mean and their total contributions by 6.3% of the mean. For large donors, those increases are 3.8% and 2.3%, respectively.

Second, we use an event study to estimate the effects of ads on Meta’s platforms (Facebook and Instagram) made by Democratic candidates during the 2020 election. We find that these ads substantially increase the number of small and large contributors and the amounts of their contributions in the first week, with lower but persistent effects in the following weeks. As for TV ads, the effects of social media ads are

larger for small donors than large donors: a week of ads in a state by a specific candidate increases the number of unique small donors and their total contributions (to that candidate in that state) by factors of 6.6 and 9.5 relative to their mean value, against 1.9 and 2.8 for large donors. While political ads are only one of many tools in the fundraising toolkit of campaigns, the magnitude of the effects of both TV ads and social media ads suggests that pull factors play an important role to explain the behavior of donors, and particularly small ones.<sup>5</sup>

Estimating the dollar returns of money spent by candidates on political ads also reveals whether, beyond mobilizing voters, this form of campaign communication can generate financial returns. Back-of-the-envelope calculations suggest that these returns are substantial for social media ads (close to 59%), but not for TV ads (contributions generated by those ads only amounted to 4.5% of their total cost). These results might explain the increasing use of social media by candidates, in particular among challengers and primary election candidates (Fowler et al., 2021), who might be lacking the large fundraising apparatus of incumbents.

**Contribution to the literature** A large literature focuses on the determinants and consequences of campaign donations (for a literature review, see Dawood, 2015). These studies have mainly focused on the total aggregate resources available for political campaigns or on large political contributions (Gimpel et al., 2006; Bonica, 2014; McCarty et al., 2006; Heerwig, 2016; Rhodes et al., 2018; Bekkouche et al., 2022; Lessem et al., 2023). However, the motives underlying large donor contributions uncovered by previous studies, such as policy influence and access to politicians (see e.g., Grossman and Helpman, 1994; Gordon et al., 2007; Chamon and Kaplan, 2013; Barber, 2016; Babenko et al., 2024), may not hold validity for small donors. We contribute to the literature by studying the behavior of small donors, and the way in which it differs from the behavior of large donors.

Small donors have been overlooked by the theoretical literature (see Bouton et al., 2024, for an exception) and they have only been recently examined by empirical studies. Existing empirical work mostly relies on survey data, such as the American National Election Studies (ANES), the Cooperative Election Survey (CES), or smaller surveys directly targeting small donors (Graf et al., 2006; Joe et al., 2008; Lipsitz and Panagopoulos, 2011; Malbin, 2013; La Raja and Schaffner, 2015; Albert and La Raja, 2020). These studies find that small donors are descriptively different from large donors, notably along gender and ethnic lines.<sup>6</sup> Our paper relies on administrative data, thereby circumventing well-known limitations of self-reported data, including misreporting and lack of representativeness. Furthermore, surveys such as the ANES do not indicate which candidates donors actually contribute to. Our data do, enabling us to study small donors' behavior by analyzing the characteristics of the races, candidates, and campaigns they choose to donate to.

A few papers employ alternative strategies to avoid relying only on surveys. Culberson et al. (2019) and

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<sup>5</sup>This result is in line with the model of small campaign donors proposed by Bouton et al. (2024).

<sup>6</sup>On ethnic representation in campaign contributions, see Grumbach and Sahn (2020).

Albert and La Raja (2020) consider small donors in an aggregate way, by analyzing unitemized donations.<sup>7</sup> Closest to our paper, Alvarez et al. (2020) study the small donors to Bernie Sanders’s 2016 campaign using ActBlue data. They show that donors contributing less than \$200 are younger, poorer, and that they are more likely to be women. Instead of focusing on a unique election and candidate, we consider the universe of small donors between 2005 and 2020 and thus provide a more comprehensive picture of small donor characteristics.

Finally, we contribute to the literature on the effects of electoral campaigns on political behavior (see e.g. Gerber and Green, 2000; Pons, 2018; Le Pennec and Pons, 2023), focusing on an intermediate behavior between casting a vote and rarer, costlier actions like protesting. The literature studying the effect of TV advertising on voter behavior finds little effect on turnout, but evidence that it influences vote shares (Huber and Arceneaux, 2007; Krasno and Green, 2008; Spenkuch and Toniatti, 2018; Sides et al., 2021). A recent literature suggests similar effects of social media ads (Hager, 2019; Coppock et al., 2022; Haenschen, 2023),<sup>8</sup> which are used by a much larger share of candidates (Fowler et al., 2021). Building on these papers, we show that TV and social media ads also increase political donations.<sup>9</sup>

## 2 Data and descriptive statistics

Our dataset contains all the contributions made by individuals and reported to the U.S. Federal Election Commission (FEC) between January 1, 2005 and December 31, 2020. This period covers eight distinct two-year election cycles, which we delimit using calendar years (e.g., the 2006 cycle runs from January 1, 2005 to December 31, 2006). The FEC data, which are publicly available, contain all contributions to entities raising more than \$5,000 for federal elections, whether they are candidates, parties, or any other political action committee (PAC). Overall, they reflect a total of 340 million unique contributions.

We use these data to build a novel dataset including the contributions of uniquely identified individual donors, small and large, as well as detailed socio-demographic characteristics of these donors and of the candidates receiving their contributions. We see this dataset as an important contribution of our paper. Appendix A details all the cleaning, verification, and linking procedures we implement. Below, we provide more information on the key features of our data that, unlike existing databases, allow us to observe the vast majority of political contributions, whatever their amount (Section 2.1). We then explain how we identify and define small donors, and show how much their number has increased over time (Section 2.2).

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<sup>7</sup>Albert and La Raja (2020) also show that the total aggregate contributions channeled by ActBlue has surged between 2008 and 2018. However, we show that both unitemized contributions and ActBlue contributions include many contributions from large donors, making them imperfect objects to study small donors.

<sup>8</sup>Brockman and Green (2014) find that online ads could help voters recall candidates’ names, but not positively evaluate them.

<sup>9</sup>Green et al. (2015) conducted a field experiment to examine the impact of nonpartisan messages on small contributions in New York City’s 2013 election. They find that providing information to voters on the City’s matching fund programs has little effect on their likelihood to donate.

## 2.1 The rise of conduit contributions

Any candidate, party, or interest group that raises or spends money with a political purpose is required to create a FEC-registered committee, which is subject to disclosure rules. In particular, whenever the total contributions of an individual to a committee since the beginning of the election cycle exceed \$200,<sup>10</sup> the committee must report contributions from this individual as *itemized*: it must provide detailed information to the FEC on the contributor (their full name, address, occupation, and employer) and their contributions (their date and amount). By contrast, contributions from individuals that have not (yet) reached the \$200 reporting threshold are said to be *unitemized*. Committees' financial summaries only report the total amount of unitemized contributions they received, aggregated across all contributors.

Most existing empirical research on individual political donors has been limited to itemized donations above that \$200 threshold. Our data allow us to overcome this issue because we have included and processed contributions to *conduits*, which are intermediary individuals or organizations that channel contributions to other committees. The largest conduit is ActBlue, an online fundraising platform created in 2004 that now dominates Democratic fundraising. As of 2020, 96% of all Democratic candidates used ActBlue.<sup>11</sup> In 2019, a similar (though for-profit) platform was launched on the Republican side: WinRed. Importantly, contributions made to conduits are “earmarked”: donors clearly designate the destination committee.<sup>12</sup> Relatedly, neither ActBlue nor WinRed is allowed to directly promote or favor any candidate.

We leverage two key features of conduits to build our dataset. First, like other committees, ActBlue and other conduits must register with the FEC and report the contributions they receive. But crucially, unlike other committees, conduits need to report *all* the contributions they collect on behalf of candidates, including those below \$200. Conduits report these contributions in their own financial accounts (and not those of the recipient), but they also indicate, in the “memo texts” or “receipt descriptions” attached to the contributions, the committee to which the contribution is earmarked. Through a thorough cleaning of these memos, explained in Appendix A.3.1, we are thus able to incorporate earmarked contributions to the set of itemized contributions flowing from an individual donor to a recipient committee.

Second, contributions made through ActBlue and other conduits have steadily increased over time and now account for the overwhelming majority of contributions, as shown in Figure 1a. Overall, more than 76.4% of the individual contributions in our data were made through ActBlue or WinRed, a fraction that reached 87.2% in the 2020 election cycle.<sup>13</sup> Since many of the contributions they channel are small, conduits account for a relatively low portion of contribution amounts, but that share has been increasing

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<sup>10</sup>Individual campaign donations are limited by law. For the 2019-2020 election cycle, donations to a candidate's local committee were capped at \$2,800 per election. Citizens could also contribute up to \$5,000 a year to Political Action Committees, up to \$10,000 to local party committees, up to \$35,500 to national political parties, and up to \$106,500 to other national party committees. Contributions to one's own political campaign or independent expenditures were unlimited.

<sup>11</sup>Appendix B provides more information on ActBlue, its adoption and the characteristics of candidates using it. Note that there are other conduits on the Democratic side, such as MoveOn.org and Swing Left, but they are much smaller.

<sup>12</sup>This distinguishes them from contributions made to PACs, which these PACs can discretionarily choose to allocate to candidates or other committees.

<sup>13</sup>This fraction is slightly underestimated because earmarked contributions in some committees' accounts cannot be directly attributed to a specific conduit (see Appendix A.3.1).



Table 1: Summary statistics on all observable contributions by individual donors by election cycle, 2006-2020

	Mean	St.Dev	P25	Median	P75	Obs
2006	292.1	972	25	60	250	5,220,840
2008	299.2	1,161	25	75	250	10,135,950
2010	237.7	1,915	22	50	154	8,014,443
2012	237.0	6,841	15	38	100	16,379,566
2014	149.9	7,765	8	25	50	16,592,807
2016	129.6	8,222	6	20	50	37,253,535
2018	85.7	8,476	5	12	26	51,068,028
2020	59.7	5,988	5	15	35	195,015,888

**Notes:** The table provides summary statistics for all observable contributions by individual donors included in our dataset, separately by two-year election cycle, from 2006 to 2020. Amounts are in current US dollars.

as well. Overall, ActBlue and WinRed accounted for 39.2% of the money contributed by individuals to committees in the 2020 cycle, up from 15.1% in 2018 and only 2.9% in 2012 (Figure 1b).

The growing number of contributions made through conduits – and in particular through ActBlue – together with the fact that conduits report all contributions implies that we now observe nearly all individual contributions, including the very small ones. We can compute the fraction of these visible contributions in terms of dollar amounts by using the aggregate data on itemized and unitemized contributions provided by committees.<sup>14</sup> In the 2020 election, the contributions to Democratic congressional candidates that we observe accounted for 95% of the contributions received by these candidates. Appendix Figure F.2 shows how this share has evolved over time, for different groups of committees. In addition, Appendix Figures F.3, F.4, and F.5 show that, as expected, the increase in the share of visible contributions is driven by the increasing share of contributions unitemized by committees that are earmarked and thus observable (92% in 2020 for Democratic congressional candidates, compared to 12% in 2008).

Table 1 displays summary statistics on all contributions by two-year election cycle. Two important patterns are visible. First, the number of visible contributions has increased dramatically over time. It was nearly ten times larger in the 2018 cycle than in 2006, and it increased again four-fold between 2018 and 2020. Second, the mean contribution amounts decreased during that period, from \$292 to \$60, and the median contribution amounts from \$60 to \$15, pointing to the growing importance of small contributions.<sup>15</sup>

## 2.2 Small donors

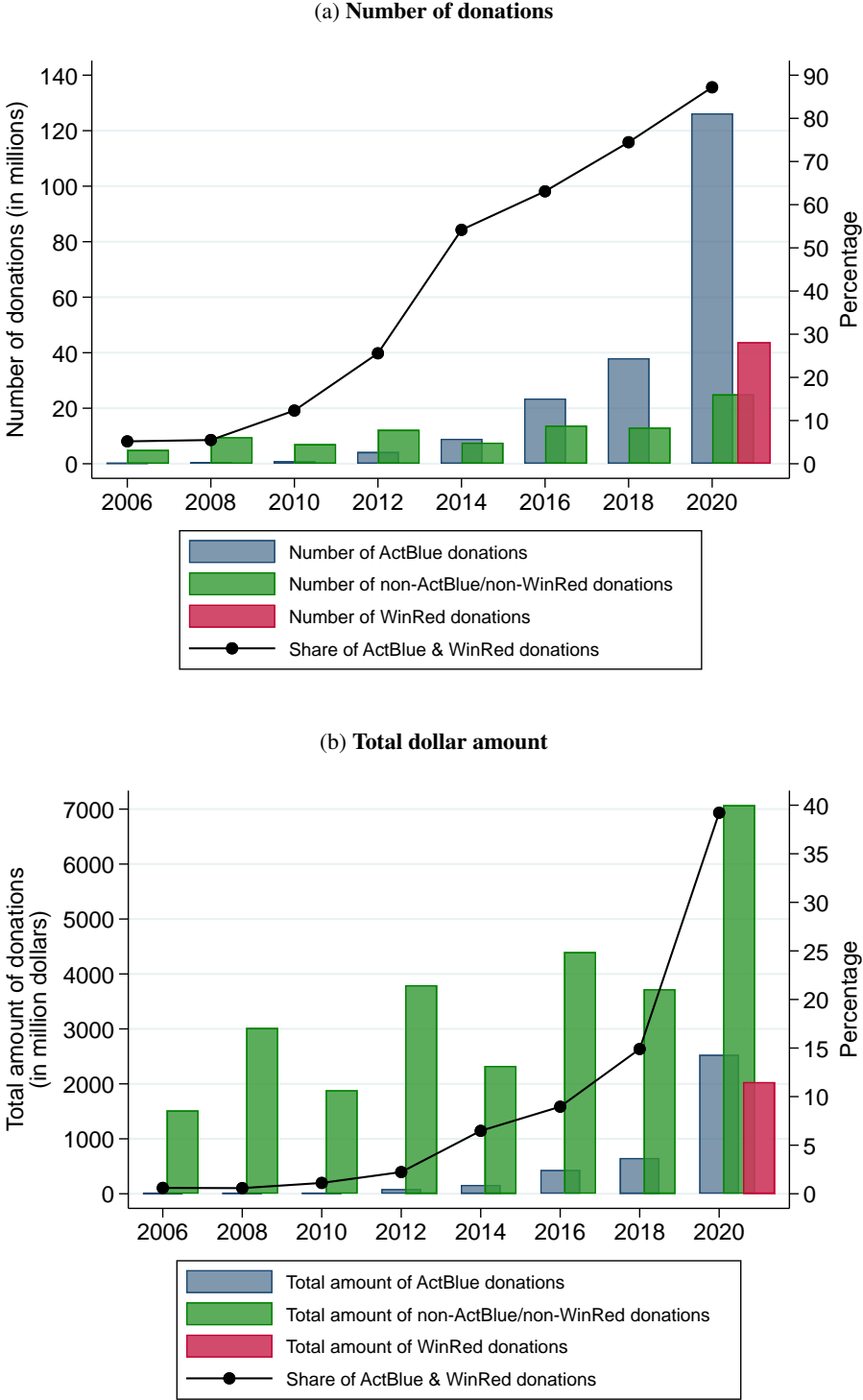
The fact that we observe the vast majority of individual contributions, including *small contributions*, enables us to identify *small donors*, the focus of our analysis.

While the FEC data assigns unique IDs to candidates, it does not do the same for individual contributors.

<sup>14</sup>The fraction in terms of the *number* of contributions is impossible to calculate as candidates do not report aggregates in terms of donation numbers.

<sup>15</sup>See Appendix Figure F.1 for the distribution of the amount of these contributions across all years.

Figure 1: Number and total dollar amounts of ActBlue and WinRed contributions by election cycle, 2006-2020



**Notes:** The figure represents the number (Figure 1a) and total amount (Figure 1b) of donations made by individual donors between 2006 and 2020, by two-year election cycle and depending on whether these donations were made through ActBlue, WinRed, or neither of the two.

To build unique donor IDs, we first clean four variables identifying donors: their first name, last name, street, and zip code. We then assume that the individuals associated with two distinct contributions are the same if they match exactly on three of these characteristics and if they obtain a high fuzzy match score on the fourth.<sup>16</sup> Overall, we identify a total of 30 million unique donors who donated at least once between 2006 and 2020. In the 2020 cycle, this number was 20 million, which corresponds to 8.5% of the adult U.S. citizen population.

Then, we define as “small donors” all individuals who contributed no more than \$200 to any single committee during a specific cycle. All other donors are called “large.”<sup>17</sup> The distinction that we draw between small and large donors is election-cycle-specific: a donor may be small in one cycle and large in the next one if the maximum amount they gave to a committee was larger than \$200 in the second cycle but not in the first. Overall, our data include 19.7 million large donor-cycles and 23.2 million small donor-cycles. About 4% of all unique individual donors appear in both categories.

There are two data-driven imperfections in our identification of small and large donors and their contributions. First, we miss a small subset of small donors, namely donors who do not use conduits and who contribute less than \$200 to all the candidates they contribute to directly. We do not know the exact number of these “hidden donors” (a terminology proposed by Alvarez et al., 2020), but we know that it is small, especially in recent years. Indeed, recall from Appendix Figure F.2 that, thanks to the growing use of conduits, we observe the vast majority of contributions in the last elections. Second, the (observed) total contributions of a large donor may be lower than the actual total, and even under \$200. This issue arises for donors who made their contributions in several installments, with the first ones being below \$200. We are not too concerned with these cases since (i) for the same reasons as for hidden donors, they only represent a small share of total contributions; and (ii), even though their computed total contribution is incorrect, they are correctly labeled as “large” and not “small” donors.

Figure 2 plots the number of small and large donors in each election cycle. The total number of donors increased tenfold between 2006 and 2020, from less than 2 million to nearly 20 million. Until 2018, this increase was almost entirely driven by a steady increase in the number of small donors. Between 2018 and 2020, both the number of small and large donors increased spectacularly.<sup>18</sup>

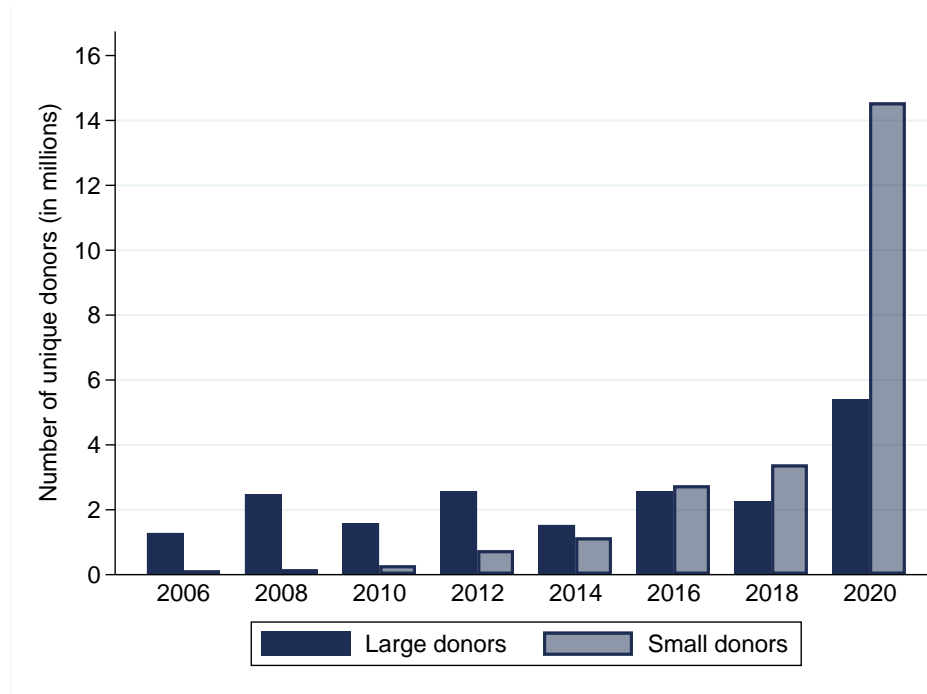
Appendix Table G.1 reports the number of contributors by type of race. Small donors account for 54% of the unique contributor-cycles to committees and for 58% of the unique contributor-cycles to candidates. They represent a higher share of donors for the presidential elections (61%) than for the House and Senate

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<sup>16</sup>For additional details on this procedure, see Appendix A.4.1.

<sup>17</sup>Appendix A.4.3 provides more details on how we determine whether an individual’s contribution to a committee is below \$200. Note that our definition of small donors implies that contributions by these donors are only a subset of all small (i.e., below \$200) contributions. Similarly, contributions by small donors are not equal to unitemized contributions, as appears clearly in Appendix Figures F.3 to F.5.

<sup>18</sup>The increase in the number of small donors across the time period reflects both an increase in the actual number of donors and in the ability to observe them, thanks to the rise in conduits. We can rule out the fact that the trend is driven *solely* by the latter (i.e., reporting), by looking at candidates’ reported aggregate unitemized contributions. Appendix Figure F.3, for instance, shows that contributions by small donors in 2020 is three to four times larger than the total unitemized contributions in 2006, which is the maximum number of contributions made by all small donors – observed or not – during this cycle.



**Notes:** The figure represents, for each election cycle between 2006 and 2020, the number of small and large unique donors. Small and large donors are defined in the text.

Figure 2: Total number of small and large unique contributors by election cycle, 2006-2020

elections (44% and 57%). They are also relatively more present among donors to primary elections (57%) than among donors to the general elections (51%).<sup>19</sup>

### 3 The characteristics of small and large donors

In this section, we use our novel dataset to provide stylized facts about the socio-demographic characteristics and contribution patterns of small and large donors. In Section 4 below, we build on this descriptive evidence to explore and compare the determinants of contributions made by these two types of donors.

**Gender and ethnicity distribution** We start by comparing the gender and ethnicity distribution of small donors, large donors, candidates, and the overall population. We use donors' first name to identify their gender and ethnicity: we infer donors' gender using U.S. Social Security data on the proportion of males and females for each name, and we infer their ethnicity using U.S. Census statistics on the distribution of ethnicities by surname and census blocks. Appendix A.4.2 provides more details on these procedures. Adult citizen population figures come from the American Community Survey.

The data yield two broad insights. First, small donors tend to be more representative of the overall

<sup>19</sup>To differentiate between the latter two, we use the receipt dates of contributions and states' official primary dates. More details in Appendix A.5.2.

population than large donors, as seen in Table 2. Women only account for 37.5% of large donors, as compared to 54.1% of small donors. 89.4% of large donors are White and only 3.9% Black, 3.6% Hispanic, and 3.0% Asian, against 11.5%, 14.5% and 5.1% respectively in the overall population. Among small donors, ethnic minorities are also underrepresented, but much less so: 6.7% of them are Black, 7.3% Hispanic, and 3.5% Asian. Overall, ethnic minorities account for a fraction of small donors that is two third larger than for large donors.

Second, the representativeness of small and large donors has improved in recent elections. The fraction of women has increased among both groups over time, as shown in Appendix Figure F.6. Similarly, Figure F.7 plots the evolution over time of the share of each ethnicity among small vs. large donors. Interestingly, the fraction of ethnic minorities among small donors has increased substantially since 2006. By contrast, their fraction among large donors was slightly *larger* than among small donors in 2006, but it has increased much less since then.

**Occupation and Income** We study contributors' socio-economic status by sorting their occupations into the Standard Occupation Classification (SOC) of the U.S. Bureau of Labor Statistics (BLS). Appendix A.4.2 details the cleaning and linking procedure. The share of donors with managerial or other high-education occupations ("High SOC"<sup>20</sup>) is much higher among large donors (55.9%) than in the overall adult population (17.4%). This is also true for small donors but to a lower extent (40.6%). This difference between small and large donors seem to be driven by a higher share of small donors who are inactive (retired, students, etc.) or unemployed,<sup>21</sup> rather than a higher share of low SOC occupations.

We also proxy the yearly wage of each employed donor by using BLS data on the median income of their SOC in the state where they live. Not surprisingly given the evidence on occupations, we find that the median wage of large donors is more than twice as large as the one of the overall adult population. The gap is less pronounced for small donors, but it is still notable with a median annual wage of \$75,458 compared to \$47,459 for the adult population.

**Home Value** We link contributors' residential addresses to the market value of the corresponding property (as assessed by local authorities) using the ZAsmt (ZTRAX) dataset provided by *Zillow, Inc* (more details in Appendix A.4.2). As these data have a large coverage only for recent years, we assign to each donor-cycle their 2020 cycle home value (i.e., depending on availability, the Dec. 2019 value, the Dec. 2020 value, or the average of the two). In Table 2, we show that the median value of the property in which a large donor lives is 49% higher than that of a small donor property, which is itself 51% higher than the median home value in the country.

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<sup>20</sup>"High SOC" covers SOC 11-000 (Management Occupations) to 29-0000 (Healthcare Practitioners and Technical Occupations), referred to by the BLS as "Management, Business, Science, and Arts Occupations."

<sup>21</sup>Unfortunately, the data do not allow to systematically distinguish between groups within the general "Inactive and Unemployed" category, in particular because a significant fraction of donors are labeled with an ambiguous "not employed."

Table 2: Summary statistics on donor characteristics, 2006-2020

	Large Donors	Small Donors	18+ Population
<i>Demographic characteristics</i>			
Female	0.375	0.541	0.513
White	0.894	0.823	0.612
Black	0.039	0.067	0.115
Hispanic	0.036	0.073	0.145
Asian	0.030	0.035	0.051
<i>Socio-economic characteristics</i>			
High SOC occupation	0.559	0.406	0.174
Low SOC occupation	0.115	0.137	0.386
Inactive & Unemployed	0.325	0.456	0.440
Median Annual Wage (2020 dollars)	98,356	75,458	47,459
Median 2020 Home Value (dollars)	399,370	267,141	176,838
<b>Observations</b>	19,678,096	23,199,524	1,936,960,000

**Notes:** The table gives summary statistics on the demographic characteristics of large donors, small donors, and the voting-age population. Time period is 2006-2020. An observation is a unique individual-cycle. Variables are discussed in more details in the text and Appendix A.4.2. Figures for the voting-age population demographics come from the U.S. Census Bureau ACS estimates. Fractions are calculated on the number of unique individual-cycle for which the corresponding variable is not missing. Wage variables are computed on the employed population and converted to constant 2020 dollars using the U.S. historical price index provided by the World Inequality Lab.

**Geographical location** We use donors' exact address to map the number of small and large donors as a share of the population in each county. The spatial distribution of small donors is reported in Figure 3, where we plot both the share of small donors in the overall population (in Figures (a), (c), (e), and (g), covering years 2008, 2012, 2016 and 2020, respectively<sup>22</sup>) and the share of small donors among all donors (Figures (b), (d), (f), and (h)).

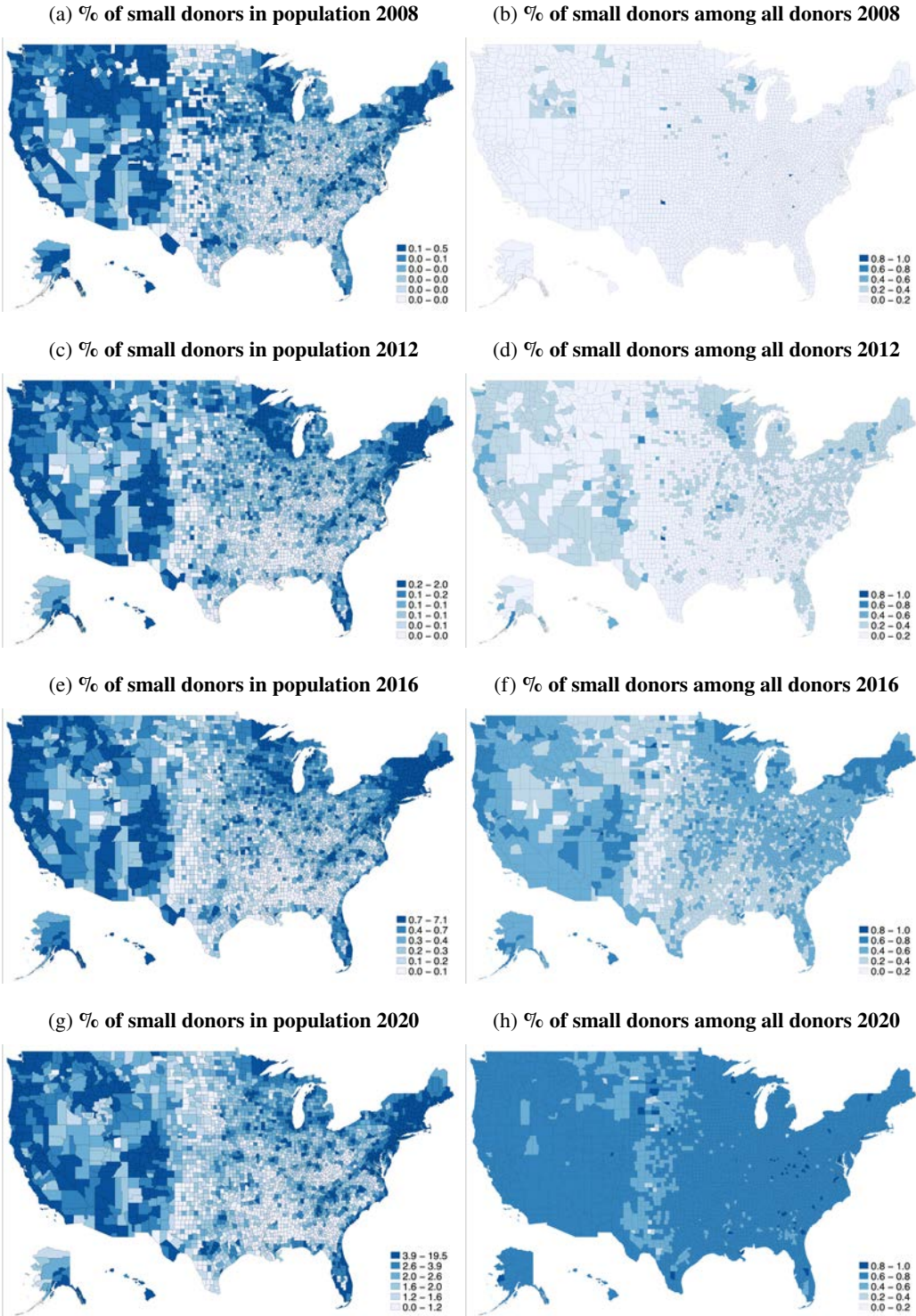
Small donors – like large ones (see Appendix Figure F.9) – are concentrated in the Northeast, on the coasts, and in large metropolitan areas such as Atlanta, Dallas-Fort Worth, Chicago, and Minneapolis. Despite the recent increase in the number of donors, contributing to electoral campaigns remains a rare behavior in large swaths of the U.S., including most of the Midwest and the South. These spatial differences are much larger than differences in standard indicators of voting behavior such as voter registration or turnout.

As a fraction of all donors, the growth of small donors started in the Northeast, the Great Lakes, and the West – but this could be due to the fact that for all cycles before 2020, we only observe small donors for the Democratic Party, and those regions are on average more favorable to Democrats. In the 2020 cycle, the share of small donors among all donors is remarkably homogeneous across the country.

**Timing of the contributions** Finally, we compare the timing of the contributions made by small and large donors. In Figure 4, we plot the share of total contributions by small and large donors (top and bottom

<sup>22</sup>See Appendix Figure F.8 for similar plots for years 2006, 2010, 2014 and 2018.

Figure 3: The geographic distribution of small donors in 2008, 2012, 2016, and 2020



**Notes:** The figures map the small donors living in each U.S. county during the 2008, 2012, 2016, and 2020 election cycles, as a share of the county population (left figures) or as share of all donors (small and large) in the county. For maps of the other election cycles, see Appendix Figure F.8.

graphs) on each day of the 2020 election cycle (previous cycles are shown in Appendix Figures F.10 to F.16). Three main patterns emerge. First, regular peaks reveal a cyclicity in donations by both small and large donors, but the frequencies differ. For large donors, we observe a monthly frequency which is probably driven by recurrent monthly donations. For small donors, we observe a quarterly frequency which might be driven by candidates' intensified fundraising effort before quarterly campaign finance reporting deadlines. Second, we observe a steady increase in contributions by large donors over time, in the two years preceding the election, while small donors maintain a relatively stable level of activity except for surges during the primary season (February and March) and in the last three months before the election. Finally, donor activity surges in the days following key events (e.g., the nomination of Kamala Harris as vice-presidential candidate and the Democratic Party Convention). These surges are substantially more pronounced for small donors. For instance, about 5.5% of all small donors' contributions during the 2020 election cycle were made within three days of the death of Justice Ruth Bader Ginsburgh. By contrast, this surge in activity only accounted for 1.7% of all contributions by large donors.

**Target committees** Finally, we investigate whether small and large donors give to different committees. In Appendix Figure F.17, we use one observation per committee and plot the relationship between the share of small donor contributions going to the committee (out of the total amounts contributed by small donors across all committees during that cycle) and the share of large donors going to that committee. If small and large donors were contributing in identical proportions to the same committees, all points would be located on the 45-degree line. We observe a positive correlation, indicating that small and large donors tend to donate to similar candidates, but the correlation is far from one (0.445). A large number of candidates are close to the horizontal axis, indicating that they receive nearly no contributions from small donors, even though some of these candidates attract a substantial fraction of large donors' contributions. Conversely, candidates located above the 45-degree line receive a larger share of small donor than large donor contributions.

Overall, differences in the sociodemographic characteristics of small and large donors, the timing of their contributions, and the candidates that they contribute to suggest that they may respond to different factors when deciding whether to give, to whom, and how much. The next section compares the determinants of contributions by these two types of donors.

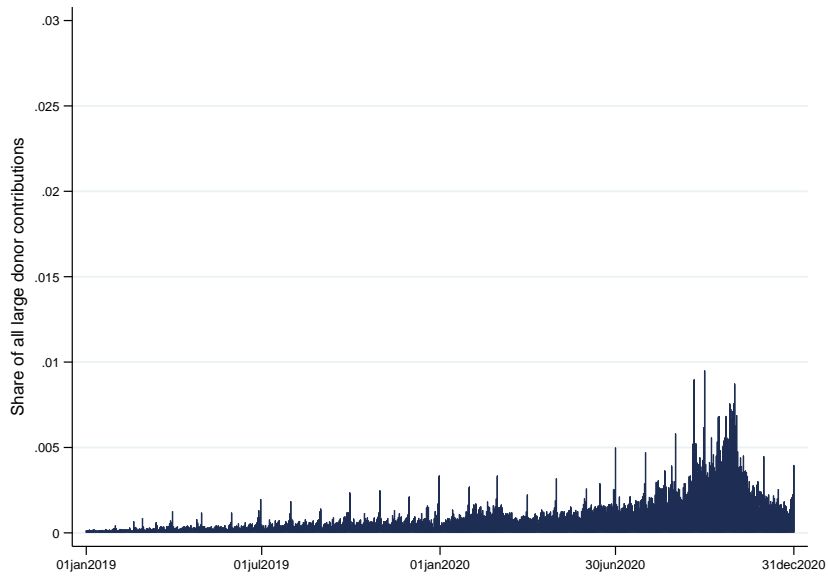
## 4 The determinants of campaign contributions

In this section, we study the determinants of campaign contributions and investigate whether they differ for small and large donors. We first provide a simple conceptual framework to guide and organize the empirical analysis and then turn to the empirical analysis itself.

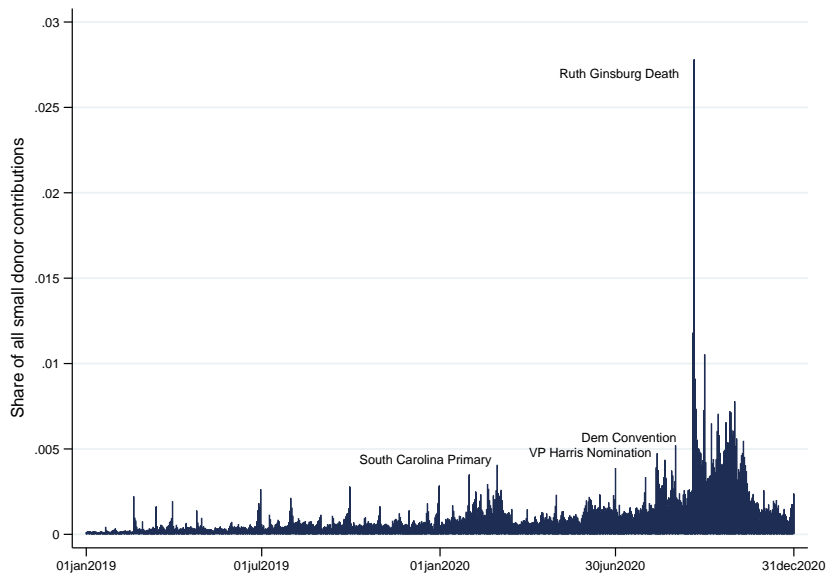


Figure 4: The timing of small and large donor contributions, 2020

(a) Large Donors



(b) Small Donors



**Notes:** The figures plot the number of small and large donor contributions on each day of the 2020 election cycle, as a share of the total contributions made over the cycle. Small and large donors are defined in the text.

## 4.1 Conceptual framework

Why do individuals contribute to electoral campaigns? As summarized by Gordon et al. (2007), the literature identifies two broad classes of motives underpinning this political behavior.<sup>23</sup>

Some scholars mainly view contributions as a strategic investment: donors may use their contributions to increase the victory chances of candidates with desirable characteristics such as ideology and competence (Poole and Romer, 1985; Wand, 2007), to buy policy favors such as (future) legislative votes or pressure on regulatory agencies (Aranson and Hinich, 1979; Baron, 1989; Snyder, 1990; Grossman and Helpman, 1994, 2001), or to obtain access to politicians once in office in order to shape legislation in the making (Langbein, 1986; Hall and Wayman, 1990). To facilitate the discussion, we will refer to contributions made to promote a candidate's electoral success as *electorally-motivated*, and to contributions made in expectation of a political favor, through access or legislative votes, as *favor-motivated*.

Other scholars view contributions mainly as consumption goods (e.g., Ansolabehere et al., 2003; Gimpel et al., 2008). Bonica (2014) (p. 370) argues that “[...] the vast majority of donors give amounts so diminutive that it is difficult to conceive of the contribution as an investment.” Such contributions are made for no other reason than the donor enjoying that form of participation in the political process. As stated by Ansolabehere et al. (2003) (p. 117-118): “individuals give because they are ideologically motivated, because they are excited by the politics of particular elections, because they are asked by their friends or colleagues and because they have the resources necessary to engage in this particular form of participation. In short, people give to politics because of the consumption value associated with politics, rather than because they receive direct private benefits.” We call these contributions *expressive*.

In Appendix C, we build on the extensive literature on the topic to develop a stylized and reduced-form model of contributions that encompasses these different motives.<sup>24</sup> The main purpose is to formalize and organize our discussion of the expected influence of observable factors – i.e. measurable characteristics of donors, candidates, and electoral races – over donors' choices. While few contribution patterns are unambiguously distinctive of one motive versus another, estimating their relative empirical importance will allow us to draw conclusions on the motives of small donors, and how they compare to those of large donors.

We organize the observable determinants of donors' choices into three broad categories: (i) “matching” factors, which capture the similarity in descriptive characteristics (e.g., gender and ethnicity) of candidates and donors, (ii) “political” factors, which capture the political characteristics of candidates (e.g., incumbent

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<sup>23</sup>There are various typologies of motives in the literature. For instance, Wilson (1995) considers three motives: the material motive (people contribute in order to gain material benefits), the purposive motive (people contribute in order to achieve ideological or policy goals), and the solidarity motive (people contribute in order to work and interact with like-minded and influential people). Gimpel et al. (2006) and Culberson et al. (2019) use a similar typology. Francia and Wilcox (2003) consider four categories of donors: *investors* who contribute to obtain personal gains or access, *ideologues* who contribute to promote particular issue agendas, *intimates* who are driven by the social aspects of giving, and *incidentals* whose patterns of contributions are inconsistent.

<sup>24</sup>Unfortunately, the literature does not offer any workhorse model predicting clear contribution patterns for donors driven by different motives. Yet, using arguments of various degrees of formality, the literature highlights the compatibility of different motives with different patterns of contributions. Our model aims to capture these insights.

or party leader status), and (iii) “electoral” factors, which capture the electoral characteristics of the race (e.g., how competitive it is).

The model’s general prediction with respect to the matching factors is that, independently of the underlying motive, contributions should increase if the donor shares descriptive characteristics with a candidate, and decrease if the donor shares descriptive characteristics with that candidate’s opponent. Donors might indeed expect higher returns, in terms of policies or favors, from the victory of candidates similar to themselves, and they may have a stronger taste for such candidates. Thus, *ceteris paribus*, donors can be expected to donate more and more often to candidates of the same ethnicity, gender, and ideology as theirs, and to candidates who are from the same state or district, and less and less often to candidates facing an opponent with such shared characteristics. In the literature, these effects are often referred to as “affinity effects.”

Various political characteristics of candidates may make them more or less appealing to donors. For instance, donors driven by the favor motive may find contributing to incumbents attractive since incumbents can provide favors right away, while challengers would only be able to do so in the future, and conditional on winning the election. Donors may also find incumbents more appealing if they are more prominent public figures. Specific types of incumbents (e.g., members of the majority party, party leaders, committee chairs, and members of particular committees) may be perceived as particularly influential and thus attract relatively more donations. On the other hand, donors dissatisfied with incumbents’ performance in office or with the current state of affairs more broadly may choose to punish them by supporting their opponents. Hence, it is unclear whether electoral and expressive motives primarily benefit incumbents or challengers.

The key electoral factors discussed in the literature include the competitiveness of the race and whether a candidate is expected to be among the top-two vote-getters. Electorally-motivated donors have little incentive to contribute to the campaign of candidates who are sure either to win or to lose. Instead, they will focus on races they deem sufficiently close and, when more than two candidates are present (as is the case in many primary elections), on the top two. Expressively-motivated contributions may also be larger in close races, if these races are more salient, and they may go primarily to top-two candidates as well, if, e.g., they have more notoriety. However, a distinguishing feature of expressive contributions is that, unlike electorally-motivated contributions, they may also flow to sure winners or sure losers. Like expressive voters (Pons and Tricaud, 2018), expressive donors may choose to support candidates irrespective of their chances of winning, for instance because they feel ideologically close to them. Finding no effect or only weak effects of closeness and of being a top-two candidate on contributions would thus be suggestive of the importance of the expressive motive relative to the electoral motive.<sup>25</sup> We note that contributions to sure winners may also be favor-motivated since these candidates are more likely to be in a position to fulfill the promised favor. Therefore, contributions to sure losers point to expressive motivations even more clearly.

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<sup>25</sup>We say “suggestive” because it is not entirely impossible to rationalize contributions to sure losers or winners with an electoral motive. First, donors may have inaccurate beliefs about the closeness of the race and who the top-two candidates will be. Second, electorally-motivated donors may knowingly contribute to sure losers in order to send a costly signal to other candidates and to pull their policy platforms toward the platform of the sure loser (see e.g., Piketty, 2000; Castanheira, 2003, for such a mechanism in the case of voting). Similarly, donors can contribute to sure winners in order to increase these candidates’ prominence.

Our model identifies another distinguishing feature of electorally-motivated contributions: the effect of matching and political factors should be modulated by the closeness of the race. Specifically, the magnitude of the effect of any of those factors – say the affinity effect of gender – should be larger in close races than in non-close ones. This is simply because, *ceteris paribus*, donors contribute more to candidates in close races. Hence, an increase in the incentives to contribute due to, say, a gender affinity effect, leads to a larger increase in contributions in close races. While such a modulation effect could also affect expressively-motivated contributions, it is not necessarily present for those contributions. Therefore, finding no or weak modulation effect of closeness would be suggestive of the importance of the expressive motive relative to the electoral motive.

Finally, our model predicts that, independently of the motive, contributions should increase in donors' income, since the opportunity cost of contributing is lower for richer individuals. We acknowledge that this brief discussion does not exhaust the set of individual characteristics of donors and candidates that may affect contribution patterns and magnitudes, including some that we may not observe. Our empirical analysis controls for all factors – whether observed or not – that are time invariant by including contributor fixed effects.

## 4.2 Empirical strategy

We now discuss how we investigate the effects of the above factors on the donation behavior of small and large donors.

**Sample of analysis** As described in Section 2, campaign committees which appear in the FEC data can be associated to candidates as well as parties, corporations, or issue-specific fundraising groups, which may support multiple candidates and span multiple districts. However, the electoral and demographic characteristics highlighted above are all attributes of unique candidates. In this section, we thus restrict our analysis to committees associated with a unique candidate and we drop non-candidate committees and joint committees associated with multiple candidates, which together account for 65.2% of all committees and 52% of the total amount of contributions. In order to have a clear definition for in- and out-district contributions, we further focus on congressional candidates as opposed to presidential candidates (the latter account for 3.9% of all committees and 18% of contributions). Finally, we drop the candidate-cycles that receive contributions but do not participate in the cycle's election, either because the candidate ran for Senate in a later cycle or because they withdrew from the race while still collecting money to repay their debts (11% of all recorded committees).

Section 2 also shows that small donations to congressional candidates channeled by ActBlue only started accounting for a sizable fraction of contributions in 2012. Hence, in order to ensure a sufficiently large and representative sample of small donors, this section focuses on the 2012 to 2020 election cycles. For the same reason, our main empirical analysis focuses on donations to *Democratic* candidates. As discussed below, we obtain qualitatively similar results for Republican candidates in 2020 (the first cycle

after WinRed was created).

We consider contributions to general and primary elections separately (based on the separation detailed in Appendix A.5.2), since donors' motives across these types of elections may differ. Overall, the sample used in this section includes 1,607,571 large and 3,498,876 small unique donors for general elections, and 1,620,572 large and 2,652,159 small unique donors for primary elections, whose characteristics are reported in Appendix Table G.3. Altogether, they amount to a total of 31.8 million pairs of contributor-candidates-election cycles, making a total of 57.8 million contributions for a total amount of 3.72 billion dollars.

**Empirical specification** Formally, we estimate the following model:

$$Y_{ic(s,r)t} = \alpha + \mathbf{X}'_{ct}\beta + \mathbf{V}'_{ict}\gamma + \mu_t + \delta_s + \eta_r + \zeta_i + \epsilon_{ic(s,r)t}, \quad (1)$$

where we use one observation per donor-candidate pair<sup>26</sup> and  $i$  indicates the donor,  $c$  the candidate,  $s$  the state,  $r$  the race, and  $t$  the election cycle. We cluster the standard errors two-way, at the candidate and contributor level.

We want to study the impact of various factors on both the extensive and the intensive margins of donations. Hence, for each donor who makes at least one contribution during the cycle, we identify all the candidates this donor did *not* make a contribution to, and set the dependent variable of these pairs to 0. Our outcome of interest,  $Y_{ic(s,r)t}$ , is then the inverse-hyperbolic sine (IHS) transformation of the total amount contributed by donor  $i$  to candidate  $c$  in election  $t$ . This transformation, which enables the interpretation of coefficients as percentage changes in the dependent variable, facilitates the comparison of coefficients for small and large donors, whose contribution amounts naturally differ.

We then consider the extensive and intensive margins separately.<sup>27</sup> To estimate the impact of our independent variables on the extensive margin only, i.e. the decision whether or not to contribute, we set  $Y_{ic(s,r)t}$  to 100 for each donor-candidate pair for which we observe at least one contribution during the cycle and to 0 otherwise. To estimate the impact of the different factors on the intensive margin, i.e. the size of the donations conditional on giving, we define  $Y_{ic(s,r)t}$  as the IHS transformation of the total amount contributed by donor  $i$  to candidate  $c$  in election  $t$ , but we drop all the donor-candidate pairs for which  $Y_{ic(s,r)t} = 0$ . The results from these specifications are presented in the Appendix, and briefly referred to in the main text.

Our main explanatory variables of interest are included in  $\mathbf{X}'_{ct}$  and  $\mathbf{V}'_{ict}$ .  $\mathbf{X}'_{ct}$  is a vector of seat and candidate characteristics.<sup>28</sup> It includes (i) an indicator variable for closeness, equal to one if the mean

<sup>26</sup>In the few cases where multiple committees are associated to the same candidate, we aggregate donors' contributions to the candidate across all committees.

<sup>27</sup>This is consistent with recommendations in the recent literature about the IHS transformation in cases with many zeroes (e.g., Mullahy and Norton (2024), and Chen and Roth (2024)). We also show the robustness of our findings to using a logarithmic transformation instead of the inverse-hyperbolic sine.

<sup>28</sup>For each characteristic, we create and control for an indicator equal to one when the characteristic is missing and set the corresponding variable to 0. This allows us to use the corresponding observations when we estimate the effects of other

Democratic winning margin over the last two elections for that seat was between -10% and 10% or if there was a change in the party of the winner in the last two elections; (ii) an indicator for safe Republican seat, equal to one if the mean Democratic winning margin over the last two elections for that seat was below -10% and there was no change in the party of the winner in the last two elections;<sup>29</sup> (iii) an indicator equal to one if the (Democratic) candidate is the incumbent; and (iv) two ideology indicators, equal to one if the candidate is in the bottom tercile of the common-space campaign finance scores of the sample of candidates (Bonica, 2014)<sup>30</sup> or in the middle tercile of that sample, respectively.<sup>31</sup> When analyzing primary elections, the vector  $\mathbf{X}'_{ct}$  also includes the closeness of the primary, an indicator equal to one if the mean margin of victory of the winner in the last two primary elections for that seat was between -10% and 10%, and an indicator for whether the candidate is one of the top-two vote-getters in the primary (based on the actual outcome of the primary).

The vector  $\mathbf{V}'_{ict}$  includes a set of indicators equal to one when the characteristics of the donors match with those of the candidates. These characteristics include gender, ethnicity, and geography. Geographic match is an indicator equal to one if the contributor resides in the candidate's congressional district. Appendix Table G.2 provides descriptive statistics on our main explanatory variables. For candidates, gender and ethnicity were coded by hand through internet searches, using biographies, pronouns, and pictures.

Our main specification controls for election cycle, state, House vs. Senate and, most importantly, contributor fixed effects (respectively  $\mu_t$ ,  $\delta_s$ ,  $\eta_r$ , and  $\zeta_i$ ). The inclusion of contributor fixed effects is only possible because the same donor has the option to donate to multiple candidates and because we built unique donor IDs, based on the rich information provided by the FEC (as described in Section 2). Due to the presence of these contributor fixed effects, we estimate the effects of district characteristics out of variations *within* the same contributor across races and over time.<sup>32</sup> For instance, the effect of race closeness is estimated by comparing the same donor's contributions to candidates in close races vs. candidates in safe Republican or Democratic districts. Our specification improves on the existing literature, which typically studies the determinants of campaign contributions by using total contributions to a candidate as the outcome (see, e.g., Gimpel et al., 2008; Thomsen and Swers, 2017; Culbertson et al., 2019; Grumbach and Sahn, 2020), preventing the inclusion of donor fixed effects or of controls for the characteristics of individual donors. The few studies that explore the behavior of individual donors mostly rely on survey data that are not amenable to the inclusion of donor fixed effects, either because they do

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characteristics. Appendix Table G.4 reports the share of observation with missing values for each characteristic.

<sup>29</sup>Below, we show that our results remain similar when using alternative definitions of close and non-close races.

<sup>30</sup>The campaign finance scores (thereafter CFscores) estimate candidates' ideal points and rank them on the left-right axis based on the contributions they receive. For our sample of candidates, CFscores span from -4.355 (Kevin Gaither, IL-15) to 1.381 (Frederick Lavergne, NJ-03). We cannot rely on the most widely used measure of candidates' ideology, the NOMINATE score, because it is not available for all candidates, only for politicians who have held office and cast votes in legislative assemblies (see e.g., McCarty et al., 2006).

<sup>31</sup>We treat ideology as a political factor instead of a matching factor because we only have a measure of ideology for candidates. This prevents us from exploring the effect of ideological "affinity" on the behavior of donors.

<sup>32</sup>The presence of these contributor fixed effects together with the fact that our measure of contributors' income and wealth (through their occupation or home value) is time invariant explains why we do not include income in our regression.

not include information about the candidates receiving the contributions (e.g., Albert and La Raja, 2020), or due to the limited number of donations made by any given individual donor in their data (e.g., Barber et al., 2017).

Despite our rich specification, we cannot rule out the possibility that our point estimates may be biased by the omission of factors varying at the seat-year level, such as the intensity of media coverage or the polarization of political discourse. To address this issue, we use an additional specification, where we control for all factors varying at the seat-year level by adding seat-year fixed effects to the aforementioned sets of fixed effects. In that specification, we have to drop race closeness and other district characteristics varying at the seat-year level, but we can still estimate the effect of matches between donors and candidates. Indeed, the ethnicity, gender, and geographical location of a candidate running in a specific district and election year will match with the ethnicity, gender, and location of some but not all donors.

Adding seat-year fixed effects to our regression rules out a larger set of confounding factors, but not all of them. For instance, to the extent that female donors and candidates have similar ideologies, point estimates on gender match may capture the effect of a match on that other dimension. While our results may not fully disentangle the causal impact of the variables included in our regressions from the effect of correlated factors, we see the comparison between the point estimates obtained for small and large donors as an important first step to assess if the behavior of one responds to the same determinants as the other.

### 4.3 Empirical results

This section is organized as follows. We first consider donors to Democratic candidates in general elections (Section 4.3.1) and in primary elections (Section 4.3.2), before turning to donors to Republican candidates (Section 4.3.3). In Section 4.4, we draw general conclusions about the behavior of small and large donors.

#### 4.3.1 Donors to Democratic candidates, general elections

**Candidate characteristics** Table 3 presents the results separately for large donors (columns (1) and (2)) and small donors (columns (3) and (4)).

Considering the specification including contributor fixed effects but excluding seat-year fixed effects, we first find a positive relationship between the closeness of a race and the amount contributed. For large donors, the effect is significant at the 5% level: large donors contribute 2.9% more to the campaign of candidates in close races than those running in safe Democratic constituencies, the omitted category (column (1)). For small donors, the coefficient is smaller (1.0%) and not significant (column (3)).<sup>33</sup> Overall, the effect of closeness on donations is modest, indicating that many donations go to safe races. In fact, about 60% of donations go to candidates in safe districts (see Appendix Table G.2). Finally, the

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<sup>33</sup>Appendix Figure F.18 shows that we obtain similar results when defining closeness based on different ex-ante vote margin thresholds. The results are also similar though more pronounced when using more endogenous measures of closeness: the ex-post margin (i.e., using the same-cycle election results) and the Cook Political Report rating of races (on the last week of August of the cycle). Note that the value, sign, and statistical significance of the other variables' coefficients are left unchanged by the choice of the closeness metric.

Table 3: The determinants of campaign donations: Extensive and intensive margins, Democratic congressional candidates, 2012-2020 general elections

	Large		Small	
	(1)	(2)	(3)	(4)
Close Seat	0.029** (0.011)		0.010 (0.008)	
Safe Republican Seat	0.010 (0.011)		0.007 (0.008)	
Incumbent Candidate	-0.014 (0.010)		-0.008 (0.006)	
Left-leaning Ideology	0.019 (0.012)		0.013 (0.009)	
Center-leaning Ideology	0.016** (0.005)		0.006 (0.004)	
In Same District	1.553*** (0.100)	1.541*** (0.091)	0.778*** (0.108)	0.738*** (0.081)
Same Gender	0.002* (0.001)	0.002** (0.001)	-0.000 (0.001)	0.001 (0.000)
Same Ethnicity	0.004 (0.004)	0.005*** (0.001)	0.002 (0.003)	0.002* (0.001)
Election Year FE	✓		✓	
State FE	✓		✓	
House/Senate FE	✓		✓	
Contributor FE	✓	✓	✓	✓
Seat-Year FE		✓		✓
Sample Mean	0.037	0.037	0.019	0.019
R-sq	0.088	0.150	0.078	0.167
R-sq (within)	0.046	0.046	0.034	0.031
Observations	1,002,754,913	1,002,754,913	1,697,218,745	1,697,218,745

**Notes:** Models are estimated using OLS. The time period is 2012-2020. An observation is a candidate-contributor pair at each election cycle. The sample includes, for each contributor who gave during a cycle, all the possible pairs of that cycle. The dependent variable is the inverse hyperbolic sine transformation of the total amount contributed by the donor to the candidate during the general election. Regressors are described in the text. For each characteristic, we create and control for an indicator equal to one when the characteristic is missing and set the corresponding variable to 0. Standard errors are shown in parentheses and two-way clustered at the seat and contributor levels. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

difference between the amounts contributed to sure winners and sure losers is small and not significant for either small or large donors.

The overall positive effect of closeness on the contributions of small and large donors hides a difference between the extensive and intensive margins. Appendix Tables G.5 and G.6 show that, at the extensive margin, donors are more likely to contribute to candidates in close races but, at the intensive margin, the effect of closeness is essentially null. One possible explanation is that the intensive margin effect reflects two balancing forces. First, closeness may increase the amount of “inframarginal” contributions, namely contributions to candidates to whom the donor makes some contribution whether the race is close or not. Second, donors only make certain “marginal” contributions if the race is sufficiently close, and they do not donate to the corresponding candidate otherwise, as shown in Appendix Table G.5. Such marginal contributions may be expected to be smaller than inframarginal contributions on average, since the donor’s underlying interest in the candidate is not sufficiently strong to ensure that a contribution takes place



regardless of the race's closeness. The fact that closeness increases the likelihood of such contributions should thus affect negatively its coefficient in the intensive-margin regression.

Second, we do not find any significant difference between donors' likelihood to contribute to incumbents and challengers in the general election. If anything, small and large donors contribute less to incumbents, but that effect is small and non-significant. This is because, in the general election, small and large donors are less likely to contribute to the campaign of incumbents (the extensive margin coefficients in Appendix Table G.5 are large and negative); but, when they give to incumbent candidates, they make substantially larger contributions (14.5% for small and 17.7% for large donors, as shown in Appendix Table G.6).

Third, we find that both small and large donors tend to contribute more to candidates in the left and center terciles of the ideology distribution of Democratic candidates than to those in the right tercile. Small (resp. large) donors give 0.6% (resp. 1.6%) more to candidates in the center and 1.3% (resp. 1.9%) more to candidates on the left, compared to candidates on the right. However, only the effect of center-leaning candidates for large donors is statistically significant (at the 5% level).

Fourth, we turn to the specification including also seat-year fixed effects (columns (2) and (4)) to estimate the effects of matches between candidate and donor characteristics, and find that both small and large donors contribute much more to candidates running in the district in which they live. The effect is even larger for large donors (367%) than small donors (109%), and significant at the 1% level in both cases. We find similarly large and significant results on the extensive and intensive margins.

Finally, donors tend to contribute more to the campaign of candidates who share other matching characteristics, but the effects are small. First, small donors contribute 0.1% more to candidates of the same gender, and the effect is not statistically significant. The corresponding point estimate for large donors is slightly larger (0.2%) and significant at the 5% level. Second, a match on ethnicity increases contributions from small and large donors by 0.2% and 0.5%, respectively, which is significant at the 10% and 1% levels. The extensive and intensive margins specifications generate similar results for the match on ethnicity and show that the effect of a match on gender is driven by the extensive margin. All these effects are of similar magnitudes when using a logarithmic transformation, as shown in Appendix Table G.7.

**Opponent's characteristics** Our conceptual framework predicts that characteristics of the candidate from the opposite party (e.g., their incumbency status and gender) could also have an influence on donors' behavior. To test this prediction, we consider an additional specification in which we include the characteristics of the Republican candidate as control variables.<sup>34</sup> Appendix Table G.8 presents the results. We see that the results from our baseline specification are robust to the inclusion of these additional control variables. Furthermore, we do not find strong support for the idea that the opponent's characteristics substantially influence the choice of donors.

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<sup>34</sup>We omit the match on ethnicity, as the general election sample includes too little variation in Republican candidates' race.

**Heterogeneity by closeness of the race** To test whether matching and political factors have a stronger effect on donor contributions in close races than in safe ones, we run the baseline specification on both types of races separately. Appendix Table G.9 presents the results. Comparing columns (2) and (3) for large donors, and (5) and (6) for small donors, we find that the effects of ideology, geography (shared district), and gender are larger in close races. Furthermore, in non-close races, donors contribute more to sure losers than to sure winners (1.5% and 2% more for small and large donors, respectively).

**Finer donor categories** So far, we have defined small and large donors based on the dichotomous rule specified in Section 2 (namely, whether their maximum contribution to any candidate is above or below \$200). We now check whether our results are robust to using finer categories. We rank donors depending on the maximum amount they contribute to a candidate during a cycle and estimate Equation (1) separately for each decile of this distribution. If the differences in the coefficients for small and large donors that we find in Table 3 embody real divergences depending on donors’ “size” instead of reflecting spurious correlations driven by an arbitrary threshold, we should expect the size of these coefficients to change smoothly as we move from the bottom to the top decile.

As shown in Figure 5, the effect of closeness on contributions increases with donors’ maximum contribution, consistent with the results based on the dichotomous distinction between small and large donors. The impact of closeness is statistically different from 0 only for donors in the sixth decile and above. Furthermore, we observe a similar but less pronounced pattern in terms of contributions to “sure winners.”

Turning to the role played by geography, Figure 5 shows that the smaller the donors, the more out-of-district contributions they make. While donors in all deciles tend to give more to candidates running in their district, the preference for local candidates is much weaker for smaller donors – particularly the very small ones.

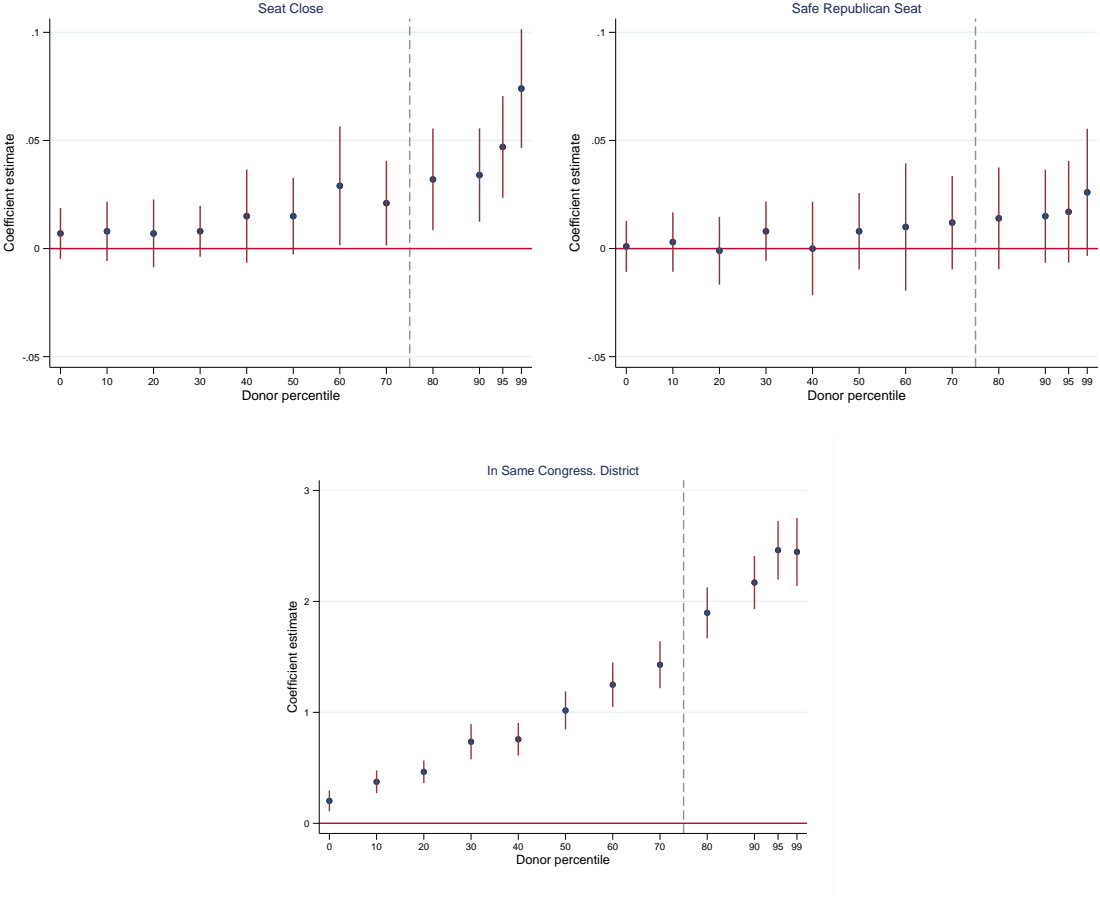
When it comes to the effect of ideology, Appendix Figure F.19 shows that only sufficiently large donors contribute more to the campaign of candidates in the center. In addition, the tendency to contribute more to candidates on the left follows an inverted U-shaped pattern: very small and large donors do not contribute more to those candidates, whereas other donors do.

Finally, Appendix Figure F.20 shows that the effects of matches between the ethnicity or the gender of donors and candidates follow donor size non-linearly: these effects are close to 0 in lower deciles and only increase with donors’ size at the very top of the donor distribution. The effect of incumbency shows a somewhat similar pattern (Figure F.21).

#### **4.3.2 Donors to Democratic candidates, primary elections**

Up to this point, we have focused on the donations received by the Democratic candidates in the general elections between 2012 and 2020. We now investigate whether the determinants of donors’ behavior are similar in primary elections over the same period. There are several important reasons to also explore

Figure 5: The effect of closeness and geography: Estimations by donors' deciles, Democratic congressional candidates, 2012-2020 general elections



**Notes:** The figure plots the values and 95% confidence intervals of the “Close seat,” “Safe Republican seat,” and “In Same District” coefficients obtained from estimating Equation (1) for different deciles of donors, based on the distribution of the maximum contributions made to any candidate during an election cycle. A donor making a maximum contribution of \$200, the threshold used to split our sample between small and large contributors in the regression tables, would be included in the 8th decile. The estimations include Election Year, State, House/Senate and Contributor fixed effects.

contribution patterns in primary elections. First, a large fraction of donors give to primary elections: 62% and 70% of the small and large donors, compared to 63% and 64% for the general elections. Second, donors' motives may differ between primary and general elections, even if they share similar descriptive characteristics (see Appendix Table G.3). For instance, donors may be reluctant to contribute to candidates in competitive primaries if they worry that going through a heated and heavily-disputed primary election may hurt the nominee's chances of victory in the general election (Fourinaies and Hall, 2020). Finally, primary elections allow us to investigate other types of behavior, such as the concentration on the top-two candidates, since they often involve three or more candidates of the same party (here, the Democratic Party).

We estimate a specification in the form of Equation (1) that includes two additional variables in the vector of seat/candidate characteristics  $\mathbf{X}'_{ct}$ : the closeness of the primary and whether the candidate is one of the top-two vote-getters in the primary. The results are shown in Appendix Table G.10, for our main outcome, and in Appendix Tables G.11 and G.12, for the extensive and intensive margins separately.

Overall, the patterns we observe are broadly consistent with the ones documented for the general elections. In particular, donors – especially large ones – contribute more to candidates in their district (an effect half the size as in general elections), to candidates in the left and center terciles of the ideological distribution, and to candidates with the same ethnicity and gender (the two latter effects being significant only for large donors).

There are also a few noteworthy differences. First, neither the closeness of the subsequent general election nor the closeness of the primary seem to affect the primary contributions of small and large donors. Second, in primary elections, both small and large donors contribute significantly more to incumbents (0.8% more for small donors, and 1.6% more for large donors). This is driven by the extensive margin: incumbents attract a larger number of donations during the primary elections, whereas challengers attract a larger number of donations during the general elections.

Finally, small and large donors contribute 0.7% and 1.5% more to one of the top-two primary candidates than to lower-ranked candidates. Interestingly, the corresponding effects are of opposite signs for the extensive and the intensive margins (see Appendix Tables G.11 and G.12). While small and large donors are more likely to give to one of the top-two primary candidates than to lower-ranked candidates by 0.398 and 0.285 percentage points, respectively (110% and 130% of the mean), they give *smaller* amounts by 9.2% and 12.5% to top-two candidates. The combination of positive effects on the extensive margin and negative effects on the intensive margin may be driven by marginal donors trying to avoid wasting their donations on sure losers by turning to top-two candidates, but giving them less money than to their favorite candidates because they like them less.<sup>35</sup>

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<sup>35</sup>These results should be interpreted with caution. Indeed, whether a candidate is one of the top-two vote-getters is determined ex post, based on the results of the primary. It may thus be endogenous to the amount of money raised by the candidates.

### 4.3.3 Donors to Republican candidates, general elections

We finally explore the factors affecting *Republican* donors by using contributions to Republican candidates during the 2020 election cycle as outcome in Equation (1).<sup>36</sup> We do not include earlier elections since WinRed was launched in 2019. The results are shown in Appendix Tables G.15, G.16, and G.17.

There are important commonalities with the results on contributions to Democratic candidates. First, similarly as on the Democratic side, Republican donors contribute much more to candidates in the same district, and the effect is larger for large than for small donors. Second, Republican donors contribute more to candidates in close races (and to sure winners) than to sure losers – and again, the effect is larger for large donors. Third, the overall effect of incumbency is muddled by opposite extensive and intensive margins effects. Finally, mirroring the effect on the Democratic side, large Republican donors contribute more to candidates on the right of the ideological distribution (though the coefficients are imprecisely estimated). For small Republican donors, there is no clear and significant effect of ideology.

The most notable differences with the Democratic side are as follows. First, small and large donors are neither more nor less likely to contribute to candidates of the same ethnicity. Second, small and large donors are *less* likely to contribute to candidates of the same gender than to candidates of a different gender. However, these last results, and more generally the differences in the magnitude of the coefficients between the Republican and the Democratic sides, should not be overplayed as they may be partly driven by specificities of the 2020 election cycle.

## 4.4 Discussion

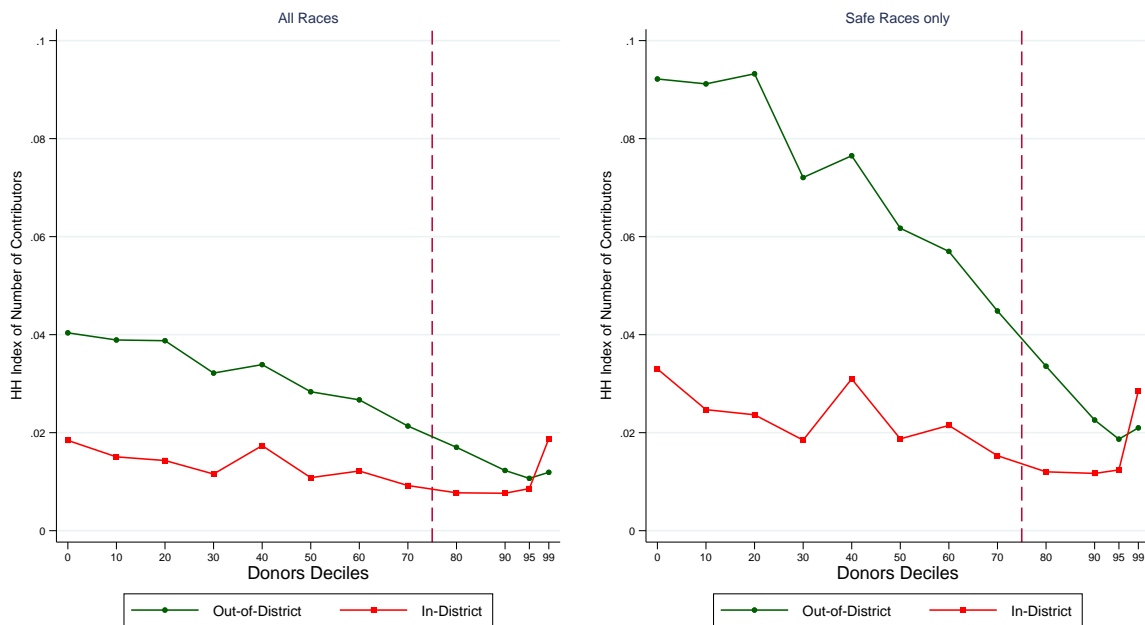
A central conclusion that stems from our results is that small donors are less influenced than large donors by (i) the closeness of the race, with a substantial share of small donors' contributions flowing to sure winners and sure losers, (ii) matching characteristics along the geographical, gender, and ethnic dimensions (with geography nonetheless playing an important role in shaping contributions of both small and large donors), and (iii) the ideological leaning of candidates.

As discussed in Section 4.1, contributions to candidates in non-competitive races are a feature distinguishing the expressive motive from the electoral motive. Our results thus suggest that small donors are less electorally-motivated than large donors. This finding has to be considered in light of the fact that a significant proportion of large donor contributions flow to sure losers (see Appendix Table G.2), suggesting that even among large donors, the electoral motive is not pervasive. Moreover, we also find that opponent characteristics do not affect the behavior of donors – another piece of evidence against the electoral motive according to our conceptual framework. By contrast, these patterns are compatible with the predictions of a model in which a substantial share of donors, both small and large, are expressively motivated, with that share being larger for small donors.

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<sup>36</sup>The descriptive statistics on electoral and matching characteristics for the sample of Republican donors and candidates in that election are shown and discussed in Appendix Table G.13, and the descriptive characteristics of the donors in this sample are shown in Appendix Table G.14.

Figure 6: The concentration of contributors: Herfindahl-Hirschman index of contributors, Democratic U.S. House candidates, 2012-2020 general elections



**Notes:** The figure plots the Herfindahl-Hirschman index of concentration of out-of-district and in-district contributors in all House races (left graph) and of all contributors in safe races (right graph), for different deciles of donors grouped based on the maximum total contributions they make to a candidate during an election cycle.

If a substantial share of small donors is indeed driven by expressive motives, then the next question is to identify the factors that determine their expressive utility of contributing. Here, our results about the relevance (or lack thereof) of matching factors are informative. First, matching factors such as ethnicity and gender are central to existing theories of expressive motives but our findings suggest that, in practice, they are not very relevant, and even less so for small than for large donors. Second, we also find that small donor contributions flow substantially more to out-of-district races than large donor contributions. This raises the question of which out-of-district races attract small donors' contributions the most. In Figure 6, we show that small donors tend to focus their out-of-district contributions on a relatively small pool of candidates. More precisely, within each donor decile, we calculate the “market share” (defined with respect to the number of donors) of each candidate and build an Herfindahl index that measures the spread of donors across candidates. Small donor donations appear more concentrated, particularly when we narrow the focus to safe races.<sup>37</sup>

A cursory examination of the races attracting a large share of small donations on the Democratic side reveals that many are nationally prominent contests, either because the Democratic candidate holds a leadership position within the party or one of its sub-groups (e.g., Elizabeth Warren in 2018, Nancy Pelosi

<sup>37</sup>Because Senate races are generally much larger than House races in terms of donation amounts, they are not included in the Figure. For results on Senate races only, see Appendix Figure F.22. In these races, small donors also show more concentration than large donors, but with no clear difference between out-of-district and in-district donations.

from 2014 to 2020, and Alexandria Ocasio-Cortez in 2020) or because the Republican candidate against whom they run is a nemesis of the Democratic Party (e.g., Andrew Janz in 2018, who sought to unseat Devin Nunes, or Amy McGrath, who challenged Mitch McConnell in 2020).

Altogether, the observed patterns in the data concerning small donors align with what could be termed a “salience-modulated” expressive motive, where the expressive value of a contribution varies with the salience of the race. Specifically, the presence of a candidate as either a “champion” or a “nemesis” of the donor’s party significantly increases the salience of the race, and hence the expressive value of a contribution. By contrast, the race being close or the candidates sharing the ethnicity or the gender of the potential donor do not appear to increase the salience of the race substantially. The presence of a salience-modulated expressive motive is consistent with the heightened responsiveness of small donors to political events that elevate the prominence of certain candidates or races (as seen in Section 2).

## **5 Political ads and small contributions**

The correlation between small and large contributions, on the one hand, and the determinants investigated in Section 4, on the other, can be driven by the combination of donors’ own motives (push factors) and differences in campaign outreach activities across races and candidates (pull factors). For instance, the fact that people tend to donate more in close races may reveal that they have a stronger intrinsic desire to contribute when the stakes are higher, but it could also ensue from them receiving more information from candidates and more requests to donate in such races. Of course, pull factors can also contribute to explain the relationship between race closeness or candidate characteristics and other forms of political behavior, including turnout. In fact, there is comprehensive evidence that electoral campaigns have the potential to mobilize voters (e.g., Gerber and Green, 2000, 2019; Braconnier et al., 2017) and that their intensity varies with race closeness (Cagé and Dewitte, 2021), among other dimensions.

To investigate the effect of pull factors on contributions, we look at candidates’ political ads, both on TV and social media. In the U.S., political advertising accounts for a large fraction of all candidate expenses (55% in 2020, according to Opensecrets.org). The vast majority of these advertising expenditures still go to TV ads, but expenditures on digital ads have substantially increased in the last elections. Ridout et al. (2021) report that 74% of 2020 presidential advertising spending went to TV ads, against 24% for digital and 2% for radio. Ashworth and Clinton (2007), Krasno and Green (2008), and Gerber et al. (2011) find that the effects of political ads on voter turnout and vote choice are short-lived at best, but recent work by Spenkuch and Toniatti (2018) uncovers a substantial impact on vote shares, which the authors attribute to the stronger mobilization of supporters of the candidate disseminating more ads. If ads sent by candidates motivate their supporters to vote, then they may also increase political engagement on another margin: contributing money to the campaign.

We first extend Spenkuch and Toniatti (2018)’s design to estimate the effects of TV ads on small and large contributions and, so, disentangle this important pull factor from correlated push factors. We then

use an event study to estimate the effect of social media ads. In addition to helping us understand why small and large donors contribute to campaigns, estimating the dollar returns of money spent by candidates on political ads will reveal whether, beyond mobilizing voters, this form of campaign communication can generate financial returns and partly cover its own cost.<sup>38</sup>

## 5.1 Effects of TV ads

**Empirical strategy** The identification strategy we use to estimate the effects of TV ads is borrowed from Spenkuch and Toniatti (2018). It exploits variation in the number of TV ads across the borders of neighboring counties, which is plausibly exogenous due to media markets regulation. The FCC grants companies local broadcast rights for media markets (referred to as “Designated Market Areas”, or DMA) encompassing multiple counties, so candidates determine the volume of TV ads at the level of the media market, based on the characteristics of markets’ overall population and on other aggregate market-level factors. Each border county should only have a small influence on these factors and, thus, on the volume of ads its population is exposed to, since it only accounts for a small share of the population living in any market (5% on average). Therefore, differences in TV ads across neighboring counties that are located in the same state or in the same district but belong to different media markets can be expected to be orthogonal to the characteristics of these specific counties. Spenkuch and Toniatti (2018) show that this is indeed the case for a large number of observables.

Formally, we estimate the effects of TV political ads by restricting the sample to pairs of neighboring counties in different media markets, and using specifications of the following form:

$$Y_{c(p)t} = \phi \text{Ads}_{ct} + \mu_{pt} + \mathbf{X}'_{ct} \gamma + \psi \text{OtherAds}_{ct} + \alpha_c + \epsilon_{ct}, \quad (2)$$

where  $Y_{c(p)t}$  is the outcome of interest for a specific race in county  $c$  (in county-pair  $p$ ) in election-year  $t$ ,  $\text{Ads}_{ct}$  is the number of TV ads for that race broadcasted in the county’s media market,  $\mu_{pt}$  is a year-specific county-pair fixed effect, equal to one for the two counties sharing a common border,  $\mathbf{X}'_{ct}$  is a vector of county-level time-varying controls,  $\text{OtherAds}_{ct}$  is the number of ads aired in the same media market for all other races,<sup>39</sup> and  $\alpha_c$  is a county fixed effect.<sup>40</sup> Some counties have multiple neighboring counties located in a different media market but in the same state. We follow Spenkuch and Toniatti (2018) and include these counties multiple times in the sample. The coefficient of interest,  $\phi$ , is identified based on deviations from the mean in one county relative to deviations from the respective mean in the neighboring

<sup>38</sup>Yildirim et al. (2024) also use Spenkuch and Toniatti (2018)’s design to measure the impact of TV ads on donations, but with a different focus: investigating the substitutability between political and charitable giving.

<sup>39</sup>We use a unique variable counting all other ads. The definition of OtherAds depends on the type of race we consider. It includes House and Senate ads when we focus on the presidential elections, presidential and House ads when we look at Senate races, etc. Ads related to gubernatorial and down-ballot races (such as state legislatures, supreme courts, or ballot initiatives) are always included in OtherAds. While we do not estimate the effects on outcomes in these races, these ads could still plausibly affect contributions to other races.

<sup>40</sup>In regressions focusing on a single year,  $\alpha_c$  is replaced by the lagged value of the dependent variable in the previous election of the same type.



county. Like in Section 4, we focus on the election cycles since 2012 (because small donations made through conduits only became an important phenomenon after that year) and consider separately primary and general elections.

When we estimate effects in congressional races, we pool House and Senate races in the same regression in order to maximize statistical power. Specifically, we include one observation per border-county per election year per type of race, and we replace the county fixed effects and county-pair-by-year fixed effects with two sets of fixed effects (one for House races and the second for Senate). For House races, we restrict the sample to border-counties located not only in the same state but also in the same constituency. Since counties can span multiple constituencies, we require that at least 90% of the surface area of each of the border-counties be included in the constituency so that the race relevant to the county is defined unambiguously. For Senate races, the sample is identical as for the presidential elections, since Senate constituencies are state-wide.

The number of TV political ads aired in each county is measured based on data from the Wesleyan Media and Wisconsin Advertising Projects. It includes ads sponsored by candidates themselves, ads sponsored by their national and local parties, and ads by PACs and other interest groups which are broadcasted to support a specific candidate and are therefore categorized as pro-Democratic or pro-Republican in the data (by difference with ads supporting a cause, for instance). Some media markets overlap multiple congressional districts. For congressional elections, we thus distinguish between ads made by candidates of the county's congressional district(s) and those made by congressional candidates of other districts in the same DMA. We focus on the effects of the first type of ads ("local ads") in some specifications and measure the effects of both types of ads taken together ("all DMA ads") in others.<sup>41</sup> Appendix Table G.18 provides summary statistics on these different types of ads. In our sample of border county pairs, people receive 3,300 Democratic general election ads supporting presidential candidates, 3,600 ads for Senate candidates, and 1,800 for House candidates per election cycle between 2012 and 2020, on average. Focusing on ads for local races, the numbers of ads supporting Senate and House candidates are 2,900 and 300, respectively. Finally, we cluster standard errors at the media market level.

**Effects on turnout and vote shares** We first replicate the results of Spenkuch and Toniatti (2018). We summarize the results of this replication briefly here and provide additional details on the data and empirical specifications in Appendix D. As shown in Appendix Table G.19, Panel (a), consistently with Spenkuch and Toniatti (2018), we do not find any significant effect of TV ads on aggregate turnout in the 2012, 2016, and 2020 presidential elections (columns 1 to 4).

Yet, the difference between the number of Democratic and Republican ads increases the difference between the vote share of the Democratic and Republican candidates (columns 5 to 8). Averaged over 2012, 2016, and 2020, an increase in the number of Democratic ads by 1,000, relative to Republican

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<sup>41</sup>When we focus on local ads, the  $OtherAds_{ct}$  variable includes the ads made by congressional candidates of other districts in the same DMA. In addition, in rare cases, candidates advertise in DMAs not overlapping with their congressional districts. We include these ads in  $OtherAds_{ct}$  as well.

candidates, increases the difference in vote shares by 0.06 percentage points. However, this effect is only statistically significant for 2012.<sup>42</sup>

While Spenkuch and Toniatti (2018) focus on presidential elections, we also measure the effects of TV ads on the results of congressional races from 2012 to 2020. Once again, as shown in Appendix Table G.19, Panel (b), we do not measure any significant impact on voter turnout averaged across all years, despite positive effects on participation in 2014 and 2018 (columns 1 to 6). However, the effects on vote shares are large and significant (columns 7 to 12). An increase by 1,000 in the difference between the number of local ads aired by Democratic and Republican candidates increases the difference between the Democratic and Republican vote shares by 0.55 percentage points on average, in the five Senatorial and House elections between 2012 and 2020.

Put together, the estimates in Panels (a) and (b) of Appendix Table G.19 corroborate Sides et al. (2021)'s conclusion that TV ads have larger effects on electoral outcomes in down-ballot elections than in presidential ones. We now turn to our main outcome of interest and ask whether TV ads affect campaign contributions in House and Senate elections. We also measure the effects of TV ads separately on small and large donors.

**Effects on contributions** Since our data on small contributions prior to 2020 primarily come from ActBlue, our analysis focuses on contributions to the Democrats, and our main independent variable is the number of Democratic ads. The number of Republican ads is included as a separate regressor to test the hypothesis that own advertising by the Democrats increases the contributions they receive, while spots by their Republican rivals have the opposite effect.<sup>43</sup> The inclusion of Democratic and Republican ads as distinct independent variables makes this specification slightly different from the specification used to measure effects on vote shares which regressed the *difference* between the Democratic and Republican vote shares on the *difference* between the number of Democrat and Republican ads, following Spenkuch and Toniatti (2018).

We measure the effects of TV ads on two distinct outcomes related to donors' behavior: the number of contributors per 10,000 inhabitants and the total amount of contributions per 10,000 inhabitants. The first outcome captures effects on the extensive margin, while the second reflects effects both on the extensive and on the intensive margins.<sup>44</sup> As in Section 4, we only take contributions to candidates into account and exclude donations to committees which cannot be unambiguously linked to a single candidate. Echoing our distinction between "local ads" and "all DMA ads," we measure effects both on "local" and "all" contributors (contributions). The former are defined as contributors (contributions)

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<sup>42</sup>The point estimates for the effects on turnout and vote shares in 2012, which is the one year in common with Spenkuch and Toniatti (2018), are nearly exactly identical as in their paper, as should be expected.

<sup>43</sup>Similarly, we control separately for the number of Democratic ads and the number of Republican ads aired in the same media market for all other races.

<sup>44</sup>We do not use the inverse hyperbolic sine transformation of these variables, unlike in Section 4, because the effects would be sensitive to scaling and alternative scalings are equally sensible. For instance, we would obtain slightly different results by dividing our outcomes by 1,000 inhabitants rather than 10,000 inhabitants.

Table 4: The effects of TV ads on campaign contributions: Democratic congressional candidates, 2012-2020 general elections

	Contributors			Contributions		
	(1) All	(2) Large	(3) Small	(4) All	(5) Large	(6) Small
Democratic Ads (Total number, in 1000s)	0.32*** (0.10)	0.13*** (0.05)	0.18*** (0.06)	38.73 (33.47)	27.87 (32.49)	10.86*** (3.78)
Republican Ads	-0.14 (0.13)	-0.07 (0.06)	-0.07 (0.08)	-27.24 (40.07)	-22.33 (37.99)	-4.91 (5.32)
County-Pair x Year x Office FE	✓	✓	✓	✓	✓	✓
County x Office FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
R-sq (within)	0.027	0.013	0.031	0.005	0.004	0.027
Observations	31,162	31,162	31,162	31,162	31,162	31,162
Clusters	204	204	204	204	204	204
Mean DepVar	7.66	3.43	4.23	1,363.14	1,191.04	172.10

**Notes:** Models are estimated using OLS. An observation is a county-cycle-office. We combine House and Senate races for the 2012 to 2020 elections and consider the general elections. The sample includes all county-pairs with border-counties located in the same congressional district, for House races, and all county-pairs in which a Senate race took place. The dependent variable considers all contributions to Democratic candidates. In columns (1) to (3), it is the number of unique contributors per 10,000 inhabitants; in columns (4) to (6), it is the total dollar amount of contributions per 10,000 inhabitants. Controls include all other political ads aired in the county (for senatorial elections, presidential, House, non-DMA Senate, governor, and other down-ballot races' ads; and for House elections, presidential, Senate, non-DMA House, governor, and other down-ballot races' ads), measured in the same way as the main dependent variable and for both Democratic and Republican candidates, together with a set of socio-demographic characteristics at the county level (total population, share of high-school dropouts, share of college graduates, share of ethnic minority population, share of foreign-born population, median household income, share of population below the poverty line, and employment-to-population ratio). Standard errors are shown in parentheses and clustered at the media market level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

for the candidate running in the district(s) corresponding to the county of the contributor but the latter also include contributors (contributions) to Democratic candidates for the same chamber in other districts overlapping with the county's DMA. Appendix Table G.18 provides summary statistics on these different totals of contributors and contributions.

Table 4 shows the effects of TV ads in congressional races. While people can only vote for candidates in their local district, they can donate to races in other constituencies. Local ads may actually prompt contributions to out-of-district and out-of-state races because they also inform people about the overall election. Conversely, TV ads for neighboring constituencies covered by the same media market may increase the overall salience of the elections and thus affect people's contributions to their local race. Therefore, unlike in Appendix Table G.19, Panel (b), our main specification measures the effects of TV ads aired in the county for *all* House and Senate races covered by the DMA on contributions to *all* races by the residents of the county. Democratic and Republican ads have effects of opposite signs on the number of people contributing to Democratic candidates (column 1).<sup>45</sup> An increase in Democratic ads by 1,000 (corresponding to 27% of the mean number of Senate ads and 56% of the mean number of House ads)

<sup>45</sup>Interestingly, Spenkuch and Toniatti (2018) also obtain effects of opposite signs when they regress the Democratic vote share defined relative to the voting age population on Democratic ads as well as Republican ads instead of using the difference between Democratic and Republican ads as the main regressor.

increases the number of contributors per 10,000 adult inhabitants by 0.32, which is significant at the 1% level and corresponds to 4.2% of the mean (column 1). The effects are also significant at the 1% level and of similar magnitude for large and small donors (columns 2 and 3): 0.13 and 0.18 (3.8% and 4.3% of the mean). The effects of Republican ads on the number of contributors to Democratic candidates are negative but smaller (1.8% of the mean overall) and not significant. Democratic ads further increase total contribution amounts by 38.7 dollars per 10,000 adult inhabitants (column 4), which corresponds to 2.8% of the mean, but the effect is not statistically significant. In fact, the effect is only statistically significant (at the 1% level) for small donor contributions (column 6), and is much larger as a share of the mean (6.3%) than for large donor contributions (2.3%, column 5). Similarly as for the effects on contributors, Republican ads have smaller, non-significant negative effects on contribution amounts. In sum, TV ads affect both the extensive margin (the number of contributors) and the intensive margin (the amount of money contributed by donors), and the magnitude of the effects is larger for small than for large donors.

Using the point estimates in Table 4, we can estimate the dollar returns of money spent by candidates on TV ads in terms of contributions. The mean number of Democratic ads in a media market during the general election is 2,001 on average per cycle between 2012 and 2020. Taking the effect of an additional 1,000 ads on contributions to congressional races (38.7 dollars per 10,000 adult inhabitants) at face value, we infer that TV ads increase contributions by about 77.4 ( $38.7 \times 2.0$ ) dollars per 10,000 adult inhabitants. We multiply this number by the average U.S. adult population per cycle over that period expressed in 10,000s (262,382.4) and obtain that TV ads triggered approximately 20.3 million dollars of contributions. This number is far below the total estimated cost of Democratic TV ads (455 million), indicating that the financial returns of TV ads are far from sufficient for these ads to fund themselves (bearing in mind, of course, that fundraising is not the sole purpose of these advertisements). We note that this back-of-the-envelope calculation relies on two important assumptions: first, that the effects of TV ads are linear, so that the marginal effect of an additional 1,000 ads estimated using our design is equal to the average effect; and second, that effects of TV ads are similar in border-counties and in other counties.

We complement the estimates of political TV ad effects in three ways.

First, Appendix Table G.20 shows the effects of TV ads aired during the primaries. Compared to the effects shown in Table 4, the effect of Democratic ads on the number of contributors is also positive (0.15, or 2.7% of the mean) and significant overall, but it is smaller and not statistically significant for larger donors. The effects on contribution amounts are smaller than during the general elections: an increase in Democratic ads by 1,000 increases contribution amounts during the primaries by 0.5% of the mean, with larger effects on small donors than large donors again (3.7% vs. 0.2%).

Second, Appendix Table G.21 checks the robustness of our results to an alternative specification, restricting the definition of the dependent and independent variables to the local race instead of considering the effects of TV ads aired for all congressional races in the DMA on contributions to all congressional races.<sup>46</sup> The results are qualitatively similar as in Table 4 and, if anything, more pronounced, suggesting

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<sup>46</sup>In a few states and years (five in total in the sample), two Senate races took place at the same time. In these cases, TV ads

that the connection between local ads and local contributions is slightly stronger.

Third, Appendix Table G.22 shows the effects of TV ads on contributions to *Republican candidates* during the 2020 election-cycle, after WinRed had been launched, facilitating donations on the Republican side. These effects are less precisely estimated and generally not statistically significant but we note that an increase in Republican ads by 1,000 during the primary elections increases the number of small contributors per 10,000 adult inhabitants by 0.05, which is significant at the 1% level and corresponds to 3.2% of the mean (Panel (b), column 3).

We finally investigate the extent to which the effects of TV ads can contribute to explain the overall influence of district-level factors studied in Section 4, particularly race closeness. TV ads could help explain the fact that people tend to donate more in close races if candidates sent more ads in close races or if these ads had a larger effect. We find some support for the first hypothesis in Appendix Table G.23: the number of local Democratic and Republican ads is larger in close races and for safe Republican seats, even though these correlations weaken once we control for district fixed effects. Furthermore, the effects of TV ads on contributions are slightly larger in close races, but this difference is not statistically significant (Appendix Table G.24).

## 5.2 Effects of social media ads

**Empirical strategy** We now turn to the effects of social media ads. While these account for a smaller fraction of campaign budgets than TV ads, they can be better targeted and they often immediately direct donors to online conduits. We collected data on political and issue ads posted on Meta’s social media platforms (Facebook and Instagram), using the company’s API, as in Fowler et al. (2021). Starting in May 2018, this dataset provides information on the exact timing of each ad, its full text, the estimated number of impressions in each state,<sup>47</sup> and the name of the page that posted it, which we match to the corresponding congressional candidate. We provide more information on the data collection and cleaning in Appendix E. We study ads placed in the 2020 election – i.e., from 1 January 2019 to 31 December 2020 – because it is the only election cycle for which ads are available for the full cycle. We focus on ads sent by Democratic candidates, for consistency with our other analyses, and later extend the analysis to Republicans.

A candidate can post multiple ads on the same day, targeting different areas or different groups. Overall, our sample includes a total of 383,597 ads. As shown in Appendix Figure F.23, ads are spread over the whole election cycle, and their number increases over time. The figure counts ads on their first day of publication, but ads can run for multiple days, with a medium length of nine days.

We exploit the detailed information we have on Meta ads’ timing to estimate their effect on small and large donors using an event study. The ads often target a single state or a handful of states. Therefore, we define events and measure outcomes at the candidate-state-week level. We compute the total number of

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and the contribution amounts are summed over the two races, and the number of contributors counts all people who donated to at least one of the two races.

<sup>47</sup>Specifically, Meta provides a bracket of the total number of impressions (e.g., 1-999) as well as the share of impressions per state. We compute the number of impressions in a state by multiplying the mean of the bracket with the state share.

ads and impressions for each candidate, state, and week and define an event (or “ad-week”) as a week in which a candidate launched at least one ad in the state.<sup>48</sup> We exclude new advertising weeks which are separated by less than three weeks or which are less than three weeks from the incoming election, to be able to estimate effects up to three weeks after.

Overall, our estimation includes a total of 21,284 events across general and primary elections for 402 candidates: 2,468 events for general elections (corresponding to 4% of Democratic social media ads in this period) and 18,816 for primary elections (11%). In some specifications, we relax our sample construction and exclude new advertising weeks which are separated by less than two weeks or one week (rather than three). Under these alternative sample definitions, we can check pre-trends and measure effects only over shorter periods, but the fraction of Democratic social media ads that we keep in the general elections increases to 8% or 16%, respectively (against 4% in the baseline sample).

Our regression sample is restricted to candidate-states with one event or more. For each event, we use one observation per week of the election period. Thus, if there are multiple events for a candidate-state, the same set of weeks is included multiple times. Summary statistics on these events are shown in Appendix Table G.25. There are on average 2.82 and 3.28 impressions per 10,000 adult inhabitants in the Senate and House elections, respectively (Panel (a)). During the primaries, the number of impressions is larger for Senate ads but slightly lower for House ads (Panel (b)).

Our main specification is as follows:

$$Y_{iw} = \mu_{4-} + \sum_{k=-3}^{-2} \mu_k + \sum_{k=0}^3 \mu_k + \mu_{4+} + \theta_w + \gamma_i + \epsilon_{iw}, \quad (3)$$

where  $Y_{iw}$  is the outcome for candidate-state-event  $i$  in week  $w$ ,  $\mu_k$  ( $-3 \leq k \leq 3$ ) are indicator variables for the number of weeks relative to the first day of the ad,  $\mu_{4-}$  and  $\mu_{4+}$  are indicator variables equal to 1 for observations corresponding to four weeks or more before or after the event, respectively,  $\gamma_i$  are event fixed effects, and  $\theta_w$  are week-state fixed effects. We cluster the standard errors at the event level. The coefficients of interest,  $\mu_0$ ,  $\mu_1$ ,  $\mu_2$ , and  $\mu_3$ , measure the impact of ads in the week in which they start and one to three weeks after, relative to the omitted category  $\mu_{1-}$ . The main specification considers all ads equally, irrespective of the number of people reached. Indeed, while we observe the number of impressions per inhabitant in the state, that number is endogenous to ad quality. In a robustness check, we drop the ads with very few or very many impressions from the sample, to check that our results are not driven by outliers.

The fact that candidates run ads at different times enables us to control flexibly for the calendar week and to ensure that our effects are not biased by the overall increase in donations over the election cycle or by other time trends. Our  $\theta_w$  week-state fixed effects further allow for time trends in donations to vary across states.

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<sup>48</sup>Because we conduct the analysis at the state level, we cannot investigate the extent to which social media ads contribute to explain the influence of factors varying at the district level such as race closeness, unlike the exercise we conduct for TV ads.

Our identification assumption is that conditional on the controls, the specific week in which a candidate runs an ad is uncorrelated with the outcome. We also assume that any pre-trend before the fourth week preceding the launch of the ad or any impact after the fourth week following it are accurately captured by the fixed effects  $\mu_{4-}$  and  $\mu_{4+}$ .

**Effects on contributions** We measure the effects of ads posted by Democratic candidates on the number of small and large contributors and the dollar amount of their contributions to the candidate who posted the ad. Figure 7 does not show any major pre-trend in these outcomes in the three weeks before the ad. Instead, the ads have immediate effects that are statistically significant on the number of small and large donors and on their total donation amounts. The effects then decrease in magnitude but they remain positive and significant in the following weeks, which may be partly due to the fact that ads often run for multiple weeks. Appendix Table G.26, Panel (a), reports the corresponding point estimates. Overall, an event increases the number of donors per 10,000 inhabitants during the first week by .132, compared to the preceding week (column 1). This effect corresponds to 3.9 times the mean number of contributors to a Democratic candidate in the state over a week (0.034).<sup>49</sup> For donation amounts, the effect is equal to 4.1 times the mean donation amount to a Democratic candidate in the state over a week (column 4). These effects are larger for small donors than for large donors: social media ads increase the number of unique small donors and their total contributions by ratios of 6.6 and 9.5 relative to the mean (columns 3 and 6) against 1.9 and 2.8 for large donors (columns 2 and 5). We obtain qualitatively similar results, albeit smaller in magnitude, when looking at primary elections (Appendix Figure F.25 and Table G.26, Panel (b)).

These results are robust to using the difference-in-differences estimator from de Chaisemartin and D'Haultfoeuille (2024), which eliminates any bias coming from heterogeneous and dynamic effects (Appendix Figure F.24). They also hold (but are smaller) when excluding new advertising weeks which are separated by less than two weeks or one week (instead of three weeks), thereby increasing the number of events included in the estimation (Appendix Figures F.26 and F.27), and when dropping ads with a number of impressions falling in the top 1 percentile of the distribution, thereby ensuring that the results are not driven by a few extremely salient ads (Appendix Figure F.28), or with a number of impressions falling in the bottom 25 percentiles of the distribution, i.e., very small campaigns unlikely to have sizable effects (Appendix Figure F.29).

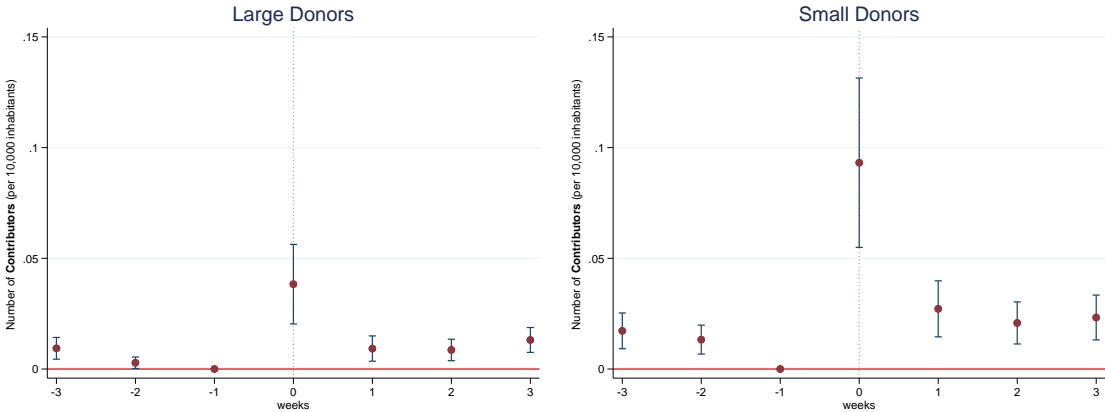
We extend the analysis in two ways. First, 57.6% of ads include a hyperlink to ActBlue or WinRed, allowing viewers to directly make an online donation. We restrict the sample events to the ones including those ads and find that their effects tend to be larger (Appendix Figure F.30). While unsurprising, this result provides additional evidence that we are capturing a causal impact rather than a spurious relationship. Second, we measure the effects of ads sent by Republicans (Appendix Figures F.31 and F.32 and Table

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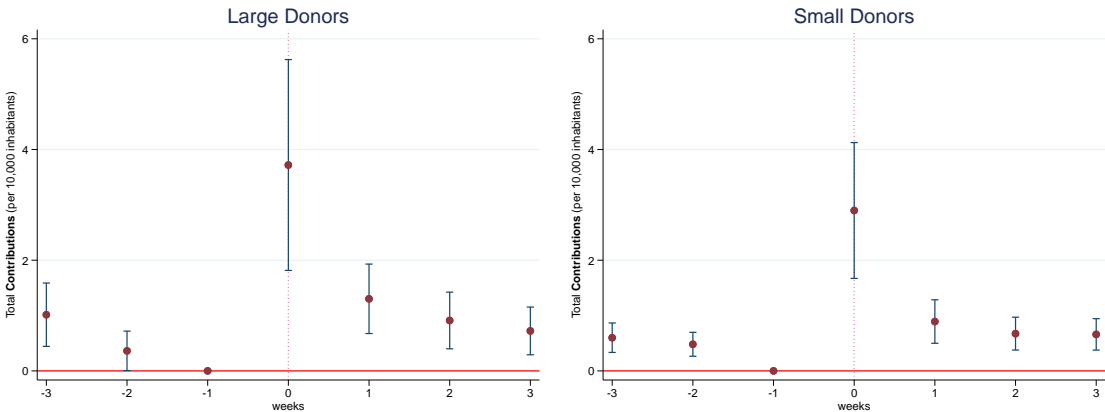
<sup>49</sup>While this effect may seem large, it is important to note that our sample includes all weeks of the electoral-cycle, including the many months before the election date and, sometimes, before the candidate starts actively campaigning. Hence, many candidate-state-week cells have no contributors, greatly decreasing the mean of this variable.

Figure 7: The effects of social media ads on campaign contributions: Democratic congressional candidates, 2020 general election

(a) Contributors



(b) Contributions



**Notes:** The figure shows point estimates and 95% confidence intervals associated with the leads and lags variables defined in Equation (3); that is, indicator variables taking the value of one on weeks 3/2/... before/after the week of the corresponding ad-event. Models are estimated using OLS. An observation is a candidate-state-event-week. The sample includes all congressional Democratic candidates for the general elections who ran at least one ad on Meta’s platform during the 2020 election cycle. Estimations also include “4-” and “4+” indicator variables, as well as candidate-event fixed effects and week-state fixed effects. In the bottom figures, the dependent variable is the number of unique contributors from the corresponding state donating that week to the candidate posting the ad, per 10,000 state inhabitants. In the top figures, it is the inverse hyperbolic sine transformation of the total dollar amount of contributions made that week from the corresponding state to the candidate posting the ad, per 10,000 state inhabitants. Standard errors are clustered at the event level. The corresponding point estimates are shown in Appendix Table G.26, Panel (a).



G.29). When considering all ads, we observe significant pre-trends, indicating that confounding factors hamper the identification. However, these pre-trends disappear when focusing on ads including a hyperlink to a conduit (Figure F.32). In that case, we observe effects on contributor numbers which are smaller but more persistent than the effects of Democratic ads including a link to a conduit. Once again, the effects on small donors are larger in percent terms than the effects on large donors. However, effects on contribution amounts are small and non-significant.

Finally, we can use our results to estimate the dollar returns of money spent by candidates on social media ads in terms of campaign contributions. We focus on the point estimates of Appendix Table G.27 Panel (b), as they are based on the largest sample of ads and hence are the most likely to be representative of the average effect of all ads. On average, an additional event increases contributions per 10,000 adult inhabitants from all donors to congressional races by 1.32 dollars in the first week. The mean number of events by congressional candidates in a state during the general election is 6.98 in 2020. Therefore, over that period, ads have increased contributions from individual donors by 9.19 dollars per 10,000 adult inhabitants. Multiplying this number by the average adult state population in the sample and expressed in 10,000s (564.1), we obtain that ads triggered approximately 5,182 dollars of contributions per state per candidate, i.e., 259,082 dollars per candidate across the country, which is 59% more than the average 163,080 dollars candidates spent on those ads. Hence, social media ads seem to generate positive net fundraising returns, as opposed to TV ads. Similarly as for TV ads, this back-of-the-envelope calculation relies on the assumption that the effects of the ads separated by one week or more, which we focus on, are representative of the effects of all ads.

## 6 Conclusion

In this paper, we study the characteristics and the behavior of small donors, and compare them to large donors. We take advantage of the growing use of conduit organizations such as ActBlue to build a dataset including more than 30 million unique donors and 340 million contributions. Our data cover more than 92% of the total amounts received by all candidates for the 2006 to 2020 election cycles, for which we observe rich donation-level information, including the exact timing and amount of each contribution, as well as donors' name, address, and occupation. We use this information to create unique donor identifiers, identify each donor's gender, ethnicity, income, and location, and differentiate small and large donors based on their total donations to any candidate. In our dataset, more than 23 million of unique donor-cycles are small donors. Building this dataset is our first contribution.

This new dataset allows us to produce four main results. First, we provide novel evidence on the growing number of small donors in the U.S. and the magnitude of their contributions. Second, we show that small donors are on average more likely to be women, from ethnic minorities, from lower (or inactive) occupational groups, and with lower annual salaries and home values than large donors, but that they remain not fully representative of the U.S. population in these different aspects, except for gender. Third, we find

that small donors are less influenced than large donors by key electoral, geographic, and demographic factors identified by the literature as drivers of donations. Fourth, we find that political ads on both TV and social media affect the number and the size of contributions, particularly for small donors, suggesting that pull factors are important to explain their behavior.

Our findings provide converging evidence that small donor contributions are likely driven by expressive motives. Some key patterns of donations are indeed difficult to attribute to electoral or influence motives (e.g., a large share of contributions flowing to candidates in safe races), but can be explained by a type of expressive motives. In particular, the observed patterns in the data concerning small donors align with a “salience-modulated” expressive motive, where the expressive value of a contribution varies with the salience of the race, which in turn is determined by both the characteristics of the candidates running and their effort to raise contributions.

While we provide novel evidence on small donors, our paper leaves important questions unanswered. Our results shed light on the determinants of small donor contributions, once they enter the sample, but what explains the dramatic increase in the number of small donors over time? In particular, can the creation of ActBlue and WinRed explain this pattern, or have these conduits only made visible donations which would have taken place anyway? Furthermore, our findings on the drivers of small donations raise a set of questions regarding their consequences. Do small and large campaign donations affect electoral outcomes differently? Have candidates changed their behavior in response to the recent surge in small contributions? For instance, small donors are more likely than large donors to support out-of-district candidates. Have they contributed to the nationalization of U.S. politics, such as the one described by Hopkins (2018)? Similarly, have their donations fueled the recent partisan polarization, or influenced the profile of those who stand for office? We hope that our new dataset will help researchers address the questions raised by our results.

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