

# Small Campaign Donors\*

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## Abstract

In this paper, we study the characteristics and behavior of small donors, and compare them to those of large donors. We first build a novel dataset including all the 340 million individual contributions reported to the U.S. Federal Election Commission between 2005 and 2020. Due to the particular legal structure of the new online fundraising platforms first used by Democrats (ActBlue) and now Republicans (WinRed), we are able to extract contribution-level information about a majority of the small donations. This allows us to identify “small” donors, i.e. donors who give less than \$200 during a two-year electoral cycle to each committee, and to differentiate them from “large” donors. The analysis of this novel dataset delivers several new insights. First, we provide evidence on the growing number of small donors in the U.S. and on the magnitude of their contributions. Second, we find that small donors include more women and more ethnic minorities than large donors – with minorities still under-represented –, while they do not differ much in terms of their geographical distribution. Third, using a saturated fixed effects model to explore the determinants of contributions by small and large donors, we find that the closeness of a race, whether the candidate and the donor live in the same district or state, and, to a lesser extent, the ethnic alignment between the donor and the candidate have a positive impact on contributions. We also find that donors contribute more to more extreme candidates. These effects are lower for small donors. Finally, we show that campaign TV ads affect the number and the size of contributions, and more so for small donors.

**Keywords:** Campaign finance, Campaign contributions, Small donations, ActBlue, WinRed, TV advertising

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# 1 Introduction

Small donors, i.e. citizens contributing small amounts of money to political campaigns, have become a topical issue of U.S. politics in recent years. They are perceived as increasingly important,<sup>1</sup> and even sometimes qualified 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, we know little about these small donors and their behavior. Who are they? Why do they donate? How much do they differ from large donors? A key challenge to answer these questions is the lack of comprehensive data on small donors and their contributions. In this paper, we rely on the new data emerging from the growing use of “conduits” channeling individual contributions, to overcome that challenge. We provide the first comprehensive evidence on the characteristics and behavior of small donors.

Our first contribution is to build a novel dataset including all the contributions made by individuals and reported to the U.S. Federal Election Commission (FEC) between 2005 and 2020, i.e. around 340 million contributions. A key novelty is that we are able to observe contribution-level data for the vast majority of contributions, however small they are. This is because, in recent years, most contributions have been channeled by conduits such as ActBlue, an online fundraising platform created in 2004 that now dominates Democratic fundraising, and WinRed, its Republican counterpart launched in 2019. Conduits have different reporting obligations than traditional campaign committees: they must report detailed information on all the contributions they collect, not just those above \$200. During the 2020 electoral cycle, about 87 % of all observable contributions went through a conduit. As a result, we have contribution-level data for 92% of the total amounts received by candidates.

For each of these observed contributions, the FEC data include information about the amount and date of the contribution, the first and last names of the donor, their address, occupation and employer. We use this information to create unique donor identifiers, and differentiate “large” from “small” donors based on their total contributions: we call “small donors” the donors who do not give more than \$200, over a two-year electoral cycle, to each committee to which they contribute.<sup>3</sup> Out of about 30 million unique donors in our dataset, more than 15.2 million are small donors. In addition, we use donors’ name and address to infer their gender, ethnicity and geo-localization. We complement the contribution data with data about all House, Senate, and presidential candidates for 2005-2020. Beyond electoral outcomes, we have (manually) coded the gender and ethnicity of these candidates.

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

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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) and “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>We have chosen to define the small donors with respect to a \$200 threshold, because \$200 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 below, would be unobservable. See Section 2.1 for more details.

number of *observable*<sup>4</sup> small donors has strongly increased over time, from about 50,000 in the 2006 electoral cycle to nearly 12 million in the 2020 cycle. In comparison, the number of large donors has increased from 1.3 to 8.2 million during the same time period. Further, small donors' contributions account for a growing share of both the number of contributions received by campaigns and the overall funds they raise.

In the second part of our analysis, we provide descriptive evidence on the characteristics of small donors and on the patterns of contributions which differentiate them from large donors. First, we observe relatively more women among small donors, especially in recent electoral cycles: 52.5% of small contributors are women, while only 37.7% of large donors are. Second, while ethnic minorities are under-represented among both small and large donors, this under-representation is less pronounced among small donors. This is especially marked for Black and Hispanic donors: their share among small donors (6.5% and 7.1%, respectively) is twice as large as among large donors. Third, we do not observe clear differences in terms of the geographical location of small and large donors: both types of donors are concentrated on the coasts and in large metropolitan areas, and there are some parts of the country, e.g., the rural West, where almost no donor can be found. Fourth, 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 substantially larger share of all small donors' contributions than large donors'. Fifth, we observe that the timing of contributions by small and large donors differ substantially: most strikingly, the former surges much more in days following key events, such as the death of Justice Ruth Bader Ginsburgh in 2020.

Our third set of results focuses on the determinants of small and large donors' contributions. We develop a simple conceptual framework to identify the different reasons why individuals contribute to electoral campaigns, and isolate a number of distinguishing contribution patterns. We single out key measurable factors that can influence the behavior of donors: the closeness of a race, whether the candidate is the incumbent or is expected to finish in the top two, and ideological, gender, ethnic, and geographical alignment between the donor and the candidate. Turning to the data, we use a saturated fixed effects model, with year, office (Senate vs. House), state, and, most importantly, contributor fixed effects, to assess how much these factors affect the behavior of donors, and to determine whether they differ across small and large donors, both at the intensive and the extensive margins. To ensure that we observe most donations by both small and large donors, we focus in the main analysis on donations to Democratic candidates for the period 2014-2020, during which the penetration of ActBlue is very high. We study general and primary elections separately to allow for determinants to impact contributions differently. We also show the robustness of our findings for Republican candidates by studying the 2019-2020 cycle, after WinRed had been launched.

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<sup>4</sup>As we will discuss in Section 2 below, one cannot know the exact number of small donors, as small donors contributing directly to committees (i.e. not through a conduit) only appear as aggregated amounts of unitemized contributions. However, using those aggregates, we show that the majority of the small donations now happens through ActBlue and WinRed, so that our dataset of small donors covers the vast majority of them, at least in recent years.

We find that the factors highlighted in the conceptual framework are relevant in practice. In particular, we estimate that the closeness of the race, the geographical alignment of the donor and the candidate (i.e., the donor living in the candidate's district), and, to a lesser extent, the ethnic alignment between the donor and the candidate have a large and positive effect on the likelihood of contributing and the amount contributed for both small and large donors. We also find that donors are both more likely to contribute and tend to contribute more to more progressive candidates (to the left of the median Democratic candidates), except the most progressive ones. Yet, the magnitudes of all these effects are smaller for small donors. For instance, based on our preferred specification, large donors are 72.7% more likely to contribute to a candidate in a close race than in a safe one, whereas for small donors the increase is 51.9% but not statistically significant. For geographical alignment, the difference materializes mostly on the intensive margin: large donors contribute 90% more to in-district candidates, as compared to 65% for small donors. The difference between small and large donors appears not only when using our definition of small donors, but also when estimating the effects of those factors for different deciles of donors based on the size of their donations: the magnitudes of the effects of closeness, in-district, and ethnicity increase smoothly with the size of the donations. We find similar results in primary elections as in general elections. Furthermore, contribution patterns in primary elections reveal that donors contribute more to top two candidates and that hedging, i.e. donors contributing to more than one candidate in a given race, is a rare phenomenon in general, and particularly so for small donors.

Two key findings that emerge from the above regression analysis are that small donors contribute more than large donors to (i) out-of-district races, and (ii) safe races (either sure winners or sure losers). A question that follows is: which candidates are the target of these small contributions? We observe that small donors concentrate both their out-of-district contributions and their safe-races contributions on fewer candidates than large donors. These candidates appear to participate in nationally prominent races either because the Democratic candidate is a leader of the party or of one of its sub-groups (e.g., Nancy Pelosi or Alexandria Ocasio-Cortez) or because the Republican candidate is a nemesis of the Democratic party (Andrew Janz in 2018 when he tried to outseat Devin Nunes).

The effects of the aforementioned factors on donors' behavior can be driven by the combination of donors' own motives (push factors) and differences in campaign outreach activities across races and candidates (pull factor). Our fourth set of results thus provides evidence about the effect of pull factors on contributions. We focus on TV ads, which account for more than half of all candidate expenses, and for the vast majority of candidates' advertising expenditures (Ridout et al., 2021). We extend Spenkuch and Toniatti (2018)'s border discontinuity design to estimate the effects of TV ads on small and large contributions to Democratic candidates over the 2012 to 2018 period (data on TV ads for the 2020 election cycle will not be available before 2023).

We find three main results about the impact of TV ads. First, in presidential races, we estimate a positive and significant impact of Democratic ads on the number of contributors, which is almost

entirely driven by large donors given that there were few (observed) small contributions in 2012 and 2016 presidential elections. Second, in House and Senate races, Democratic and Republican ads have effects of opposite signs on the number of people contributing to the Democratic candidate. The effects on the number of small donors are significant and they amount to 15 and 10 percent of the mean for Democratic vs. Republican ads respectively, contrasting with the non-significant and smaller effects on the number of large donors. This difference may be due to small donors' lower baseline level of information. Third, the estimated effects on contribution amounts are consistent with the effects on the number of contributors, but they are less precisely estimated. We also get qualitatively similar results when exploiting the timing of donations by focusing on monthly outcomes. While TV ads are only one tool in the fundraising toolkit of campaign, the magnitude of the estimated effects suggests that pull factors are important to explain the behavior of donors.

In addition to helping us understand why small and large donors contribute to campaigns, estimating the dollar returns of money spent by candidates on TV ads reveals whether, beyond mobilizing voters, this form of campaign communication can generate financial returns and partly cover its own cost. Back-of-the-envelope calculations suggest that these returns are substantial: overall, contributions generated by TV ads may cover nearly half of their cost.

**Literature review** There is a very large literature on campaign donations, investigating both their determinants and their consequences (for a literature review, see Dawood, 2015). So far, this literature has mainly focused upon large political gifts and/or the total aggregate resources available for political campaigns (Gimpel et al., 2006; Bonica, 2014; McCarty et al., 2006; Heerwig, 2016; Rhodes et al., 2018). But the motives behind large donors' contributions such as political influence (see Gordon et al. (2007); Chamon and Kaplan (2013); Barber (2016) for empirical evidence, and Grossman and Helpman (1994, 1996) for the leading theoretical models) may not extend to the understanding of the motivation of small donors. For instance, it is very unlikely that small contributions buy policies or access to politicians. We contribute to this literature by studying the contributions of small donors and the differences with large donors' behavior.

Only recently has the literature considered small donors, i.e. donors who give less than \$200 in the U.S. context.<sup>5</sup> But this literature mostly relies on survey data, such as the American National Election Studies or more specifically targeted small donor surveys (Graf et al., 2006; Joe et al., 2008; Lipsitz and Panagopoulos, 2011); on the study of small donors using survey data, see also La Raja and Schaffner (2015) and Malbin (2013) for an early survey. By contrast, in this paper we rely on administrative data, which is of particular importance given the well-known limitations of self-reported data, starting with misreporting. Further, surveys such as the National Election Studies do not contain precise information on the actual candidates people give to, hence they do not allow researchers to study important questions such as the role played by the alignment between donors and candidates'

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<sup>5</sup>Similarly, small donors have been overlooked in the theoretical literature. An exception is Bouton et al. (2018).

sociodemographic characteristics in explaining donations. We address this question – among others – in this article.

Alvarez et al. (2019) were the first, to the extent of our knowledge, to study small donors using data on contributions channeled by ActBlue. Comparing the so-called hidden and visible donors, i.e. respectively the donors whose contributions are below/above the \$200 threshold, they show that hidden donors are more likely to be women than visible donors and that they are younger and have lower income on average. However, their focus is on only one specific election and candidate: Bernie Sanders's 2016 presidential campaign.<sup>6</sup> By considering the universe of small donors between 2004 and 2020, we aim at a more comprehensive and generalisable understanding of small donors' characteristics and behavior.

Another exception is a work-in-progress by Albert and La Raja (2020) who use survey data and data from Bonica (2014) as well as ActBlue's FEC records. While they provide evidence of the fact that small donors are more demographically representative of lower-income, female, and racial minority citizens (consistently with the findings of Alvarez et al. (2019)), they do not exploit the richness and granularity of the data on contributions channeled by ActBlue data and other conduits.<sup>7</sup> In particular, because they do not link contributions reported by ActBlue with the recipient candidate (and that candidate's characteristics), they are limited in their ability to understand individual small donors' behavior and, because they do not consider these contributions within the universe of FEC contributions, in their capacity to determine whether this behavior differs from the behavior of large donors. By contrast, in this paper, we go beyond the descriptive results of Alvarez et al. (2019) and Albert and La Raja (2020) and causally investigate the determinants of small donations.<sup>8</sup> Further, the new dataset we build for this study might be of use to other researchers interested in small contributions.

Making a small campaign contribution is an intermediate political behavior between voting (a behavior which is more widespread and less costly) and making a large contribution (a behavior which is rarer and costlier). Therefore, we build on the literature studying these other forms of behavior, by asking some of the questions addressed in these literature, but regarding small contributions. We study both the "intensity" of the behavior (how many small and large contributions people make, and what their total amount is – the counterpart of whether one vote or abstains) and its "direction" (which candidates the small and large contributions go to – the counterpart of which candidate one votes for). Specifically, we contribute to the literature on the effects of electoral campaigns on political behavior.

A recent strand of this literature considers the effect of political advertising (Krasno and Green,

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<sup>6</sup>The fact that they only focus on the 2016 Sanders campaign also leads them to some surprising findings that might not be generalizable to other campaigns. In particular, they show that unemployed workers are more likely to be visible than others, and they highlight that this difference might be indicative of Sanders' popularity among the unemployed.

<sup>7</sup>Culberson et al. (2019) also consider small donors but they do so in an aggregate way, by analyzing unitemized donations as a whole rather than investigating the characteristics of the small donors whose contributions are unitemized. They find that small donors are motivated primarily by instrumental and purposive incentives, but not material incentives. On racial inequality in campaign contributions, see also Grumbach and Sahn (2020).

<sup>8</sup>On the determinants of small donor contributions, see also Green et al. (2015) who conducted a field experiment to examine the impact of non partisan messages, and Lessem et al. (2020) who study the impact of house prices.

2008; Spenkuch and Toniatti, 2018; Sides et al., 2020). Krasno and Green (2008) study the impact of televised presidential ads on voter turnout in 2000, relying on the geographic idiosyncrasies of states and media markets. More precisely, they use the media market as their unit of analysis and exploit within-state variation. They do not find any effect of advertising on turnout. This results is consistent with Spenkuch and Toniatti (2018) who similarly show that political advertising has almost no impact on aggregate turnout (considering the 2004-2012 presidential campaigns). However, in their study of the persuasive effects of political advertising,<sup>9</sup> they do find an effect of advertising on candidates' vote shares. Their identification relies on exogenous variation in the number of political advertising impressions across the borders of neighboring counties (border-discontinuity design).<sup>10</sup> Using the same empirical strategy, in this paper, we find that TV ads also increase donations.

The rest of the paper is organized as follows. In Section 2, we present the novel dataset we construct for this study, detail the regulatory background, and provide key stylized facts. Section 3 provides a simple conceptual framework to study the determinants of campaign contributions, and it then investigates these determinants empirically, comparing small and large donors. In Section 4, we study the extent to which campaign donations are influenced by television advertising. Finally, Section 5 concludes.

## 2 Data and descriptive statistics

Our dataset contains all the contributions made by individual donors and reported to the U.S. Federal Election Commission (FEC) between 2005 and 2020. Building this novel dataset is our first contribution.<sup>11</sup> Overall, we observe a total of 340 million individual contributions.

Table 1 displays summary statistics on contributions split by two-year electoral cycle. We first observe that the number of contributions has dramatically increased over time. It was nearly ten times larger in 2018 than in 2006, and it increased again four-fold between 2018 and 2020. Second, the mean and median contribution amounts decreased during that period, from 292 to 60 dollars and from 60 to 15 dollars, respectively, pointing to the growing importance of small contributions.<sup>12</sup>

Below, we provide information on our data sources and on the regulatory background (Section 2.1); we argue that we are able to observe the vast majority of political contributions, which was not possible until recently, and explain why (Section 2.2); we define small donors (Section 2.3); and we

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<sup>9</sup>On the persuasive effects of advertising in the 2000 presidential elections, see also Huber and Arceneaux (2007).

<sup>10</sup>Using the same identification strategy, Sides et al. (2020) investigate the impact of television advertising on Senate, House, gubernatorial, Attorney General, and state Treasurer elections between 2000 and 2018. They find that the effect of ad airings is much larger in down-ballot elections than presidential elections.

<sup>11</sup>All contributions reported to the FEC are publicly available on the its website (<https://www.fec.gov/data/>). We scrapped all "individual contributions," namely contributions made by individuals, by contrast with contributions from organizations and other political committees. We further apply a number of cleaning procedures, detailed in Appendix A. In particular, we filter duplicate entries, refunded contributions, contributions misattributed to individual donors instead of organisations, and tips made on top of political contributions for the functioning of conduits (see below).

<sup>12</sup>See Appendix Figure B.1 for the distribution of the amount of these contributions across all years.

Table 1: Summary statistics on *all* observable contributions by individual donors, by two-year electoral cycle, 2006-2020

	Mean	St.Dev	P25	Median	P75	Max	Obs
2006	292.1	972	25	60	250	250,000	5,220,840
2008	299.2	1,161	25	75	250	296,131	10,135,950
2010	237.7	1,915	22	50	154	2,000,000	8,014,443
2012	237.0	6,841	15	38	100	5,486,382	16,379,566
2014	149.9	7,765	8	25	50	16,000,000	16,592,807
2016	129.6	8,222	6	20	50	11,000,000	37,253,535
2018	85.7	8,476	5	12	26	20,000,000	51,068,028
2020	59.7	5,988	5	15	35	15,000,000	195,015,888

**Notes:** The table gives summary statistics. Time period is 2006-2020. Variables are values for all the contributions included in our dataset, and are reported by by two-year electoral cycle.

provide a few stylized facts about differences between small and large donors (Section 2.4).

## 2.1 Data sources and regulatory background

The FEC, created in 1975, is an independent government agency responsible for administering and enforcing the federal campaign finance law.<sup>13</sup> Of particular interest to us is the FEC’s role in the public disclosure of funds raised and spent during electoral campaigns.

The key entity in the FEC data is the committee. Every candidate, local party, or political group that spends money with a political purpose has to create a committee and to register it with the FEC. Whenever the total contributions of an individual to a committee since the beginning of the election-cycle exceed \$200, the committee must report the identity of this individual as well as the contributions they receive from them from that point onward.<sup>14</sup> Contributions reported to the FEC are said to be *itemized*: each of them has an entry in the FEC data with detailed information on the specifics of the contribution (date and amount), the contributor (their full name, address, occupation and employer) and the recipient. By contrast, contributions from individuals that have not (yet) attained the \$200 reporting threshold with the committee of interest are said to be *unitemized*. Their total amount is only included in the committee’s aggregate financial summary.<sup>15</sup>

Adding to the distinction between itemized and unitemized contributions, contributions can either be *direct* – when they are made directly by an individual to a recipient committee – or *earmarked* –

<sup>13</sup>Individual campaign donations are limited by law in the U.S.: donations to a candidate’s local committee are capped at \$2,700 per election, and citizens may also contribute up to \$5,000 a year to Political Action Committees, up to \$10,000 a year to local party committees, up to \$33,900 to national political parties, and up to \$101,700 to other national party committees.

<sup>14</sup>To be specific, committees are required to report all contributions made on the date the reporting threshold is hit and onward, but not the contributions made beforehand. Consider for instance a donor who made two contributions to a candidate: a first one of \$150 and a second one of \$100. The candidate’s campaign committee must report the second donation but not the first.

<sup>15</sup>Some committees choose to itemize all the contributions they receive. Culberson et al. (2019) call these committees “serial reporters” for their penchant for disclosing all contributions, irrespective of their amount.

when they are made through an intermediary or *conduit*.<sup>16</sup>

The largest conduit is ActBlue, an online fundraising platform that now dominates Democratic fundraising.<sup>17</sup> ActBlue was created in 2004 to help the Democrats raise money.<sup>18</sup> Candidates which adopt ActBlue can receive online contributions without having to set up their own fundraising platform. They simply need to include a link on their website which redirects potential contributors to a page dedicated to them on ActBlue's website.<sup>19</sup> ActBlue also facilitates political contributions on donors' side. On its website, users can choose from a menu of candidates and groups to donate to, and they have the option of donating to lists created by others, such as battleground candidates, female candidates or candidates who support "Medicare-for-all."<sup>20</sup> Donors can contribute to candidates seamlessly, from their computer or their smartphone. Once they have entered their information and card number, an additional contribution is just one click away. In 2019, a similar platform was launched on the Republican side, WinRed.<sup>21</sup>

## 2.2 Visible contributions

Until now, donations above \$200 made directly to committees had been the main focus of the literature. By contrast, we are able to observe the vast majority of political contributions, however small they are, for two reasons.

First, like other committees, ActBlue and other conduits must register with the FEC and report the contributions they receive. But critically, unlike other committees, conduits do not have a minimum reporting threshold: they need to report *all* the contributions they collect on behalf of candidates, including those below \$200.

Second, contributions made through ActBlue and other conduits have steadily increased over time, and they now account for the vast majority of contributions in our data. Overall, 70.7% of the individual contributions in the data were made through conduits. Figure 1 shows that ActBlue accounts for the lion's share of such contributions today. We plot the number of donations made through ActBlue, through WinRed, and the number of other donations. In the years following its creation, ActBlue only channeled a small fraction of contributions. While the 2008 Barack Obama campaign famously

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<sup>16</sup>Contributions made through conduits clearly designate the destination committee. This distinguishes them from contributions made to Political Action Committees (PACs), which PACs can decide to use to support candidates of their choice or other committees.

<sup>17</sup>Other conduits on the Democratic side are much smaller. They include MoveOn.org and EMILY'S LIST (which channels contributions to female candidates supporting abortion rights).

<sup>18</sup>Formally, ActBlue is a nonprofit organization. Its stated mission is to "empower small-dollar donors". Groups that use ActBlue pay a 3.95% credit card processing fee. As a nonprofit, ActBlue runs its own, separate fundraising program and accepts tips on contributions to pay for its expenses. See e.g., "How ActBlue Is Trying To Turn Small Donations Into A Blue Wave," *FiveThirtyEight*, Carrie Levine and Chris Zubak-Skees, 25 October 2018.

<sup>19</sup>See "How ActBlue Became a Powerful Force in Fund-Raising", *The New York Times*, Derek Willis, 9 October 2014.

<sup>20</sup>See e.g., "How Small Donations Gave Underdog Democrats a Fighting Chance for the House," *The Washington Post*, Michelle Ye Hee Lee, 4 November 2018.

<sup>21</sup>Contrary to ActBlue, WinRed is a for-profit fundraising platform. For more information on the launch of WinRed, see e.g., "GOP to launch new fundraising site as Dems crush the online money game," *Politico*, Alex Isenstadt, 23 June 2019.

raised a large number small donations, it did so without using ActBlue.<sup>22</sup> The number and amount of contributions channeled by ActBlue increased dramatically after 2012. In the 2020 electoral cycle, the number of ActBlue donations accounted for nearly 65% of all contributions. On the Republican side, the newly created conduit WinRed accounted for nearly 23% of all the donations. In total, more than 95% of all observable individual donations in the 2020 electoral cycle were made through a conduit. Conduits account for a lower share of contribution amounts, since many of the contributions they channel are small. But that share has been increasing 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% just two years before and only 2.9% in 2012 (Figure 1b).

Unsurprisingly, the increase in the number of ActBlue and WinRed contributions was concomitant with an increase in the fraction of candidates using these conduits. The share of Democratic candidates receiving at least one contribution through ActBlue rose from 67% in 2006 to 96% in 2020 (Appendix Figure B.8). On the Republican side, in 2020, around one third of candidates used WinRed. As shown in Appendix Figure B.9, the fraction of Democratic candidates using ActBlue and other conduits is slightly higher among incumbents and, interestingly, among women candidates. It is also higher among White candidates than Black and Hispanics, but this difference has slightly receded over time. We observe similar sociodemographic differences in the adoption of WinRed and other conduits by 2020 Republican candidates (Appendix Figure B.21).

The growing number of contributions made through conduits and in particular through ActBlue, on the Democratic side, together with the fact that conduits report all contributions implies that we now observe the vast majority of all individual political contributions. We show this in Figure 2, where we focus on the Democratic side. We compute the sum of all individual contributions which we observe in our data, including itemized contributions made directly to candidates and reported by these candidates to the FEC, as well as all contributions earmarked by a conduit. We then divide the total amount of observed contributions by the financial summaries of committees, which include all contributions they received, whether we observe them or not. As shown in the figure, the contributions to Democratic congressional candidates that we observe accounted for 78 to 85% of the total amount of contributions from 2008 to 2014, and this fraction has increased since then, reaching 95% in the 2020 elections.<sup>23</sup> The increase in the fraction of observed contribution amounts is similar when we include Republican candidates in the sample, as shown in Appendix Figure B.6.<sup>24</sup>

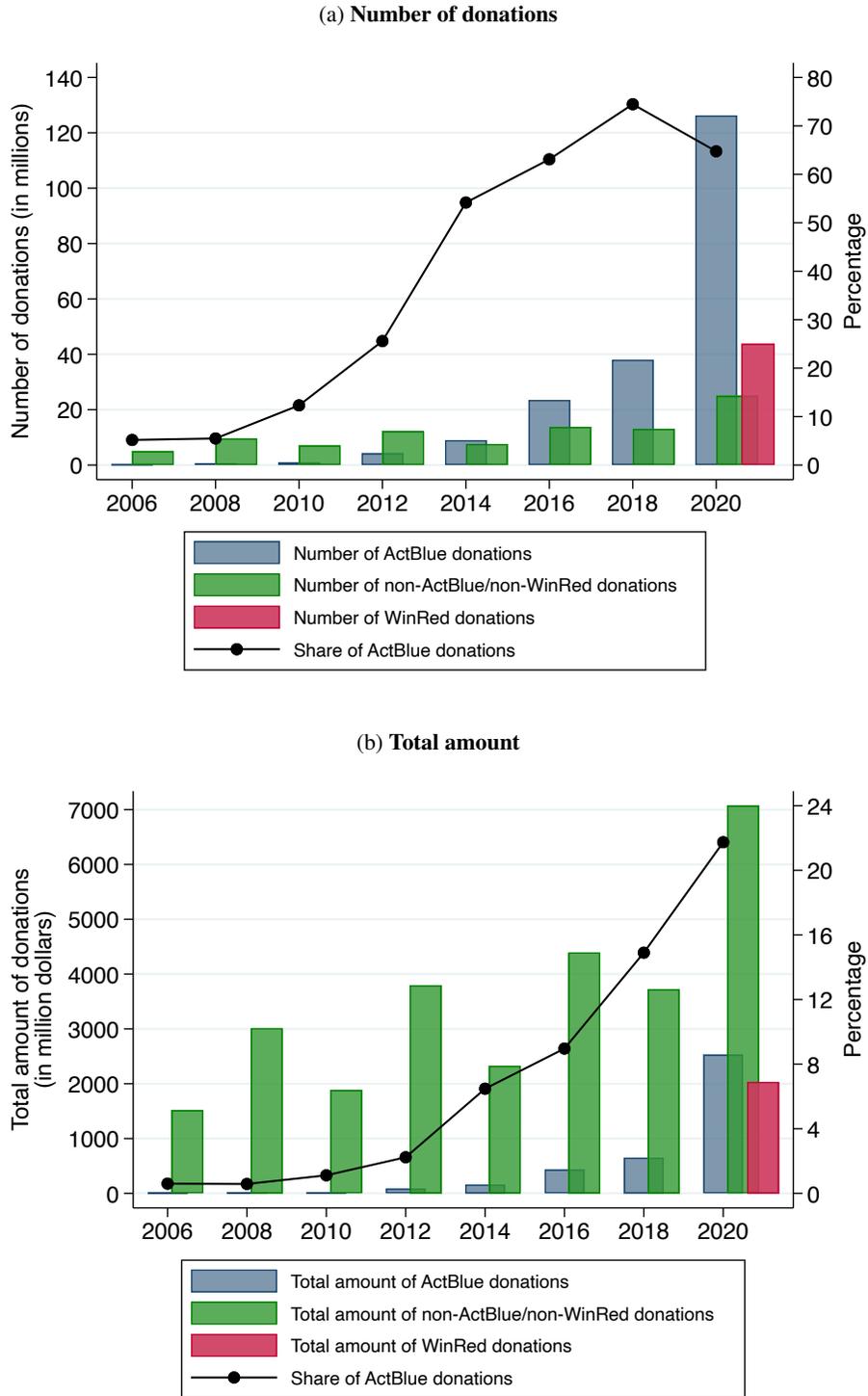
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<sup>22</sup>Barack Obama received 2,459,604 donations in 2008, mainly through the “OBAMA FOR AMERICA (C00431445)” committee. Online Appendix Figure B.2 plots the distribution of these donations. The median value of a contribution is equal to \$100 and 75% of the contributions are below \$200.

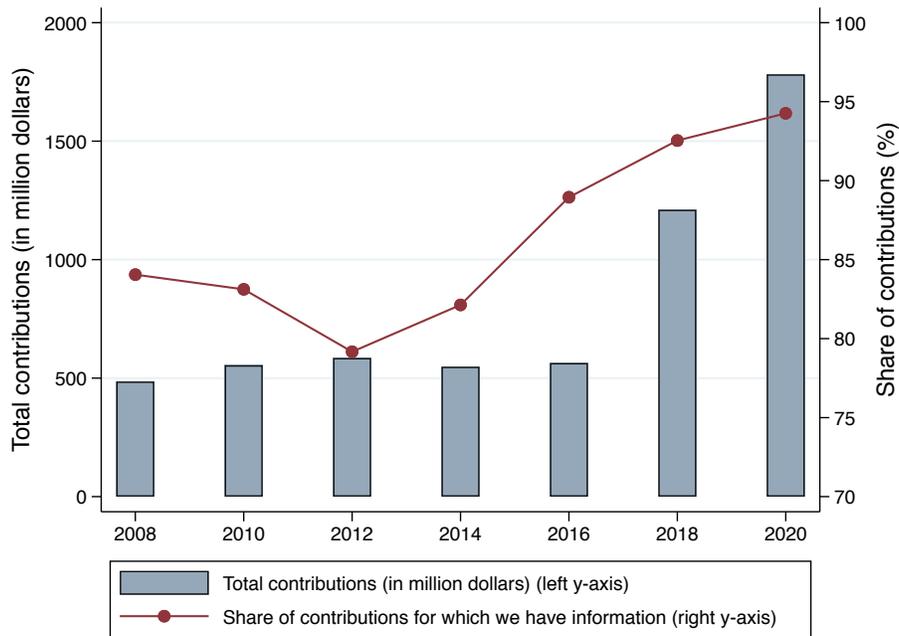
<sup>23</sup>Another way to understand which contributions are made visible thanks to conduits is to compare unitemized contributions to the sum of conduit contributions that are not itemized by candidate committees. In 2020, the conduit contributions that are not itemized correspond to 92% of the total amount of unitemized contributions (see online Appendix Figure B.4).

<sup>24</sup>On average, donations to Republican candidates are more likely to be above \$200 than donations to Democrats. Therefore, we are more likely to observe these contributions even if they were made directly to the candidate, and not through a conduit.

Figure 1: The number and total amounts of ActBlue and Winred contributions, 2006-2020



**Notes:** The figure represents the number (sub-Figure 1a) and total amount (sub-Figure 1b) of donations made by individual donors between 2006 and 2020, by two-year electoral cycle and depending on whether they were made through ActBlue, WinRed or none of the two.



**Notes:** The figure plots the evolution of the donations received by Democratic congressional candidates (as measured by the sum of itemized and unitemized contributions reported in their financial summaries), and the share of these amounts for which we have contribution-level information (including on the contributor) in our data.

Figure 2: Contributions to Democratic congressional candidates: total amounts and share for which we have contribution-level information, 2008-2020.

## 2.3 Small donors

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

While the FEC data contain unique candidate IDs, the same is not true for individual contributors. We build unique donor IDs using the two following steps. First, we clean four variables identifying donors: their first name, last name, street, and zip code. Second, we 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. For additional details on this procedure, we refer to Appendix A.4.1. Overall, we identify a total of 30 million unique donors who donated at least once between 2006 and 2020, which corresponds to about 12.7% of the adult US citizen population in 2020.

We then compute the total contributions made by any donor to any presidential, House, or Senate candidate, separately for each two-year electoral cycle. We define as “small donors” all individuals who contributed less than \$200, only through Actblue or WinRed<sup>25</sup>, to each of the committees to which they contributed during a specific cycle.

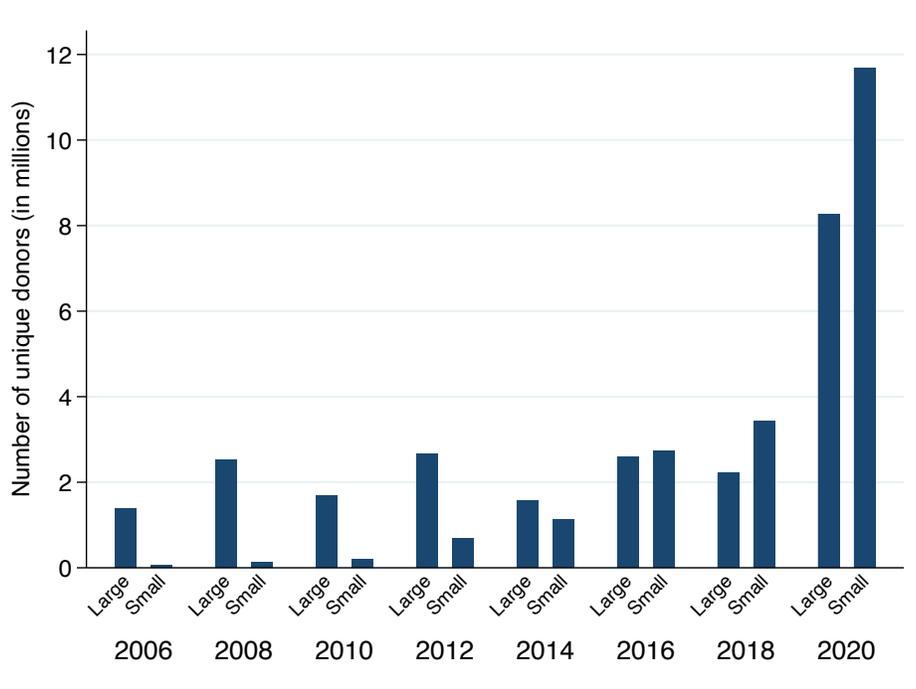
All other donors are called “large”. The distinction that we draw between small and large donors is election-specific: a donor may be small in one cycle and large in the next one if the maximum amount they gave to a committee was larger than \$200 in the second year but not in the first. Overall, our data include 15.3 million small donors and 14.6 million large donors.<sup>26</sup>

There are two data-driven imperfections in our identification of small and large donors and of 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 to whom they contribute directly. We do not know the exact number of these “hidden donors” (a terminology proposed by Alvarez et al. (2019)), but we know that it is small, especially in recent years. Indeed, recall from Figure 2 that thanks to the growing use of conduits we observe the vast majority of contributions in the last elections. Second, the total contributions of a large donor may be below the actual total, and even below \$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, for the same reasons as for hidden donors, they only represent a small share of total contributions. Besides, though their computed totals may be

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<sup>25</sup>Remember that committees have to report contributions from donors only after they hit the 200\$ threshold, which means that, for many individuals, the total observable contributions will actually be *lower* than 200\$ (this is the case for instance of a contributor giving in two installments of 150\$). Our definition of small donors hence excludes all individuals with non-earmarked observable contributions, assuming they are itemized by committees because they contributed more than 200\$. As mentioned earlier, a number of committees decide to report all of their contributors, irrespective of their amounts, but these “serial reporters” are rare.

<sup>26</sup>Note that contributions by small donors are *not* equal to unitemized contributions. Indeed, contributions by small donors to committees which report all contributions (including those below \$200) will be itemized. Conversely, unitemized contributions do not only include contributions by small donors but also (i) contributions to committees which total less than \$200 but were made by donors who contributed more than \$200 to at least one other committee, as well as (ii) contributions made by donors to committees to which they would give more than \$200 in total, before that threshold was reached.



**Notes:** The figure represents, for each electoral cycle between 2006 and 2020, the number of large and small unique donors.

Figure 3: Total number of small and large unique contributors, by electoral cycle, 2006-2020

incorrect, they are correctly labelled as "large" and not "small" donors.

Figure 3 plots the number of small and large donors in each electoral 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, the number of small and large donors both increased spectacularly.

## 2.4 Differences between small and large donors

In this section, we use our novel dataset to provide the first ever stylized facts about the sociodemographic characteristics and contribution patterns of the universe of small and large donors. In Section 3, we build on this descriptive evidence to explore and compare the determinants of contributions made by these two types of donors.

**Gender and race distribution** First, we use donors' first name to identify their gender and race. We infer donors' gender using U.S. Social Security data on the proportion of boys and girls for each name. We infer their race using census statistics on the distribution of ethnicities by surname in each census block. In Table 2, we compare the gender and race distribution of small donors, large donors, and candidates. Each candidate's gender and race were coded by hand, based on publicly available information and pictures.

Table 2: Summary statistics on candidates' and donors' demographics, 2006-2020

	Candidates	Large Donors	Small Donors
	Share	Share	Share
<b>Demographics</b>			
Female	0.207	0.377	0.525
White	0.725	0.771	0.691
Black	0.076	0.033	0.065
Hispanic	0.049	0.038	0.071
Asian	0.024	0.028	0.035
<b>Observations</b>	10,424	14,648,127	15,292,058

**Notes:** The table gives summary statistics on the demographic characteristics of federal election candidates, large and small donors. Time period is 2006-2020. An observation is a unique candidate / contributor.

The table yields two broad insights: Small donors tend to be more representative of the overall population than large donors, and their representativeness has improved in recent elections. Specifically, women only account for 37.7% of large donors, as compared to 52.5% of small donors. While the fraction of women has increased among both groups over time, as shown in Appendix Figure B.22, the difference persists. Furthermore, 77.1% of large donors are White and only 3.3% Black and 3.8% Hispanic, against 13.4% and 18.5% in the overall population. Ethnic minorities are also underrepresented among small donors, but much less so: 6.5% of them are Black and 7.1% Hispanic, which is nearly twice as much as for large donors. Appendix Figure B.10 plots the share of each ethnicity among small vs. large donors, and its evolution over time. Interestingly, the fraction of ethnic minorities among small donors has increased substantially since 2006, particularly after 2016. By contrast, their fraction among large donors was slightly *larger* than among small donors in 2006, but it has stagnated since then.

Finally, the gender and ethnic distribution of candidates offers a useful comparison point. There are even fewer women among candidates (20.7%) than among large donors, and the fraction of Whites is lower among candidates (72.5%) than among large donors but higher than among small donors.

**Geographical location** Second, we exploit the fact that we know donors' exact address to map the number of small and large donors as a share of the population in each county. We focus on the 2020 election, in which ActBlue and WinRed were both available. The spatial distributions of small and large donors shown on Figures 4a and 4b are remarkably similar. Both types of donors are concentrated in the North East, on the coasts, and in large metropolitan areas such as Atlanta, Dallas Fort-Worth, Chicago, and Minneapolis. If anything, small donors appear more numerous in the Great Lakes region, while there are more large donors in the rural West. 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. Overall, these spatial differences are much larger than differences in standard indicators of voting behavior such as voter registration, turnout, party affiliation, and vote

shares.

**Timing of the contributions** Third, we compare the timing of the contributions made by small and large donors, focusing again on the 2020 election. In Figure 5, we plot the share of total contributions by small and large donors (top and bottom graphs) on any given day of the campaign. 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, donors' 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 candidates** Finally, we investigate whether small and large donors give to different candidates. In Figure 6, we use one observation per candidate and plot the relationship between the share of small donors' contributions received by the candidate (out of the total contributions made by small donors across all races that year) and the share of large donors' contributions that they received (out of the total contributions made by large donors). The sample is restricted to candidates competing in House or Senate races (excluding presidential candidates) and in the general election (not the primary).

If small and large donors were contributing in identical proportions to the same candidates, 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 perfect. 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 donors' than large donors' contributions.<sup>27</sup> The graphs obtained when focusing on each election separately are similar, indicating that these patterns are not driven by the growing number of small donors over time (Appendix Figure B.12).

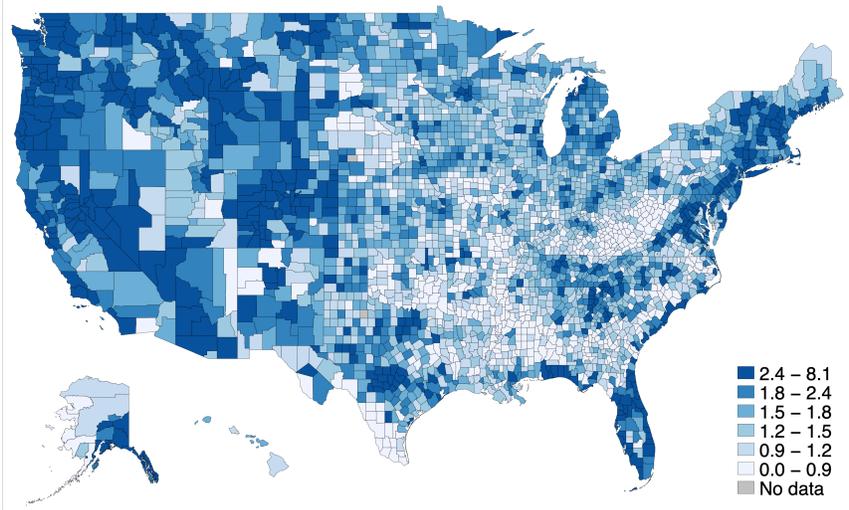
Differences in the sociodemographic characteristics of small and large donors, in the timing of their contributions, and in the candidates that they contribute to suggest that they may respond to different

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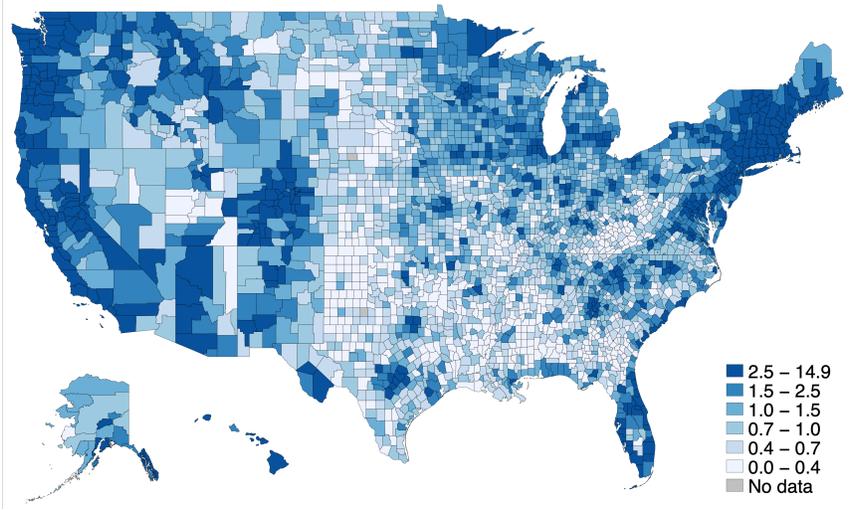
<sup>27</sup>Due to the winsorization at the 90th percentile, this figure hides the fact that a very small number of candidates attract a very large fraction of all contributions by all donors.

Figure 4: The geography of small and large donors, 2020

(a) % of Large Donors in Population

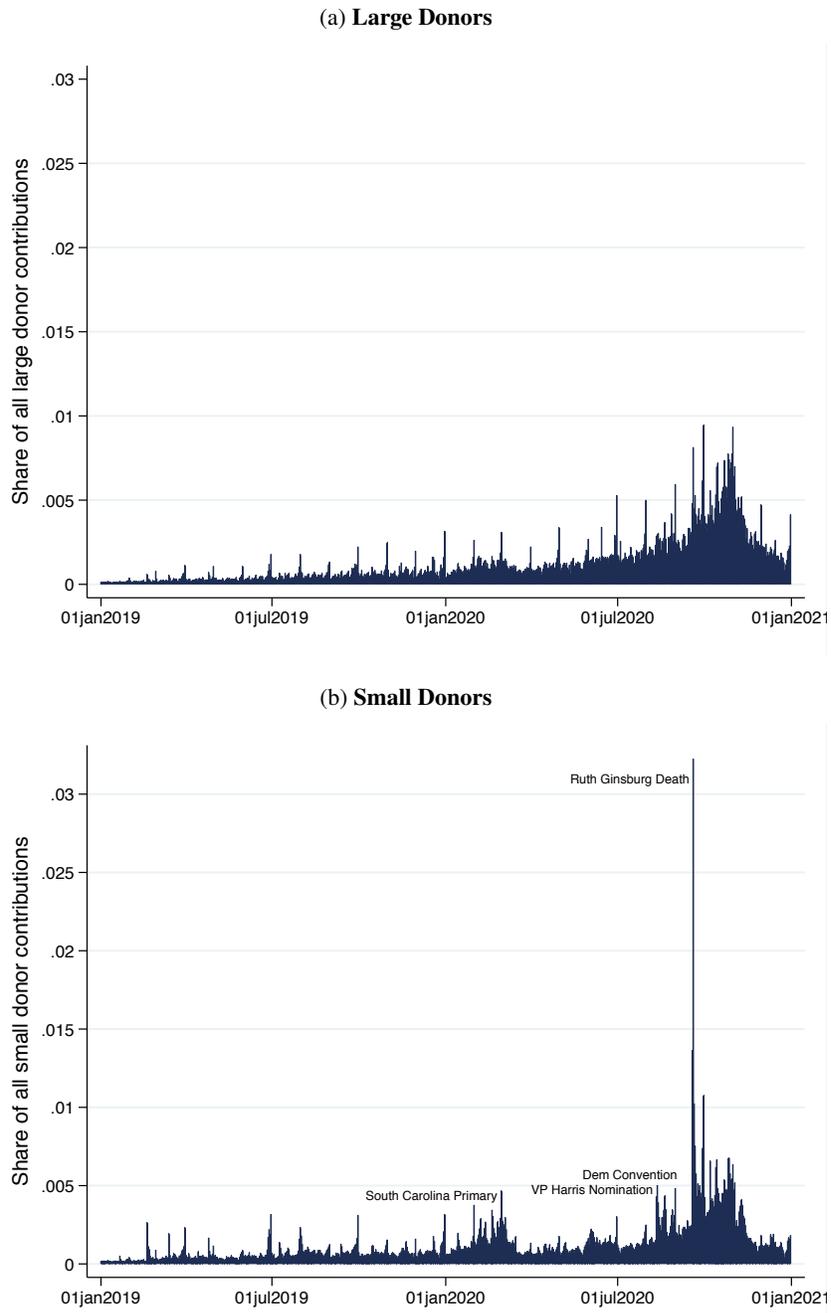


(b) % of Small Donors in Population



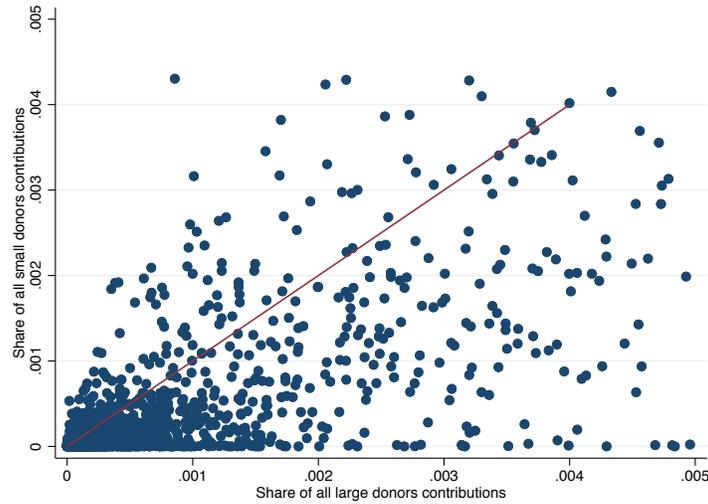
**Notes:** The figures map the small and large donors living in each US county during the 2020 electoral cycle, as a share of the county population.

Figure 5: The timing of small and large donors' contributions, 2020



**Notes:** The figures plots the number of large and small donors' contributions on each day of the 2020 election cycle, as share of the total contributions made during the whole cycle.

Figure 6: The shares of all small and large donors in each race, General Elections, 2014-2020



**Notes:** The figure plots, for each General Election Democratic candidate at each electoral cycle between 2014 and 2020, the relationship between the share of large donors' contributions to this candidate (out of the total amount contributed by large donors to all candidates) on the x-axis, and the share of small donors' contributions to this candidate (out of the total amount contributed by small donors to all candidates) on the y-axis. For the sake of readability, these shares are winzorisized at their 95th percentile (which respectively correspond to .005 and .0044).

factors. The next section compares the determinants of contributions by these two types of donors.

### 3 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 whose goal is to guide and organize the empirical analysis. We then turn to the empirical analysis itself.

#### 3.1 Conceptual framework: strategic vs. non-strategic motives

Why do individuals contribute to electoral campaign? As explained in Gordon et al. (2007), the literature identifies two broad classes of motives.<sup>28</sup> Some scholars view contributions as a strategic political investment. Contributions then aim at helping candidates with favorable characteristics such as ideology and competence to win (Poole and Romer (1985), Wand (2007)), buying policy favors such as (future) legislative votes or pressure on regulatory agencies (Ara (1979), Baron (1989), Snyder (1990), Grossman and Helpman (1994), and Grossman and Helpman (2001)), or buying access to

<sup>28</sup>There is no accepted typology of motives in the literature. For instance, Wilson (1995) considers three motives: the material motive (people contribute in order to gain tangible benefits to themselves), the purposive motive (people contribute in order to achieve ideological or policy goals), and the solidary motive (people contribute in order to enjoy working and interacting 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 are after personal gain or access, ideologues who pursue particular issue agendas, intimates who are driven by the social aspects of giving, and incidentals who have inconsistent giving patterns.

politicians once in office in order to make them aware of specific concerns that could shape legislation in the making (Langbein (1986), Hall and Wayman (1990)). To facilitate the discussion, we will talk about *electorally-motivated* contributions (those made to promote the electoral success of a desirable candidate), and *favor-motivated* contributions (those made in expectation of a political favor in return, either through access or through legislative votes).

Other scholars view contributions as consumption goods (e.g., (Ansolabehere et al., 2003), and (Gimpel et al., 2008)). Bonica (2014) (p. 370) writes “[...] the vast majority of donors give amounts so diminutive that it is difficult to conceive of the contribution as an investment.” Contributions are then 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 this the *expressive motive*.

Obviously, these different motives are not mutually exclusive. Not only can different contributors be driven by different motives, any given contributor may also give for multiple reasons.

To structure our discussion of these different motives and of the comparative statics they generate, we proceed with a formal approach. Unfortunately, there is no work-horse model predicting clear contributions patterns for donors driven by the different motives. Yet, using arguments of various degrees of formality, the literature highlights the compatibility of different motives with different patterns of contributions. We propose a stylized and reduced-form model to capture these insights. The model highlights which features of the donors, the candidates, and the electoral races should affect the behavior of donors, and in which direction. It also clarifies that few patterns of contributions allow to fully disentangle between the different motives.

### 3.1.1 The model

Consider a race featuring two candidates,  $A$  and  $B$ , and a donor  $i$  who has to choose how much to contribute to her preferred candidate, say  $A$ .<sup>29</sup> We denote by  $q_i \geq 0$  her contribution to  $A$ . Her utility if she contributes  $q_i$  is:

$$u_i(q_i) = \Pr(A \text{ wins} | \rho_A, q_i) v(A, \theta_i, \delta_A) + (1 - \Pr(A \text{ wins} | \rho_A, q_i)) v(B, \theta_i, \delta_B) + h(q_i, \theta_i, \delta_A, \rho_A) + d(q_i, \theta_i, \delta_A, \rho_A) - \frac{(q_i)^2}{y_i}, \quad (1)$$

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<sup>29</sup>Below, we discuss an extension of the model in which we allow donors to give to more than one candidate in any given race.

where  $\theta_i$  captures the individual characteristics of donor  $i$  (e.g., ideology, race, gender) and  $\delta_j$  captures the characteristics of candidate  $j \in \{A, B\}$  (these characteristics can be personal – e.g., gender, race, and skills – and political – e.g., ideology, incumbency, committee membership, party leadership).  $\rho_A$  captures the expected outcome of the race involving candidate  $A$ , and  $y_i$  is the income or wealth of donor  $i$ .

This simple formulation captures the three aforementioned motives of campaign contributors. The first two terms capture the electoral motive: the donor cares about how her contribution affects the identity of the winner of the election, either  $A$  or  $B$ . We allow the difference in utility  $v(\cdot)$  to depend on various characteristics of the donor,  $\theta_i$ , various characteristics of the candidates,  $\delta_A$  and  $\delta_B$ , and the matching of those characteristics. The third term captures the favor motive: the donor cares about the favor promises she can extract from the candidate. We allow the favor-utility to depend on the size of the donor's contribution, on the donor's characteristics and those of the candidate, and on the expected outcome of the election. We assume that  $h(\cdot)$  is increasing and concave in  $q_i$ : extracting favor promises from a given candidate is increasingly expensive. The fourth term captures the expressive motive: the donors obtains consumption utility out of the act of contributing to the campaign of her preferred candidate. We allow this consumption utility to vary with the size of the donor's contribution, with her own characteristics and those of the candidate, and with the expected outcome of the election. We assume that  $d(\cdot)$  is increasing and concave in  $q_i$ , as is natural for any consumption good. Finally, the last term captures the cost of a contribution, which is assumed decreasing in income.<sup>30</sup>

The first order conditions give us:

$$q_i = y_i \left( \frac{\partial \Pr(A \text{ wins} | \rho_A, q_i)}{\partial q_i} V(\theta_i, \delta_A, \delta_B) + H(q_i, \theta_i, \delta_A, \rho_A) + D(q_i, \theta_i, \delta_A, \rho_A) \right) \quad \forall i \quad (2)$$

where  $\frac{\partial \Pr(A \text{ wins} | \rho_A, q_i)}{\partial q_i}$  is the marginal change in the probability that  $A$  wins when donor  $i$  increases her contribution given that the expected outcome of the race in which  $A$  runs is  $\rho_A$ ,  $V(\theta_i, \delta_A, \delta_B) \equiv v(A, \theta_i, \delta_A) - v(B, \theta_i, \delta_B)$  is the utility differential experienced by donor  $i$  if  $A$  wins instead of  $B$ ,  $H(q_i, \theta_i, \delta_A, \rho_A) \equiv \frac{\partial h(q_i, \theta_i, \delta_A, \rho_A)}{\partial q_i}$  is the marginal utility from the additional favor promise that donor  $i$  can extract from candidate  $A$  by increasing her contribution, and  $D(q_i, \theta_i, \delta_A, \rho_A) \equiv \frac{\partial d(q_i, \theta_i, \delta_A, \rho_A)}{\partial q_i}$  is the marginal consumption value of a contribution.

From equation (2), we have that, ceteris paribus, contributions are increasing in the income of the donor, independently of the motive driving those donations. This is quite natural: richer individuals simply have more resources available to contribute, hence the opportunity cost of one dollar of contribution is lower for them than for poorer individuals. This result also highlights that income is not a useful factor when it comes to differentiate the motives underlying donors' behavior: the model indeed predicts that, independently of the donors' motives, income would increase contributions; a

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<sup>30</sup>This assumption would stem out of a model in which donors have to choose between allocating resources to campaign contributions or other consumption goods, and the marginal utility of those consumption goods is decreasing.

point that has been made in the literature (Bouton et al. (2018)). For the sake of expositional clarity, we will thus set  $y_i = 1$  in the remainder of the section.

Note that we can easily use this setup to consider donor  $i$ 's choice of how much to contribute to various candidates in different districts or states, once she has identified her preferred candidate in each race. In that case, the marginal dollar of contribution flows to the candidate with the highest marginal return. The different marginal returns take the same form as in equation (2). In equilibrium, it must then be that the marginal returns of contributions to every candidate receiving a contribution from donor  $i$  are equal, and they are all equal to the marginal cost of contributing.

### 3.1.2 Comparative statics

We now present a number of comparative statics depending on the different motives of interest.

**The electoral motive.** When donor  $i$  is motivated exclusively by the electoral motive, her equilibrium contribution to her preferred candidate  $A$  is:

$$q_i = \frac{\partial \Pr(A \text{ wins} | q_i)}{\partial q_i} V(\theta_i, \delta_A, \delta_B). \quad (3)$$

Electorally-motivated contributions are thus increasing in the marginal effect of a contribution on the probability that  $A$  wins, and in the utility differential if  $A$  wins instead of  $B$ . It is natural to assume that the marginal effect of a contribution on the probability that  $A$  wins,  $\frac{\partial \Pr(A \text{ wins} | q_i)}{\partial q_i}$ , is higher when the election is expected to be close than when it is expected to be a landslide victory. Hence, our model predicts that electorally-motivated contributions increase in the closeness of the race.<sup>31</sup> The flip side of the coin is that donor  $i$  has no incentives to contribute to the campaign of a candidate sure to win or to lose.

Hall and Snyder (2015), building on the voting literature and Duverger's law (Duverger (1954), Palfrey (1988), Myerson and Weber (1993), Cox (1994), Fey (1997)), argue that donors have incentives not to waste their contributions on candidates who do not finish in the top 2. From equation (3) we see that our model produces this prediction if the marginal effect of a contribution on the probability that  $A$  wins drops close to zero when a candidate is not expected to finish in the top 2.

The utility differential,  $V(\theta_i, \delta_A, \delta_B)$ , matters for obvious reasons. Importantly, it can be affected by the characteristics of the donor, the characteristics of the candidates, and how these characteristics match. The literature identifies various characteristics that affect the appeal of a candidate. As discussed by Bonica (2014) (p. 370), ideological proximity plays an important role: “[...] nearly all existing research on individual donors suggests that the choice of recipient represents a genuine expression of the donor’s ideology (Ensley 2009; McCarty, Poole, and Rosenthal 1996).”

<sup>31</sup>As explained in Snyder (1990), donors “[...] that contribute in order to influence election outcomes rather than simply to buy favors will rationally contribute more in races that are expected to be close than in lopsided races (see Colantoni et al. (1975); Welch (1980); Snyder (1989)).”

However, ideology is not the only relevant factor. Gender is another potentially important factor. The literature indeed identifies a “gender affinity effect” (Sanbonmatsu (2002), King and Matland (2003), Dolan (2008)): women (men) are expected to be more supportive of female (male) candidates, both in terms of votes and contributions Cagé and Dewitte (2020). As argued in Dolan (2008) (p.79), “*there are myriad reasons why we might expect women to be a more likely source of support for female candidates than men.*” The reasons relevant for the electoral motive include feelings of group solidarity and of shared gender identity, and a desire for descriptive and/or substantive representation.

Race and ethnicity are other relevant factors. The expected effect is similar as with gender. As argued in Grumbach and Sahn (2020) (p. 206): “[...] the presence of coethnic candidates can spark greater participation for black, Latino, and Asian Americans in campaign finance.” The reasons are also similar: “Feelings of linked fate and empowerment, as well as campaign appeals to coethnicity [...]”.<sup>32</sup> Yet another reason mentioned by Grumbach and Sahn (2020) (p. 208) is that “politicians from marginalized groups tend to exert greater effort to represent and improve the standing of their group in society (e.g., Broockman 2013; Dawson 1995; Logan 2018).”

The literature also highlights the role of geography in the behavior of donors (see, e.g., Gimpel et al. (2006), Gimpel et al. (2008)). The focus is on the importance of donors and candidates living in the same district or state. For electorally-motivated contributions, one argument is that spatial proximity (i.e., being in the same district or state) increases the chances that the donor and the candidate have aligned interests in terms of governmental resources flowing to the district, and of which projects in the district to spend those funds on. A candidate thus has a higher  $v(A, \theta_i, \delta_A)$  if he lives in the same district as the donor than if he lives in another district. Thus, all things equal, donors may have a tendency to donate more to in-district candidates, in comparison to out-of-district ones. Of course, the donor may still prefer to contribute to an out-of-district candidate if that candidate is a better match in terms of ideology, gender, or ethnicity, or if he is running in a closer race.

**The favor motive.** When donor  $i$  is motivated exclusively by the favor motive, her equilibrium contribution to her preferred candidate  $A$  is implicitly defined by

$$q_i = H(q_i, \theta_i, \delta_A, \rho_A). \quad (4)$$

Given that  $H(\cdot)$  is decreasing in  $q_i$  (by the concavity of  $h(\cdot)$  in  $q_i$ ), we have that  $q_i^* > 0$  if  $H(0, \theta_i, \delta_A, \rho_A) > 0$ . Moreover,  $q_i^*$  is increasing in any characteristic of the donor, the candidate, and the race that increases the ability of the donor to extract a favor from the candidate for a given contribution. This is in line with the main insight from the literature: when the objective is to extract a favor from politicians, funds flow to politicians who can deliver the favor at the lowest cost (Denzau

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<sup>32</sup>Grumbach and Sahn (2020) (p. 208) define linked fate as “[...] the belief that one’s individual experience is tied to the collective experience of the ethnoracial group, and greater feelings of linked fate predict support for coethnic candidates among African American and Latino voters (Dawson 1995; McConnaughy et al. 2010; Wallace 2014).”

and Munger (1986), and Snyder (1990)).

The literature identifies various characteristics of politicians that make them more appealing from the perspective of donors driven by the favor motive. Incumbency is an important factor (see, e.g., Snyder (1992), Fournaies and Hall (2014), Culberson et al. (2019)), which is captured by the parameter  $\delta_A$  in our model. One obvious reason is that incumbents are, by definition, in office. Hence, contributing to their campaign grants immediate access.<sup>33</sup>

The literature also predicts that favor-motivated contributions should flow to candidates more likely to win a race.<sup>34</sup> As stated by Bonica (2016) (p. 376): “More so than any other candidate trait, investor models consistently predict that contributions from savvy investors should go disproportionately to the candidates that are most likely to win.” In the notation of our model,  $q_i^*$  should decrease in the closeness of the race, and increase when the candidate is likely to win, as captured by the parameter  $\rho_A$ .

Ideological, gender, and ethnic affinity may also influence positively favor-motivated donations. The common argument is that a necessary condition to get access and extract favor is to build a relationship of mutual trust and respect with politicians (Snyder (1992), (Morgan, 2004)). Ideological commonality, as well as gender and ethnic alignment are factors facilitating the construction of such a relationship. The same is true for spatial proximity, which greatly facilitates interactions between donors and candidates. In our model, those effects appear through the positive effect on  $H(\cdot)$  of a match between the characteristics of the donor,  $\theta_i$ , and those of the candidate,  $\delta_A$ .

An extension of our model in which we allow donors to give to more than one candidate in a given race delivers predictions about the so-called hedging behavior, i.e., donors contributing to more than one candidate in a given race. This can happen in the extended version of our model when the marginal favor promises that a donor can extract from two different candidates are similar (and sufficiently large). When candidates have similar tendencies to grant favor promises, this requires that the two candidates have similar probabilities of winning the race, and then that the race is close. As Bonica (2016) (p. 378) explain: “The suggested rationale for giving to opposing candidates is that when the outcome is uncertain, interested donors may wish to signal their support and willingness to work with both candidates so as to avoid siding with the loser and, as a result, risk being denied access to the eventual winner.”

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<sup>33</sup>As explained in Bonica (2014), the literature also points to the attractiveness of specific types of incumbents: members of the majority party (Cox and Magar (1999)), party leaders, committee chairs, and members of particular committees (Grier and Munger (1991); Snyder and Romer (1994)). The main reason is that these incumbents have more sway over policies, and are thus better able to deliver favors.

<sup>34</sup>This is the prediction of Snyder (1990)’s model of “investor contributors” who exchange contributions for policy favors. Under certain symmetry conditions, there is a positive relationship between the amount of contributions and the probability that a candidate wins the race.

**The expressive motive.** Finally, when donor  $i$  is motivated exclusively by the expressive motive, her equilibrium contributions to her preferred candidate  $A$  are implicitly defined by

$$q_i = D(q_i, \theta_i, \delta_A, \rho_A). \quad (5)$$

Given that  $D(\cdot)$  is decreasing in  $q_i$  (by the concavity of  $d(\cdot)$  in  $q_i$ ), we have that  $q_i^* > 0$  if  $D(0, \theta_i, \delta_A, \rho_A) > 0$ . Moreover,  $q_i^*$  is increasing in any characteristic of the donor, the candidate, and the race that increases the consumption value of a contribution. For instance, if  $D(q_i, \theta_i, \delta_A, \rho_A)$  is weakly increasing in the closeness of the election,  $\rho_A$ , we have that donor  $i$  has stronger incentives to contribute to close races. One justification for this assumption is that close races attract more attention from citizens and the media, and hence the marginal consumption value of a contribution to candidates in close races is higher.<sup>35</sup>

However, note that even when  $D(q_i, \theta_i, \delta_A, \rho_A)$  is dependent on  $\rho_A$ , a donor may contribute to the campaign of a sure loser or that of a sure winner. According to Snyder (1990), contributing to the campaigns of sure losers is strongly suggestive of an expressive motive. His argument is that such a behavior is not compatible with a rational investment strategy (i.e., the electoral and favor motives), and is thus suggestive that the donor is at least partly expressively motivated.<sup>36</sup> Our model produces similar predictions: when  $p(\rho_A)$  drops close to zero (which is the case for a sure loser), electorally-motivated contributions and favor-motivated contributions drop to zero. By contrast, expressively-motivated contributions can be positive.

Equation (5) also clarifies the role of ideological, gender, ethnic and geographical alignment for expressively-motivated contributions. These contributions increase in such alignments if the marginal consumption of a contribution to candidate  $A$ ,  $D(q_i, \theta_i, \delta_A, \rho_A)$ , increases when  $\theta_i$  and  $\delta_A$  match on those dimensions. Various of the reasons proposed by the literature for affinities between donors and candidates along gender and ethnic dimensions are of an expressive nature. For instance, Grumbach and Sahn (2020) (p. 208) write: “Contributions to coethnic candidates may also serve expressive, rather than self-interested, motivations.” Contributions to coethnic candidates can be a medium to assert identity group membership and express group solidarity. Cho (2002) also highlights the desire to express support for one’s own ethnic group. The same is true for contributions to same-gender candidates.

For the geographic alignment, one argument (see, e.g., Gimpel et al. (2006)) starts from the idea that expressively-motivated donors obtain utility from the act of contributing because this allows them to feel and show others that they are member of a specific social group and that they are fighting

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<sup>35</sup>Ansolabehere et al. (2003) suggest another channel: candidates increase their fundraising effort when the election is close and expressive donors respond to this effort. And indeed, Bouton et al. (2018) show formally that a closeness effect exists when expressively motivated donors react to candidates’ fundraising effort and candidates care about winning the race (and hence about the marginal impact campaign spending have on the electoral outcome).

<sup>36</sup>In particular, he writes (p. 1220): “The fact that likely losers receive ‘too many’ contributions from individuals and themselves suggests that running for political office is at least partly consumption, as is contributing at the individual level.”

for a specific cause. Social interactions within local networks exacerbate those incentives, which can then naturally focus on local candidates and the local causes they stand for. In simple words, donors contribute to their local champion in order to be able to tell other guests at dinner parties than they too have contributed to the campaign. However, note that this argument could also apply to out-of-district champions, but it may prove more difficult for a social network to coordinate on such a candidate. The higher likelihood of meeting local candidates and their entourage can also increase the incentives to contribute to local candidates.

### **3.1.3 Summary of key factors and distinguishing contribution patterns**

The literature and our model identify various key factors that can influence the behavior of donors: the closeness of the race, ideological, gender, ethnic, and geographical alignment between the donor and the candidate, and whether the candidate is expected to finish in the top two. In the rest of the section, we study whether those factors indeed affect the behavior of donors in our dataset, and if their effects differ across small and large donors.

Before moving forward with the empirical analysis, we briefly discuss which patterns of contribution would point toward the relative importance of one motive versus the others. The above discussion makes clear that most patterns of contributions can be consistent with the different motives. For instance, ideological alignment can affect positively electorally-motivated contributions (through its effect on the utility differential between the two candidates), but also favor-motivated contributions (by facilitating the building of a trust relationship) and expressively-motivated contributions (by increasing the consumption value of a contribution). Yet, some specific patterns of contributions are difficult to explain under some motives.

First, the model predicts that the closeness of the race has a clear positive effect on electorally-motivated contributions (and a negative one on favor-motivated contributions). Closeness is actually almost a necessary condition for electorally-motivated contributions since it is natural to assume that the utility differential is bounded. Even when they like one candidate much more than the other, electorally-motivated donors have no incentives to contribute to a race in which the winner is certain. As we explained above, the same positive effect can be present for expressively-motivated contributions. But, in contrast with electorally-motivated contributions, closeness of the race is not a necessary condition for such contributions. It is actually a distinguishing feature of expressively-motivated contributions that they can flow to sure losers (or sure winners). In that sense, we view closeness as distinguishing between electorally-motivated and expressively-motivated contributions. In particular, finding no or a small effect of closeness on contributions would be suggestive of the importance of the expressive motive relative to the electoral motive.<sup>37</sup> A similar conclusion could be drawn from not finding a

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<sup>37</sup>Even this conclusion is to be taken carefully. Indeed, there are some ways to rationalize contributions to sure losers or winners without an expressive motive. First, we do not know the beliefs of donors about the sure loser status of a candidate. So, a sure loser from the standpoint of the econometrician is not necessarily a sure loser from the donor's standpoint. Second, donors can contribute to sure losers to send a message to other candidates and pull their policy platforms toward those of

concentration of contributions on top 2 candidates.

Second, the model predicts that hedging, i.e., contributions by a donor to several candidates in a given race, cannot easily be explained by the electoral motive nor the expressive motive, but is a typical pattern of contributions by favor-motivated donors. This is especially the case in races in which there is quite some uncertainty about who will win. Finding evidence of hedging would then be suggestive of the relative importance of the favor motive.

Finally, we expect those distinguishing patterns to be particularly pronounced for out-of-district/state contributions. Indeed, for contributions to those races, donors are unencumbered of any local dimension when giving. They can then freely target the races they view as important. For instance, an electorally-motivated donor can target contributions to the closest races involving starkly different candidates. An expressively-motivated donor can target the candidates that have the most aligned profile in terms of ideology, gender, and ethnicity. A favor-motivated donor can target candidates that are most able (e.g., because they sit in important committees) and inclined (e.g., because of ethnic alignment) to grant her access and favor.

## 3.2 Regression analysis: The determinants of small vs. large donations

We now investigate empirically the joint effects of the factors derived from our model on both the extensive and intensive margins of donations, using regression analysis.

### 3.2.1 Sample of analysis

The electoral and demographic characteristics highlighted above are all attributes of *candidates* (or districts), not *committees*. As described in Section 2, campaign committees can also be associated to local party or issue-specific fundraising groups, which do not have clear districts or candidates attributions. In this section, we thus narrow our analysis to committees that are used by only one candidate (therefore dropping non-candidate and joint committees, i.e. 65.2% of all recorded committees), and more specifically *congressional* candidates (as opposed to presidential, 3.9% of candidates committees), in order to have clear definitions for in- and out-district contributions.

Besides, we are particularly interested in whether the determinants of contributions differ for small and large donors, but as we saw in Section 2, small donations (in particular through ActBlue) only became an important phenomenon beginning in 2014 (and WinRed was created only in 2019). Hence, in order to ensure a sufficiently large and representative sample of small donors, we focus here on the 2014 to 2020 election cycles. In most of the section, we only consider donations to *Democratic* candidates; then, we show in Section 3.2.4 that our results are robust to a similar analysis for Republican candidates in 2020 (WinRed's cycle).<sup>38</sup>

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the sure loser (see, e.g., Piketty (2000), Castanheira (2003) for such a story in the case of voting). Similarly, donors can contribute to sure winners in order to make them and their policies more important within the party.

<sup>38</sup>Another advantage of focusing on the election cycles between 2014 and 2020 is that, as we have seen above, during

Finally, while we consider all along contributions to both general and primary elections, we do so separately as the motives may differ (e.g., hedging is more likely to take place in primary elections than in general elections). For candidates who eventually get nominated for the general election, we define primary election contributions as those made before the date of the primary in the state, for the congressional races, and the date when the last primary challengers dropped out of the race, for presidential elections. We drop contributions that occur *after* the general election but before the next election cycle, as these may also be impacted by the outcome of the election.

Eventually, our sample includes 3,580,616 large donor-candidate pairs and 4,939,977 small donor-candidate pairs.

### 3.2.2 Estimation strategy

Formally, we estimate the following model:

$$Y_{ic(s,r)t} = \mathbf{X}_{ct}\beta + \mathbf{V}_{ict}\gamma + \mu_t + \delta_s + \eta_r + \zeta_i + \epsilon_{ic(s,r)t} \quad (6)$$

where we use one observation per contributor-candidate pair and  $i$  indexes the donors,  $c$  the candidates,  $s$  the states,  $r$  the races, and  $t$  the elections. The outcome of interest,  $Y_{ic(s,r)t}$  takes different forms, depending on whether we focus on the extensive or the intensive margin. To estimate the impact of our independent variables on the extensive margin, i.e. the decision whether or not to contribute, we set the dependent variable  $Y_{ic(s,r)t}$  to 0 for all the contributor-candidate pairs for which no donation is recorded during that specific election, and to 100 when the observed donations are positive.<sup>39</sup> 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 inverse-hyperbolic sine (IHS) transformation<sup>40</sup> of the amount contributed by donor  $i$  to candidate  $c$  in election  $t$ , and we drop all the donor-candidate pairs for which  $Y_{ic(s,r)t} = 0$ .

Our main explanatory variables of interest are included in  $\mathbf{X}_{ct}$  and  $\mathbf{V}_{ict}$ .  $\mathbf{X}_{ct}$  is a vector of seat/candidate characteristics, including an indicator variable for closeness equal to one if the mean Democratic margin over the last two elections for that seat is between -15% and 15%;<sup>41</sup> an indicator variable for safe Republican seat equal to one if the mean Democratic margin over the last two elections for that seat is below -15%; and an indicator variable equal to one if the candidate is the incumbent. The vector  $\mathbf{V}_{ict}$  includes a set of indicator variables indicating whether the characteristics of the contributors

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that period, candidates using and not using ActBlue have similar observable characteristics. To some extent, this alleviates concerns that the results below are driven by the selection of candidates into the use of ActBlue. To further alleviate any doubt, we also check that all our results remain similar when we focus only on the group of candidates who are using ActBlue.

<sup>39</sup>In an ideal world, to estimate the actual extensive margin, we would include in our sample all potential contributors, i.e. all U.S. citizens that could potentially decide to make a political donation. However, we do not have this information at our disposal. Hence, we consider as potential contributors all the contributors who appear at least once in our dataset.

<sup>40</sup>This transformation, which allows to interpret coefficients as changes in percent of the dependent variable, will improve our ability to compare coefficients for small and large donors, whose amounts of contributions naturally differ.

<sup>41</sup>In the rare cases of a seat with a mean margin larger than 15% (smaller than -15%) but a Republican (Democratic) incumbent – i.e., a large switch occurred during the last election, we define the seat as close.

Table 3: Summary statistics on candidates' and donors' characteristics, General Elections, 2014-2020

	Candidates	Large Donors	Small Donors
	Share	Share	Share
<b>Characteristics of the race</b>			
House Elections	0.919	0.420	0.328
Senate Elections	0.081	0.581	0.672
Close Races	0.262	0.623	0.626
Sure Winners	0.375	0.137	0.120
Sure Losers	0.354	0.240	0.254
Incumbents	0.433	0.288	0.252
<b>Matching Characteristics</b>			
Gender		0.490	0.478
Race		0.632	0.619
District		0.108	0.112

**Notes:** The table gives summary statistics. Time period is 2014-2020. An observation is a candidate-contributor pair at each cycle. Shares are computed based on all relevant population with non-missing values.

match with those of the candidates. These characteristics include gender, ethnicity, and geography (i.e., the contributor resides in the candidate's congressional district, for House elections, and in the candidate's state, for Senate elections). All our regressions control for year, State, House/Senate, and contributor fixed effects (respectively  $\mu_t$ ,  $\delta_s$ ,  $\eta_r$ , and  $\zeta_i$ ), so that we exploit variations *within* the same contributor (across races and over time), and we cluster the standard errors two-way, at both the candidate and contributor level. Table 3 provides descriptive statistics on these variables. It shows that (i) large donors contribute more to House races than small donors, and conversely for senate races, but both types of donors contribute more to Senate races; (ii) a substantial share of both large and small donors contribute to non-close races, but donors of both types contribute disproportionately to close races; (iii) large and small donors contribute disproportionately more to challengers than incumbents; (iv) there are essentially no differences between small and large donors in terms of matching characteristics; (v) while about 90% of contributions go to out-of-district candidates, both large and small donors contribute disproportionately to in-district candidates.

### 3.2.3 Empirical results

**The extensive margin.** We first focus on the extensive margin: the decision of donors whether to give to any given candidate or not. As explained above, in that case, the dependent variable  $Y_{ic(s,r)t}$  is set to 0 for all the contributor-candidate pairs for which no donation is recorded during that specific election, and to 100 when the observed donations are positive. Table 4 presents the results. We show the determinants of campaign contributions for large donors, in columns (1) to (3) and for small donors, in columns (4) to (6). Some consistent patterns emerge.

First, we find a positive relationship between the closeness of a race and the likelihood of a

contribution. For large donors, the effect is significant at the 1% level and its magnitude is large: large donors are 0.594 percentage points more likely to contribute to the campaign of a candidate if she is running in a close race than if she is running in a safe Democratic race. This is to compare to a sample mean of 0.817: the increase in the propensity to contribute is thus 72.7%. For small donors, the effect is smaller (i.e., 0.318 percentage point more likely to contribute to a close race than a safe Democratic race, or an increase of 51.9%) and not statistically significant. We also find no significant difference in the appeal of sure losers versus sure winners: contributions (by either small or large donors) do not flow more to candidates running in safe Democratic races (sure winners) than to candidates running in safe Republican races (sure losers).

Perhaps surprisingly given that incumbents raise significantly more funds than challengers, and that incumbency has been found to deliver a financial advantage (see, e.g., (Fouirnaies and Hall, 2014) and references therein), we find that both small and large contributors are less likely to give to incumbents. The effect is quite substantial: minus 0.51 percentage points for large donors (62.4% of the mean) and minus 0.493 percentage points for small donors (80.5% of the mean) and statistically significant at the 10% level. A potential explanation for this surprising finding is that incumbents attract a larger share of their contributions during the primary, whereas challengers attract a larger share during the general elections (which we are considering here). And indeed, as we will see below, in primary elections, both types of donors tend to donate more to incumbents than challengers.

Donors tend to contribute more to candidates in their state, and even more to candidates who run in the district where they live. Geography appears to be a very important factor for both types of donors. We estimate that, on average, large donors are 23.7 percentage points more likely to contribute to candidates running in the district where they live than to candidates coveting an out-of-district seat. Small donors are 18 percentage points more likely to contribute to in-district races. Both effects are significant at the 1% level and they are very large: they amount to 29-fold increases compared to the mean likelihood to contribute.

Turning to the match between the characteristics of the candidates and of the donors, Table 4 shows that being of the same gender as the candidate does not seem to matter (the coefficients in columns (2) and (3) are small and significant only at the 10% level). For matching on ethnicity, the table shows a positive, large, and significant effect for large donors, and a smaller, and only barely significant effect for small donors. Focusing on our preferred specification for those effects (columns (3) and (6)), a match on ethnicity increases the likelihood of contribution by large donors by 0.178 percentage points (or 21.9% of the mean) and by small donors by 0.091 percentage points (or 14.9% of the mean). One possible explanation for the difference in coefficients for match on ethnicity between columns (2) and (3) and columns (5) and (6) is that candidates have different tendencies to run and raise contributions depending on their ethnicity: we know for instance from Section 2 that White candidates are over-represented. By including seat-cycle fixed-effects (which are, in general elections, effectively

Table 4: The determinants of campaign donations: Extensive Margin, General elections, Democratic candidates, 2014-2020

	Large			Small		
	(1)	(2)	(3)	(4)	(5)	(6)
Close Seat	0.589*** (0.173)	0.594*** (0.174)		0.314 (0.171)	0.318 (0.172)	
Safe Republican Seat	0.156 (0.270)	0.162 (0.271)		0.083 (0.260)	0.087 (0.261)	
Incumbent Candidate	-0.510* (0.232)	-0.510* (0.232)		-0.493* (0.233)	-0.493* (0.233)	
In Same State	1.692*** (0.151)	1.658*** (0.148)	1.642*** (0.144)	0.858*** (0.092)	0.841*** (0.090)	0.827*** (0.087)
In Same District	23.634*** (1.614)	23.703*** (1.631)	23.726*** (1.517)	17.955*** (1.422)	17.997*** (1.436)	17.951*** (1.365)
Same Gender	0.019 (0.014)	0.032* (0.016)	0.038* (0.015)	0.035 (0.031)	0.033 (0.032)	0.014 (0.012)
Same Ethnicity	-0.016 (0.088)	-0.043 (0.103)	0.178*** (0.027)	-0.027 (0.067)	-0.046 (0.082)	0.091* (0.040)
Election Year FE	✓	✓		✓	✓	
State FE	✓	✓		✓	✓	
House/Senate FE	✓	✓		✓	✓	
Contributor FE		✓	✓		✓	✓
Seat-Year FE			✓			✓
Sample Mean	0.817	0.817	0.813	0.612	0.612	0.609
R-sq	0.065	0.080	0.140	0.059	0.068	0.140
R-sq (within)	0.031	0.032	0.032	0.023	0.023	0.023
Observations	438,495,567	438,495,567	441,025,914	807,734,083	807,734,083	811,286,334

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes, for each contributor who gave during a cycle, all the possible pairs of that cycle. The dependent variable is a dummy equal to one if the contributor gave to the candidate during the General Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

candidates fixed-effects), we control for this element.<sup>42</sup>

**The intensive margin.** We now focus on the intensive margin: the decision of donors of how much to give to a candidate to which she decides to contribute. In Table 4, we focus on the subset of candidate-contributor-year observations for which we actually observe a positive donation, and investigate how the amount of this donation varies with the characteristics of the race and the match between the donor and contributor characteristics. Note that, by construction, the sample size is much smaller here than in the extensive margin case.

It appears very clearly from Table 4 that the factors that influence donors' decision how much to contribute are different from the factors explaining their decision of whether to contribute or not. In particular, the fact that a candidate is running for a close or a safe seat does not impact how much a large donor decides to contribute (conditional on making a donation), and enters negatively for

<sup>42</sup>Note that, when we perform the same analysis regarding the ethnicity and the gender match, but consider female and male separately, as well as the different ethnicities separately – i.e. an indicator variable for White, and indicator variable for Black, one for Hispanic and one for Asian – we find similar effects.

small donors (Column (4) and (5)). Conditional on making a donation, small donors tend to give between 11% and 19% less to candidates running in close seats than to candidates running in safe ones.<sup>43</sup> Importantly, this negative coefficient is compatible with a positive effect of closeness both at the extensive and the intensive margin. Indeed, the estimated effect of closeness is an average of two different forces. First, closeness has an effect on contributions to candidates to which the donor gives independently of whether the race is close (i.e., inframarginal contributions). If this effect is positive, then it would affect the coefficient of the intensive-margin regression positively. Second, closeness has an effect on contributions to candidates to which the donor gives only if the race is close (i.e. marginal contributions). If those marginal contributions are smaller on average than inframarginal contributions, this effect could affect the coefficient of the intensive-margin regression negatively. The fact that the coefficient on closeness is positive when we include contributors-seat fixed effects suggests that, even on the intensive margin, the effect of closeness is positive.

Moreover, while we saw in Table 4 that both small and large donors are less likely to contribute to the campaign of an incumbent compared to a challenger, we find here that, conditional on making a donation, large donors contribute between 9.8 and 15.1% more to incumbents than to challengers, and small donors about 12% more. As we discussed in Section 3.1, there are various reasons why incumbents could be more appealing to contributors than challengers. As we mentioned above, on the extensive margin, the extra appeal of incumbents does not show simply because donors contribute to incumbents' campaigns in the primary instead of the general elections.

By contrast with the previous factors, geography plays a similar role both at the intensive and the extensive margins. Hence, not only does the fact that the candidate runs in the same State or district where the contributor lives increases the probability that she decides to make a campaign contribution but, conditional on making such a contribution, the fact that the candidate runs in the same State or district increases the amount of this contribution. Similarly as for the extensive margin, the effect on the intensive margin is large overall but slightly smaller for small donors: large donors contribute between 58 and 120% more to in-district candidates than out-of-district ones, whereas small donors contribute between 58 and 78% more to in-district candidates.

Finally, at the intensive margin, we also observe a positive effect of a match on ethnicity but no clear effect for a match on gender. The ethnicity effect is of larger magnitude for large (increase of 10.3% for our favorite specification reported in column (3)) than for small donors (increase of 4.5% for our favorite specification reported in column (6)).

**Overall effects: both margins.** Given the differences in the determinants of the intensive and extensive margins, it is interesting to consider both margins together. To do so, we set the dependent variable  $Y_{ic(s,r)t}$  as the inverse hyperbolic sine transformation of the amount of contributions made

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<sup>43</sup>Note that this change in sign is not driven by the change in the sample of donors between the extensive and the intensive margins specifications. Indeed, running the extensive margin specification on the sample of donors used for the intensive margin, i.e., only the donors who contribute to at least two races, generates very similar results.

Table 5: The determinants of campaign donations: Intensive Margin, General elections, Democratic candidates, 2014-2020

	Large			Small		
	(1)	(2)	(3)	(4)	(5)	(6)
Close Seat	-0.099 (0.065)	-0.064 (0.071)		-0.214* (0.090)	-0.118* (0.058)	
Safe Republican Seat	-0.054 (0.086)	0.055 (0.078)		-0.117 (0.111)	-0.052 (0.064)	
Incumbent Candidate	0.094 (0.059)	0.141*** (0.040)		0.114 (0.068)	0.112*** (0.034)	
In Same State	1.325*** (0.076)	0.641*** (0.042)	0.662*** (0.037)	0.866*** (0.066)	0.439*** (0.030)	0.432*** (0.026)
In Same District	0.459*** (0.081)	0.681*** (0.045)	0.789*** (0.045)	0.459*** (0.068)	0.502*** (0.036)	0.578*** (0.037)
Same Gender	0.040 (0.048)	-0.007 (0.013)	-0.006 (0.012)	-0.002 (0.036)	-0.000 (0.009)	-0.003 (0.008)
Same Ethnicity	0.193*** (0.047)	0.068 (0.052)	0.098*** (0.015)	0.059 (0.045)	0.011 (0.041)	0.044*** (0.012)
Election Year FE	✓	✓		✓	✓	
State FE	✓	✓		✓	✓	
House/Senate FE	✓	✓		✓	✓	
Contributor FE		✓	✓		✓	✓
Seat-Year FE			✓			✓
Sample Mean	4.269	4.114	4.115	2.955	2.747	2.747
R-sq	0.156	0.749	0.766	0.204	0.781	0.794
R-sq (within)	0.128	0.094	0.102	0.131	0.086	0.088
Observations	3,580,616	3,159,518	3,162,496	4,939,977	3,916,684	3,918,127

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes all pairs for which we observe non-zero contributions. The dependent variable is the inverse hyperbolic sine transformation of the total amounts from the contributor to the candidate during the General Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Table 6: The determinants of campaign donations: Extensive and Intensive Margins, General elections, Democratic candidates, 2014-2020

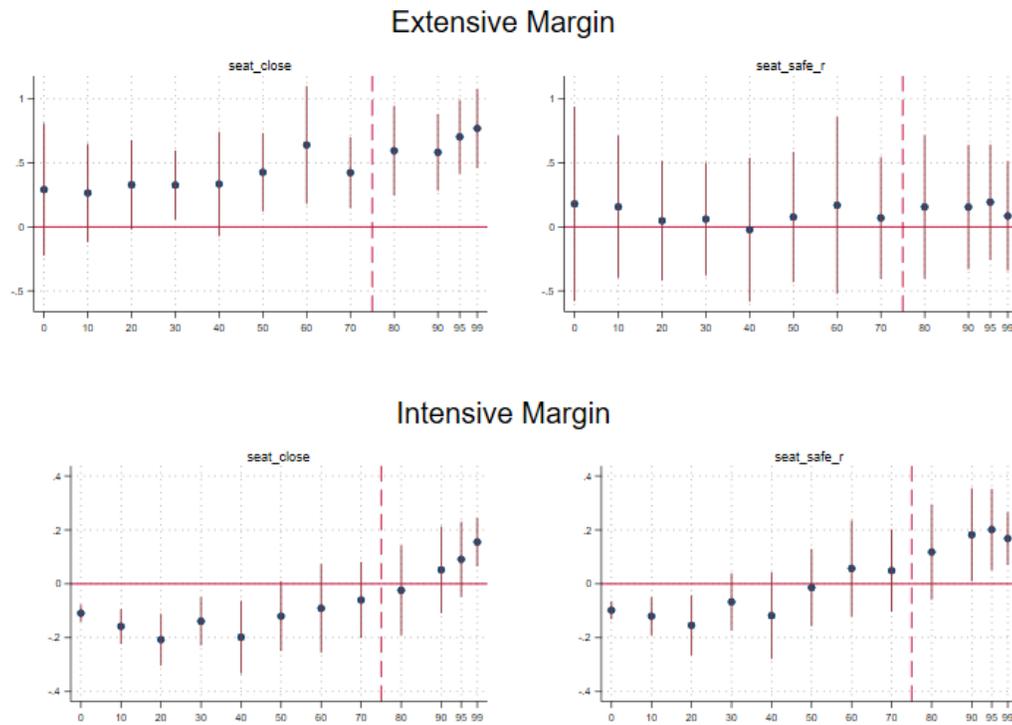
	Large			Small		
	(1)	(2)	(3)	(4)	(5)	(6)
Close Seat	0.025*** (0.007)	0.026*** (0.008)		0.010* (0.005)	0.010* (0.005)	
Safe Republican Seat	0.007 (0.012)	0.008 (0.012)		0.002 (0.008)	0.003 (0.008)	
Incumbent Candidate	-0.020* (0.010)	-0.020* (0.010)		-0.013 (0.007)	-0.013 (0.007)	
In Same State	0.090*** (0.008)	0.089*** (0.008)	0.088*** (0.007)	0.032*** (0.003)	0.032*** (0.003)	0.031*** (0.003)
In Same District	1.378*** (0.095)	1.380*** (0.096)	1.384*** (0.091)	0.745*** (0.059)	0.746*** (0.059)	0.746*** (0.057)
Same Gender	0.001 (0.001)	0.001 (0.001)	0.001* (0.001)	0.001 (0.001)	0.001 (0.001)	0.000 (0.000)
Same Ethnicity	0.001 (0.004)	-0.001 (0.005)	0.011*** (0.002)	-0.000 (0.002)	-0.001 (0.003)	0.003* (0.001)
Election Year FE	✓	✓		✓	✓	
State FE	✓	✓		✓	✓	
House/Senate FE	✓	✓		✓	✓	
Contributor FE		✓	✓		✓	✓
Seat-Year FE			✓			✓
Sample Mean	0.035	0.035	0.035	0.018	0.018	0.018
R-sq	0.077	0.087	0.140	0.067	0.072	0.133
R-sq (within)	0.047	0.048	0.049	0.036	0.036	0.037
Observations	438,495,567	438,495,567	441,025,914	807,734,083	807,734,083	811,286,334

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral 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 amounts from the contributor to the candidate during the General Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

by contributor  $i$  to candidate  $c$  in election  $t$ , which is 0 for many contributor-candidate pairs. Table 6 presents the results. The main picture that emerges is that the extensive margin drives the overall effect. Indeed, we see that closeness, in-state, in-district and match on ethnicity affect positively contributions, and that incumbency affects contributions negatively. The effects are large, except maybe for the match ethnicity one. Two differences with the extensive margin results are: (i) the coefficient on close race is statistically significant for both large and small donors, and (ii) the effect of in-state and in-district are substantially larger for large than for small donors. This relatively lower propensity of small donors to contribute to in-district and in-state candidates is a pattern we return to below.

**Heterogenous effects with respect to donor size.** So far, we have used a dichotomous perspective in our definition of small and large donors: above/below 200\$ maximum contribution to any committee. But there are large variations in maximum contribution amounts within these two groups (from 1 to 200\$ per candidate, and from 200 to 2,700\$ respectively), and the determinants of donations may vary along this heterogeneity. We thus check whether our results are robust to using a finer categorization

Figure 7: The importance of closeness: Estimations by donors' deciles, General elections, Democratic candidates, 2014-2020



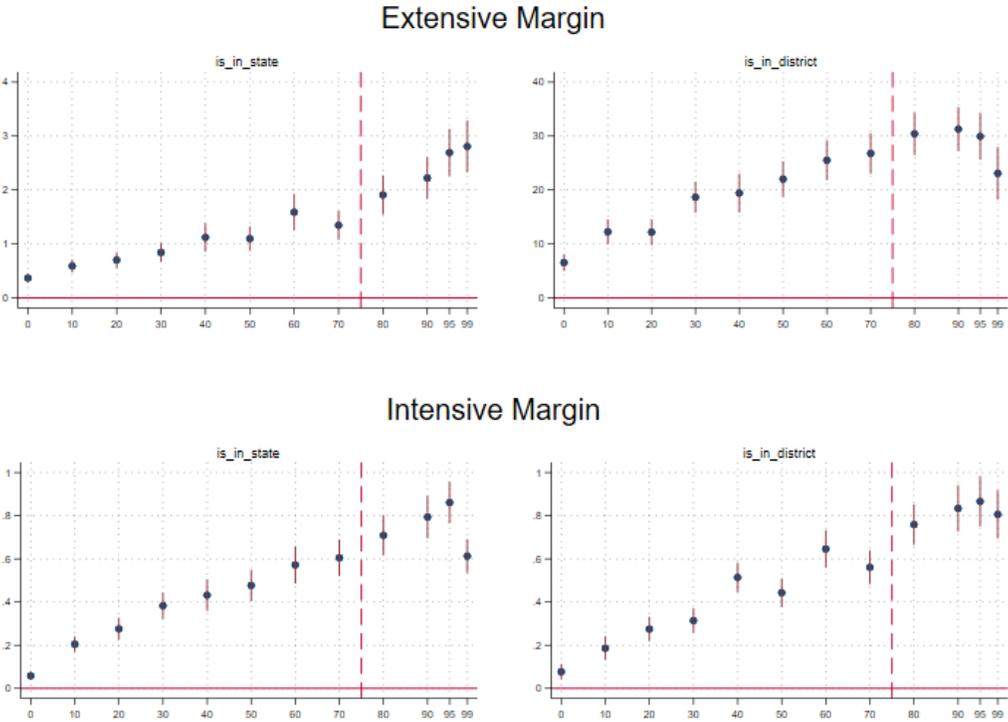
**Notes:** The figure plots the values and 95% confidence intervals of the "Close Seat" and "Safe Republican Seat" coefficients obtained from estimating Equation 6 for different deciles of donors, grouped based on the maximum total contributions they make to a candidate during an electoral cycle.

of donors. We rank donors depending on the maximum amount that they contributed to a candidate during a cycle, and we perform our estimation (the equivalent of column (2) and (5) in the tables above) separately in each decile of this distribution. Figure 7 reports the results for the closeness of the seats, and Figure 8 for geography (out vs. in-district/state donations). In both cases, we report the point estimates for the extensive margin in the upper figures, and for the intensive margin in the bottom ones.

Interestingly, the differences in the effects of closeness and geography between small and large donors we identified earlier seem to be increasing with the difference in maximum contributions between groups.<sup>44</sup> Figure 7 shows that the smaller the donor, the less contributions flow to candidates in close races, both at the extensive margin (where closeness enters positively, in particular for large donors) and at the intensive margin (where it has a negative impact for very small donors and a positive impact for very large ones). This is consistent with the results presented in Tables 4 and 5 above. Figure 7 also shows that, on the intensive margin, very small donors contribute less to sure losers, and very large donors do so more.

<sup>44</sup>For the sake of comparison, note that the \$200 threshold used to split our sample between small and large contributors in the Table corresponds to the 8th decile of the donors in the figure.

Figure 8: The importance of geography: Estimations by donors' deciles, General elections, Democratic candidates, 2014-2020



**Notes:** The figure plots the values and 95% confidence intervals of the "In State" and "In District" coefficients obtained from estimating Equation 6 for different deciles of donors, grouped based on the maximum total contributions they make to a candidate during an electoral cycle.

Turning to the role played by geography, Figure 8 shows that, both on the extensive and on the intensive margins, the smaller the donor, the more out-of-district donations they make. In other words, while large donors tend to give more to candidates running in their district or state, small donors – and in particular the very small ones – seem to care less about the electoral district boundaries, both when they decide whether to contribute to a candidate and, conditional on making a donation, when they choose the amount of their donation. Our findings that small donors are increasingly important and have a more pronounced tendency to contribute to out-of-district candidates, anywhere in the country, suggest that they may be one of the factors driving the nationalization of politics in the U.S. (see, e.g., Hopkins 2018 and (Sievert and McKee, 2019)).

**Out-of-district and safe-race contributions.** Two key findings that emerge from the above regression analysis are that small donors contribute more than large donors to (i) out-of-district races, and (ii) safe races (either sure winners or sure losers). A question that follows is: which candidates are the target of these small contributions?

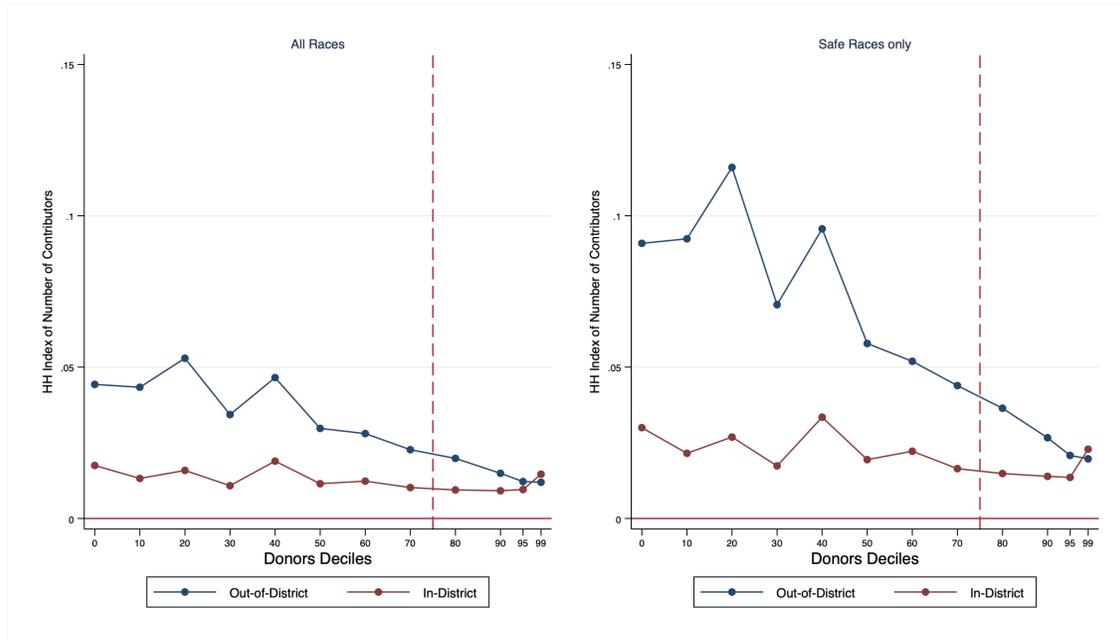
A first observation is that small donors appear to concentrate both their out-of-district contributions and their safe-race contributions on a smaller number of races than large donors. In particular, we computed, within each donor decile, the “market share” – defined with respect to the number of donors – of each of the candidates and used these market shares to build an Herfindahl index which measures the spread of the contributions across races. A higher value of the index means that contributions by donors in a given decile are concentrated on fewer races. The results are reported in Figure 9 (panel (a) for out-of district contributions and panel (b) for safe-race contributions).

On this figure, we see that small contributors tend to be more concentrated in specific races. In other words, small donors’ out-of-district contributions and contributions to safe races flow to a smaller number of “big receivers.” A cursory look at the characteristics of those big receivers in the House and the Senate reveals that many are nationally prominent races either because the Democratic candidate is a leader of the party or of one of its sub-groups (e.g., Elizabeth Warren in 2018, Nancy Pelosi in 2014 to 2020, and Alexandria Ocasio-Cortez in 2020) or because the Republican candidate is a nemesis of the Democratic party (as Andrew Janz, in 2018, who tried to outseat Devin Nunes, or Amy McGrath, who challenged Mitch McConnell in 2020). Splitting the safe races between Democratic safe races and Republican safe races, we see that the concentration is mostly driven by the former. Thus, the identity of the Democratic candidate appears more relevant to small donors.

### 3.2.4 Additional results and robustness checks

In this section, we present several additional results and perform a number of robustness checks. We briefly describe them here; the detailed results for these tests are available in Appendix F.

Figure 9: The concentration of contributors: Herfindahl-Hirschman Index of contributors, General elections, Democratic candidates, 2014-2020



**Notes:** The figure plots the Herfindahl-Hirschman Index of concentration of in-district and out-of-district contributors, for different deciles of donors grouped based on the maximum total contributions they make to a candidate during an electoral cycle, and for different samples of candidates.

**Primary elections** Until now, the focus of our analysis in this section has been on the donations received by the Democratic candidates in the general elections between 2014 and 2020. We now investigate whether the donation patterns are similar for the primaries. This is particularly important given that we estimate that 78% of large donors and 68% of small donors give to the primary elections (compared to respectively 63% and 58% for general elections).

Tables 7 and 8 present the results of the estimation of equation 6 in primary elections, for the extensive margin and the intensive margin respectively.<sup>45</sup> There are two key differences with the previous results. First, rather than considering the donations made by contributors during the general elections, we consider the donations made during the primaries. Second, we include two new variables in the vector of seat/candidate characteristics,  $\mathbf{X}_{ct}$ : (i) the closeness of the primary, and (ii) whether the candidate is one of the top-two vote getters in the primary.

Overall, the patterns we observe are broadly consistent with the ones documented for the general elections, with a few noteworthy differences. First, regarding the closeness of the elections, we find that the closeness of the general election matters even for primary contributions but that the closeness of the primary does not. This is true both for small and large donors (except for small donors on the intensive margin). One possible explanation for the non-significant coefficient on closeness of the primary is that there are very few close primaries in our sample. Second, in primary elections,

<sup>45</sup>For now, we only use a random sample of 5% of the observations in our dataset for these regressions.

Table 7: The determinants of campaign donations: Extensive Margin, Primary elections, Democratic candidates, 2014-2020

	Large			Small		
	(1)	(2)	(3)	(4)	(5)	(6)
Close Seat	0.261* (0.107)	0.265* (0.108)		0.243* (0.105)	0.246* (0.107)	
Safe Republican Seat	0.056 (0.084)	0.061 (0.085)		0.140 (0.084)	0.144 (0.086)	
Close Primary Seat	0.093 (0.078)	0.093 (0.078)		0.076 (0.064)	0.077 (0.064)	
Incumbent Candidate	0.188* (0.092)	0.189* (0.092)		0.114 (0.106)	0.115 (0.106)	
Top 2 Primary Cand.	0.451*** (0.057)	0.451*** (0.057)		0.369*** (0.048)	0.369*** (0.048)	
In Same State	1.002*** (0.068)	1.034*** (0.078)	0.993*** (0.060)	0.506*** (0.047)	0.527*** (0.056)	0.500*** (0.038)
In Same District	11.732*** (2.058)	11.769*** (2.078)	12.002*** (1.772)	9.695*** (1.969)	9.718*** (1.985)	9.838*** (1.726)
Same Gender	0.024** (0.009)	0.048*** (0.012)	0.059*** (0.013)	0.033* (0.016)	0.034 (0.019)	0.020 (0.013)
Same Ethnicity	0.077 (0.045)	0.062 (0.052)	0.203*** (0.022)	0.019 (0.042)	0.006 (0.052)	0.071*** (0.013)
Election Year FE	✓	✓		✓	✓	
State FE	✓	✓		✓	✓	
House/Senate FE	✓	✓		✓	✓	
Contributor FE		✓	✓		✓	✓
Candidate-Year FE			✓			✓
Sample Mean	0.391	0.391	0.387	0.295	0.295	0.293
R-sq	0.029	0.041	0.070	0.023	0.033	0.069
R-sq (within)	0.022	0.023	0.023	0.017	0.017	0.017
Observations	63,506,702	63,506,702	64,574,682	104,016,105	104,016,105	105,111,213

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes, for each contributor who gave during a cycle, all the possible pairs of that cycle. Estimations are performed on a 5% random sample of contributors from our dataset. The dependent variable is a dummy equal to one if the contributor gave to the candidate during the Primary Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

large donors are not only more likely to donate to incumbents than challengers, but they also tend to make larger contributions to incumbents. For small donors, this positive effect is only significant on the intensive margin. This is in line with our interpretation of the negative effect of incumbency on the extensive margin: incumbents raise more funds during the primary election, and challengers during the general election. Third, matching on gender appears to significantly and positively affect the probability that large donors contribute to the campaign of a candidate in the primary election. There is no effect on the intensive margin for large donors, nor on the behavior of small donors. Finally, small and large donors are more likely to the top two candidates by 0.451 percentage points (or 115% of the mean) and 0.369 percentage points (125% of the mean), respectively.<sup>46</sup>

Democratic primary elections often include multiple candidates. This allows us to investigate another potential pattern of contributions highlighted in the conceptual framework: hedging, i.e. the tendency of donors to give to multiple candidates in the same race. In practice, hedging appears to be a very rare phenomenon. We find that only 0.83% of large donors are hedging, a phenomenon even less prevalent among small donors, with only 0.3% of them hedging. Moreover, in about two thirds of all the democratic primaries that took place between 2014 and 2020, there is not even one donor contributing to multiple candidates. Hence, for the sake of readability, in the online Appendix Figure B.24, we plot the share of donors who hedge at Primary elections when there is *at least one hedging donor*. We see that, even in those races, hedging remains a rare phenomenon that is mostly prevalent among large donors.

**Ideology of candidates.** As mentioned in Section 3.1, another potential driver of donors' behavior is the ideology of candidates. A key challenge, however, is to obtain convincing estimates of candidates' positioning for both incumbents and challengers. Indeed, the most widely used measure of candidates' ideology, NOMINATE scores (see, e.g., (McCarty et al., 2006)), is only available for politicians who have held office and cast votes in legislative assemblies. One way to overcome this difficulty is to rely on the common-space campaign finance scores (CFscores) developed by Bonica (2014), which estimate candidates' ideal points based on the pattern of contributions of their donors across races and offices. CFscores are currently available up to the 2018 election cycle only (this is the reason why we did not include them in the main empirical analysis above). They rank candidates on the left-right axis: our sample of democratic candidates spans from -4.355 (Kevin Gaither, IL-15) to 1.381 (Frederick Lavergne, NJ-03).

In Figure 10, we plot the share of all contributors who donate to candidates in the different quintiles of the CFscores distribution in our sample. There is one panel for each electoral cycle. We see that both small and large donors contribute substantially more to more progressive candidates, i.e., those

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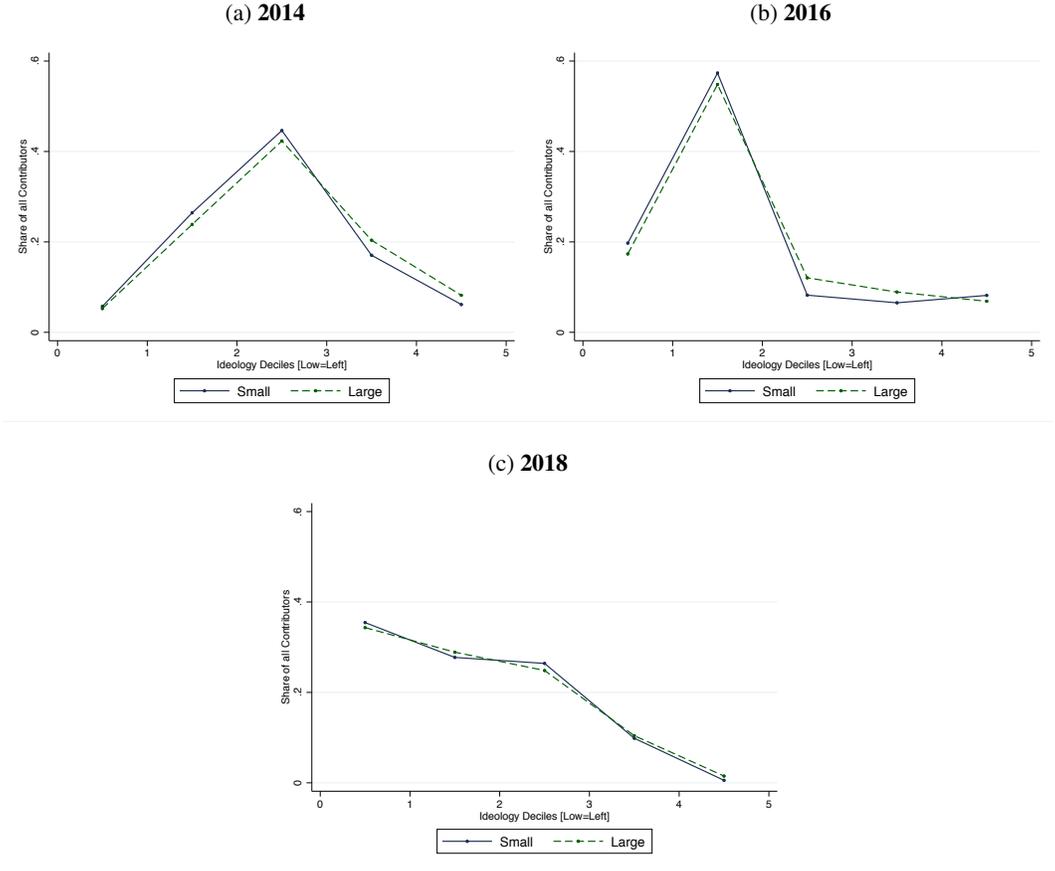
<sup>46</sup>This last result should be interpreted with caution. Being one of the top-two candidates is indeed an ex-post outcome, defined after the primary elections took place. Hence it might be a result of the spending advantage of the top-two candidates compared to the others, and thus driven by the share of donors attracted by these candidates and not by their strategic behavior. In other words, this descriptive results is partly endogenous (one solution would be to have survey data before the beginning of the campaign, but unfortunately such data is not available).

Table 8: The determinants of campaign donations: Intensive Margin, Primary elections, Democratic candidates, 2014-2020

	Large			Small		
	(1)	(2)	(3)	(4)	(5)	(6)
Close Seat	-0.279** (0.090)	-0.167* (0.080)		-0.406*** (0.101)	-0.147** (0.054)	
Safe Republican Seat	-0.469*** (0.128)	-0.141 (0.091)		-0.279* (0.123)	-0.093 (0.056)	
Close Primary Seat	-0.201 (0.120)	-0.098 (0.068)		-0.316** (0.107)	-0.101* (0.041)	
Incumbent Candidate	0.337*** (0.095)	0.214** (0.066)		0.256* (0.113)	0.197** (0.061)	
Top 2 Primary Cand.	-1.015*** (0.173)	-0.074 (0.091)		-0.808*** (0.137)	-0.085 (0.065)	
In Same State	1.917*** (0.074)	0.711*** (0.039)	0.734*** (0.037)	0.972*** (0.062)	0.361*** (0.029)	0.354*** (0.028)
In Same District	0.345*** (0.081)	0.660*** (0.058)	0.778*** (0.054)	0.427*** (0.085)	0.592*** (0.046)	0.678*** (0.042)
Same Gender	0.184*** (0.031)	0.001 (0.011)	0.004 (0.007)	0.020 (0.019)	-0.006 (0.008)	0.003 (0.005)
Same Ethnicity	0.270** (0.090)	0.105 (0.068)	0.091*** (0.019)	0.166* (0.074)	0.078* (0.038)	0.058*** (0.011)
Election Year FE	✓	✓		✓	✓	
State FE	✓	✓		✓	✓	
House/Senate FE	✓	✓		✓	✓	
Contributor FE		✓	✓		✓	✓
Candidate-Year FE			✓			✓
Sample Mean	4.267	3.851	3.858	2.718	2.279	2.279
R-sq	0.260	0.798	0.826	0.296	0.776	0.807
R-sq (within)	0.221	0.103	0.112	0.206	0.099	0.099
Observations	248,318	194,836	196,094	307,126	208,727	209,156

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes all pairs for which we observe non-zero contributions. Estimations are performed on a 5% random sample of contributors from our dataset. The dependent variable is the inverse hyperbolic sine transformation of the total amounts from the contributor to the candidate during the Primary Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Figure 10: The determinants of campaign donations: Ideology, General elections, Democratic candidates, 2014-2018



**Notes:** The figure represents, for each electoral cycle between 2012 and 2018, the share of small and large donors contributions going to candidates grouped by quintiles of CFscores ideology estimates.

on the left of the median Democratic candidate, and there seems to have been a stark shift to the left over the last three election cycles.

To further understand the effect of ideology on the behavior of donors, we include CFscores in our main regressions. Tables 9 and 10 present the results of the estimation of equation (6), for the extensive margin and the intensive margin respectively, with one key difference: we include both the CFscores and the CFscores squared as independent variables. First, it is reassuring that the results discussed above remain stable when we include the ideology of the candidates. Second, we see that both small and large donors are more likely to give to more progressive candidates (the coefficient on Ideology Score is negative). However, this effects disappears, and even becomes negative, for the most progressive candidates (the coefficient on Ideology Score squared is also negative). Third, from the intensive margin regressions, we see that large donors also tend to give more to more progressive candidates. The effect is similar but not statistically significant for small donors. Note that a possible explanation for the change of sign of the coefficient on Ideology Score when we include contributor

Table 9: The determinants of campaign donations: Ideology, Extensive Margins, General elections, Democratic candidates, 2014-2018

	Large		Small	
	(1)	(2)	(4)	(5)
Close Seat	0.454** (0.154)	0.461** (0.155)	0.260 (0.260)	0.266 (0.266)
Safe Republican Seat	-0.271 (0.221)	-0.262 (0.221)	-0.359 (0.212)	-0.353 (0.212)
Incumbent Candidate	-0.511* (0.216)	-0.509* (0.216)	-0.598** (0.224)	-0.597** (0.225)
In Same State	1.819*** (0.166)	1.781*** (0.163)	1.038*** (0.124)	1.022*** (0.121)
In Same District	25.776*** (1.993)	25.843*** (2.011)	20.574*** (1.789)	20.609*** (1.803)
Same Gender	0.040** (0.015)	0.065*** (0.020)	0.044 (0.023)	0.041 (0.027)
Same Ethnicity	-0.021 (0.092)	-0.055 (0.110)	-0.043 (0.075)	-0.072 (0.093)
Ideology Score	-0.762*** (0.197)	-0.765*** (0.197)	-0.639*** (0.186)	-0.642*** (0.186)
Ideology Score Sq.	-0.173*** (0.041)	-0.174*** (0.041)	-0.139*** (0.040)	-0.139*** (0.040)
Election Year FE	✓	✓	✓	✓
State FE	✓	✓	✓	✓
House/Senate FE	✓	✓	✓	✓
Contributor FE		✓		✓
Seat-Year FE				
Sample Mean	0.751	0.751	0.589	0.589
R-sq	0.060	0.079	0.052	0.064
R-sq (within)	0.041	0.042	0.032	0.032
Observations	231,402,012	231,402,012	425,709,699	425,709,699

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes, for each contributor who gave during a cycle, all the possible pairs of that cycle. The dependent variable is a dummy equal to one if the contributor gave to the candidate during the Primary Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

fixed effects is that, on average, less progressive donors give more than more progressive ones. This could happen if, e.g., less progressive donors are richer. These results are suggestive of a role of donors in the polarization of U.S. politics in recent years.

## 4 Political ads and small contributions

The correlation between small and large contributions, on the one hand, and the determinants investigated in Section 3, on the other hand, 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 simply ensue from them receiving more information from candidates and more requests to donate in such races. Of course, pull

Table 10: Ideology: Intensive Margins, General elections, Democratic candidates, 2014-2018

	Large		Small	
	(1)	(2)	(4)	(6)
Close Seat	-0.042 (0.095)	-0.018 (0.075)	-0.155 (0.108)	-0.050 (0.061)
Safe Republican Seat	0.013 (0.125)	0.018 (0.083)	0.003 (0.139)	0.006 (0.066)
Incumbent Candidate	-0.004 (0.092)	0.256*** (0.058)	0.199* (0.083)	0.193*** (0.047)
In Same State	1.630*** (0.070)	0.743*** (0.039)	1.027*** (0.058)	0.461*** (0.032)
In Same District	0.417*** (0.074)	0.695*** (0.050)	0.425*** (0.069)	0.550*** (0.040)
Same Gender	0.058 (0.036)	-0.005 (0.007)	-0.001 (0.021)	-0.002 (0.006)
Same Ethnicity	0.147* (0.072)	0.060 (0.064)	0.049 (0.059)	0.016 (0.045)
Ideology Score	1.211** (0.383)	-0.780** (0.286)	0.035 (0.288)	-0.298 (0.191)
Ideology Score Sq.	0.244 (0.142)	-0.153 (0.097)	0.133 (0.102)	-0.025 (0.065)
Election Year FE	✓	✓	✓	✓
State FE	✓	✓	✓	✓
House/Senate FE	✓	✓	✓	✓
Contributor FE		✓		✓
Seat-Year FE				
Sample Mean	4.205	3.928	2.907	2.644
R-sq	0.220	0.779	0.244	0.784
R-sq (within)	0.182	0.107	0.177	0.096
Observations	1,738,184	1,475,999	2,506,956	1,934,335

**Notes:** Models are estimated using OLS. The time period is 2014-2020. An observation is a candidate-contributor pair at each electoral cycle. The sample includes all pairs for which we observe non-zero contributions. The dependent variable is the inverse hyperbolic sine transformation of the total amounts from the contributor to the candidate during the Primary Election. Standard errors are shown in parentheses and clustered at the candidate and contributor levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

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), Gerber and Green (2019), Braconnier et al. (2017)) and that their intensity varies with race closeness, among other dimensions.

To investigate the effect of pull factors on contributions, we focus on TV ads. In the U.S., political advertising accounts for a large fraction of all candidate expenses (55 percent in 2020, according to Opensecrets.org), and the vast majority of candidates' advertising expenditures still go to TV ads. For instance, Ridout et al. (2021) report that 74 percent of 2020 presidential ad spending went to TV ads, against 24 percent for digital ads and 2 percent for radio ads. Ashworth and Clinton (2007), Krasno and Green (2008), and Gerber et al. (2011) find that the effects of such 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 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. In addition to helping us understand why small and large donors contribute to campaigns, estimating the dollar returns of money spent by candidates on TV ads will reveal whether, beyond mobilizing voters, this form of campaign communication can generate financial returns and partly cover its own cost.<sup>47</sup>

## 4.1 Empirical strategy

Our identification strategy is entirely 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 media companies local broadcast rights for media markets 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 percent 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. PerezTrugliaetal2021

Formally, we estimate the effects of TV political ads by restricting the sample to pairs of neighboring

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<sup>47</sup>Perez-Truglia et al. (2021) also uses Spenkuch and Toniatti (2018) design to measure the impact of TV ads on donations, but with a different focus: investigating the substitutability between political and charitable giving.

counties in different media markets, and using specifications of the following form:

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

where  $Y_{c(p)t}$  is the outcome 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 1 for the two counties sharing a common border,  $\mathbf{X}_{ct}$  is a set 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>48</sup> and  $\alpha_c$  is a county fixed effect. 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.<sup>49</sup> 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 county.

The number of TV political ads aired in each county is measured over the 60 days leading up to the election (as in Spenkuch and Toniatti (2018)), 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 diffused 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).<sup>50</sup> In media markets overlapping multiple congressional districts, people receive ads promoting candidates of their constituency ("*local*" ads) as well as ads promoting candidates of neighboring constituencies. We focus on local ads in our main specification,<sup>51</sup> and show that our results are robust to using all ads. Online Appendix Table C.2 provides summary statistics on these different types of ads. Overall, in our sample of border county pairs, people receive 1,700 ads supporting presidential candidates, 2,400 ads for Senate candidates and 1,700 ads for House candidates. When focusing on local ads, the numbers of ads supporting Senate and House candidates are 1,900 and 300.

Finally, we cluster standard errors two-way, by state and by media market border, to account for correlation of the residuals across counties of the same state and across neighboring border-counties.

<sup>48</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>49</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.

<sup>50</sup>In the next iteration of the paper, we plan to also combine these ad broadcasts data with detailed viewership information provided by the Nielsen Company, if possible, in order to compute the number of impressions per capita. Indeed, this alternative definition of the independent variable may be a better measure of the number of political ads that people actually see, and Spenkuch and Toniatti (2018) use it in their main specifications.

<sup>51</sup>In these cases, the *OtherAds<sub>ct</sub>* variable also include non-local ads of the same office.

## 4.2 Effects on turnout and vote shares

We first replicate the results included in Spenkuch and Toniatti (2018) in our sample. While Spenkuch and Toniatti (2018) measure effects of TV ads on the results of the 2004, 2008, and 2012 presidential elections, we consider the 2012 and 2016 presidential elections, corresponding to our sample period.<sup>52</sup> As shown in Table 11, Panel A, we do not find any significant effect of TV ads on aggregate turnout (columns 1 to 3), which corresponds to the result in Spenkuch and Toniatti (2018). However, the difference between the number of Democratic and Republican ads increases the difference between the vote share of the Democratic and Republican candidates (columns 4 to 6).

This effect is positive in 2012 and 2016, but it is only statistically significant in 2012. Averaged over both years, an increase in the number of Democratic ads by 1,000, relative to Republican candidates, increases the difference in vote shares by 1.1 percentage points. 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.

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 2018. 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 percent 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. Our main specification, shown in Table 11, Panel B, pools 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 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 races). We use TV ads for the House or Senate race of interest as independent variable and exclude ads targeting other House and Senate races which voters in the county may receive due for instance to the county's media market spanning multiple constituencies. Ads aired in other races are included in the OtherAds total.

Once again, we do not measure any significant impact on voter turnout, on average. However, the effects on vote shares are large and significant. An increase in the difference between the number of ads aired by Democratic and Republican candidates by 1,000 increases the difference between the Democratic and Republican vote shares by 0.93 percentage points on average, in the four Senatorial and House elections between 2012 and 2018. Effects on vote shares are close in magnitude in Senatorial and House elections, but only significant in Senate elections, as shown in Appendix Table C.3. These results are qualitatively similar to those reported by SIDES et al. (2021) for the 2000-2018

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<sup>52</sup>For detailed information on the sources of data used to measure electoral outcomes and covariates, see Spenkuch and Toniatti (2018). Electoral results for the presidential and Senate races come from the CQ Voting and Elections Collection. Results for the House races comes from the Leip Election Atlas. We do not include the 2020 presidential election because the 2020 ad data will only be available after the 2022 elections.

Table 11: Effects of TV ads on electoral outcomes

(a) Presidential elections						
	Turnout			Dem-Rep Votes		
	(1) 2012	(2) 2016	(3) 2012-2016	(4) 2012	(5) 2016	(6) 2012-2016
All Parties Ads (Total number, in 1000s)	0.04 (0.03)	0.04 (0.04)	-0.02 (0.02)			
Dem-Rep Difference in Ads				0.33*** (0.09)	0.10 (0.13)	0.11 (0.11)
County-Pair x Year FE	✓	✓	✓	✓	✓	✓
County FE			✓			✓
Controls	✓	✓	✓	✓	✓	✓
Lagged Dep.	✓	✓		✓	✓	
R-sq (within)	0.847	0.822	0.016	0.968	0.958	0.147
Observations	5,058	5,058	10,116	5,058	5,058	10,116
Clusters	450+46	450+46	450+46	450+46	450+46	450+46
Mean DepVar	55.46	54.99	55.23	-23.34	-36.40	-29.87

(b) Congressional elections										
	Turnout					Dem-Rep Votes				
	(1) 2012	(2) 2014	(3) 2016	(4) 2018	(5) 2012-2018	(6) 2012	(7) 2014	(8) 2016	(9) 2018	(10) 2012-2018
All Parties Local Ads (Total number, in 1000s)	0.07 (0.09)	0.09*** (0.03)	0.01 (0.02)	0.05*** (0.02)	0.04 (0.02)					
Dem-Rep Difference in Local Ads						0.56 (0.56)	1.30*** (0.43)	0.99*** (0.33)	0.39 (0.23)	0.93*** (0.20)
County-Pair x Year x Office FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
County x Office FE					✓					✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lagged Dep.	✓	✓	✓	✓		✓	✓	✓	✓	
R-sq (within)	0.628	0.684	0.737	0.790	0.022	0.611	0.776	0.762	0.839	0.020
Observations	6,038	6,384	6,274	5,912	24,564	6,038	6,382	6,274	5,912	24,562
Clusters	440+46	412+44	439+44	427+42	450+46	440+46	412+44	439+44	427+42	450+46
Mean DepVar	53.46	35.06	48.68	45.23	45.48	-23.16	-32.69	-35.51	-27.29	-29.74

**Notes:** Models are estimated using OLS. An observation is a county x election cycle x office type. In Panel a, the sample includes all county-pairs in the 2012 and 2016 presidential elections. In Panel b, we combine House and Senate races for the 2012 to 2018 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. In columns (1) to (3), the dependent variable is turnout; in columns (4) to (6), the difference between the Democratic and Republican candidate's vote shares. Controls include all other political ads aired in the county (for presidential elections, these are House, Senate, governor and other down-ballot races' ads; for senatorial elections, presidential, House, non-local Senate, governor and other down-ballot races' ads; and for House elections, presidential, Senate, non-local House, governor and other down-ballot races' ads), measured in the same way as the main dependent variable (the sum of all parties ads in columns (1) to (3), and the difference between Democratic and Republican ads in columns (4) to (6)), together with a set of socio-demographic characteristics of the county (total population, share of high-school dropouts, share of college graduates, share of ethnic minority population, share of foreign born population, media household income, share of population below poverty level and employment-to-population ratio). Single-cycle estimations (columns (1),(2),(4) and (5) in Panel a, and columns (1) to (4) and (6) to (9) in Panel b) include the value of the dependent variable in the previous election cycle ("lagged") as a control. Standard errors are shown in parentheses and clustered at the state and media market border levels. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

congressional races.

Put together, the estimates in Panels A and B of Table 1 corroborate SIDES et al. (2021)'s conclusion that TV ads have larger effects on electoral outcomes in down-ballot elections than in presidential elections. We now turn to our main outcome of interest, contributions, and ask whether the effects of TV ads on this outcome are also larger in House and Senate elections. In addition, we measure the effects of TV ads separately on small and large contributions to determine whether one type of donors is more responsive to this pull factor.

### 4.3 Effects on contributions

Since our data on small contributions prior to 2020 come exclusively 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 but spots by their Republican rivals have the opposite effect.<sup>53</sup> The inclusion of Democratic and Republican ads as distinct independent variables makes this specification slightly different from the specification above, which, following Spenkuch and Toniatti (2018), regressed the *difference* between the Democratic and Republican vote shares on the *difference* between the number of Democrat and Republican ads.

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 outcome reflects effects both on the extensive and on the intensive margins. We consider all the people who contributed at least once in the last 60 days before the election, corresponding to the period over which we count the number of ads, and the contributions they made during that time. As in Section 3, we only take contributions to candidates into account, disregarding donations to committees for which one cannot unambiguously attribute a single candidate. Like with political ads, we differentiate between "all" and "local" contributors (contributions), the latter being all contributors (contributions) for the candidate running in the district(s) to which the county belongs, and the former counting contributors (contributions) to *any* Democratic candidate, including candidates in neighboring districts. Online Appendix Table C.2 provides summary statistics on these different totals of contributors and contributions.

Table 12, Panel A reports the effects for the 2012 and 2016 presidential elections. We observe a positive and significant impact of Democratic ads on the number of contributors and a negative impact of Republican ads, which is non-significant and of slightly lower magnitude (column 1).<sup>54</sup> The

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<sup>53</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>54</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.

effects are almost entirely driven by large donors, which is not surprising given the very small share of small contributions to Democratic candidates in presidential elections that we observe in 2012 (since Barack Obama did not use ActBlue to channel small contributions) and 2016 (since Hillary Clinton allowed small donors to give to her campaign through multiple channels, including, but not limited to ActBlue, and she received a limited number of small contributions). In fact, the mean number of small contributors per county is much smaller than the mean number of large contributors (0.5 against 8.2). The effects of Democratic and Republican ads on the overall amounts of contributions are also positive and negative, respectively, but they are less precisely estimated because that outcome is much noisier.

Table 12, Panel B, turns to the effects of TV ads in down-ballot races. As in Table 11, Panel B, we pool Senate and House races in our baseline specification and we report the effects of TV ads targeting a particular race on outcomes (here, donors and donations) in that race.<sup>55</sup> Similarly as for presidential elections, Democratic and Republican ads have effects of opposite signs on the number of people contributing to the Democratic candidate (column 1) and on their total contributions (column 4), the effect of Democratic ads is larger, and effects on the number of contributors are estimated more precisely than effects on contribution amounts. An increase in Democratic ads by 1,000 (corresponding to half the mean number of Senate local ads and four times the mean number of House local ads) increases the number of contributors per 10k inhabitants by 0.45, which corresponds to 12 percent of the mean. This effect is larger than the effect of Democratic presidential ads on the number of people contributing to the presidential candidate shown in Panel A (0.38, or 4 percent of the mean). In addition, while presidential ads mostly affect the number of large donors, the opposite is true for House and Senate ads: the effects of Democratic and Republican ads on the number of small donors are significant at the 1 and 5 percent levels, respectively, and they amount to 15 and 10 percent of the mean, contrasting with the non-significant and smaller effects (8 and 1 percent) on large donors (columns 2 and 3). Similarly, the effects on total contribution amounts are only statistically significant (at the 10 percent level) and larger (as a fraction of the mean) for small donors than for large donors (columns 5 and 6). One possible interpretation for the fact that small donors are more responsive to TV ads than large donors is that their baseline level of political information is lower, particularly when it comes to down-ballot races, making the information conveyed in the ads more impactful. A complementary interpretation is that unlike small donors, large donors receive personalized requests to contribute, which further decreases the scope for undifferentiated TV ads to affect their behavior.

We complement the estimates of political TV ads effects in down-ballot races in two ways. First, Appendix Table C.4 shows the effects of TV ads separately in Senate and House races (Panels A and B). Effects of Democratic ads on the number of contributors and the amount of contributions are positive,

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<sup>55</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 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. When we estimated effects on electoral outcomes, voter turnout and the difference between the Democratic and Republican vote share are averaged over the two races.

Table 12: Effects of TV ads on campaign contributions

## (a) Presidential elections

	Contributors			Contributions		
	(1) All	(2) Large	(3) Small	(4) All	(5) Large	(6) Small
Democratic Ads (Total number, in 1000s)	0.38** (0.17)	0.39** (0.18)	-0.01 (0.03)	62.10 (81.85)	62.59 (81.76)	-0.49 (0.56)
Republican Ads	-0.24 (0.16)	-0.25 (0.16)	0.01 (0.03)	242.33 (274.97)	242.37 (274.92)	-0.03 (0.55)
County-Pair x Year FE	✓	✓	✓	✓	✓	✓
County FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
R-sq (within)	0.052	0.055	0.035	0.028	0.028	0.029
Observations	10,116	10,116	10,116	10,116	10,116	10,116
Clusters	450+46	450+46	450+46	450+46	450+46	450+46
Mean DepVar	8.69	8.20	0.48	1,349.91	1,339.55	10.36

## (b) Congressional elections

	Contributors			Contributions		
	(1) All	(2) Large	(3) Small	(4) All	(5) Large	(6) Small
Local Democratic Ads (Total number, in 1000s)	0.45** (0.18)	0.13 (0.11)	0.32*** (0.12)	48.09 (41.48)	37.50 (40.28)	10.59* (6.29)
Local Republican Ads	-0.22 (0.15)	0.01 (0.10)	-0.23** (0.11)	-20.89 (34.48)	-11.80 (33.14)	-9.10* (5.41)
County-Pair x Year x Office FE	✓	✓	✓	✓	✓	✓
County x Office FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
R-sq (within)	0.016	0.010	0.020	0.002	0.002	0.014
Observations	24,600	24,600	24,600	24,600	24,600	24,600
Clusters	450+46	450+46	450+46	450+46	450+46	450+46
Mean DepVar	3.93	1.70	2.23	410.52	338.00	72.52

**Notes:** Models are estimated using OLS. An observation is a county x election cycle x office type. In Panel a, the sample includes all county-pairs in the 2012 and 2016 presidential elections. In Panel b, we combine House and Senate races for the 2012 to 2018 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 local contributions only (i.e. those made to the Democratic candidate running in the county). In columns (1) to (3), it is the number of unique contributors over the last 60 days of the election, per 10,000 inhabitants in the county; in columns (4) to (6), it is the total dollar amount of contributions over the last 60 days of the election, per 10,000 inhabitants in the county. Controls include all other political ads aired in the county (for presidential elections, these are House, Senate, governor and other down-ballot races' ads; for senatorial elections, presidential, House, non-local Senate, governor and other down-ballot races' ads; and for House elections, presidential, Senate, non-local 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 of the county (total population, share of high-school dropouts, share of college graduates, share of ethnic minority population, share of foreign born population, media household income, share of population below poverty level and employment-to-population ratio). Standard errors are shown in parentheses and clustered at the state and media market border levels. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

and effects of Republican ads on these two outcomes are negative in both types of races. Still, the results in Table 12, Panel B are primarily driven by Senate races, where effects of TV ads as a fraction of the mean on the number of contributors and on total contributions are much larger for small than large donors. If anything, we observe the opposite pattern for House races, but the effects are much less precisely estimated due to a volume of TV ads that is both much lower and much more variable.

Second, 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. Local ads may also prompt contributions to out-of-district and out-of-state races because they also inform people about the overall election. Accordingly, Appendix Table C.5 checks the robustness of our results to an alternative specification, measuring the effects of TV ads aired in the county for *all* House and Senate races on contributions to *all* races by county's residents, instead of restricting the definition of the dependent and independent variables to the local race. We observe similar overall effects (Panel A), with effects on large donors that are slightly larger and effects on small donors slightly smaller than in Table 12. Effects in Senate races are consistent but less precisely estimated and non-significant (Panel B), while effects in House races are more precisely estimated and do not show any stark difference between small and large donors (Panel C).

Using the point estimates in Appendix Table C.5, we can estimate the dollar returns of money spent by candidates on TV ads. On average, in border counties, an additional 1,000 ads increase contributions by 9% of the mean of all county contributions to congressional races (60.6 divided by 673.8 in column (4) of Panel A). But the mean number of ads paid by candidates in a media market over an entire cycle is 2,200, on average, between 2012 and 2018. Therefore, TV ads increase total contributions from individuals to congressional races by about 20% in border counties. If we multiply this fraction by the average total amount of such contributions across the country per election cycle, 658 million dollars, we obtain that ads triggered approximately 132 million of contributions, which corresponds to nearly half of their total estimated cost of 268 million. 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 as a percentage of the mean contribution amounts are similar in border-counties in the last 60 days before the election, and in other counties throughout the election cycle.

**Ads and contributions over time.** While electoral outcomes are only observed once, on Election Day, the number of contributors and amount of contributions can be traced throughout the campaign. We take advantage of this special feature to use an alternative definition of our treatment and outcomes at the monthly level, and expand the sampling period to go back to ten months before the election and also include the primary elections. We replace county-pair-by-year fixed effects with county-pair-by-month fixed effects. This specification further weakens our identification assumption since it exploits deviations from the mean in one county and *in one specific month* relative to deviations from

the respective mean in the neighboring county in that month. On the other hand, the corresponding estimates are noisier because our outcomes vary more on a monthly level than summed over the entire campaign, as would be expected. In addition, the effects should be interpreted with caution, because TV ads aired in a specific month may appear to increase contributions even if they just changed the timing of contributions which would otherwise have been made later in the campaign, leaving the total amount unchanged.<sup>56</sup>

The results are displayed in Appendix Table C.6 . The effects are qualitatively similar as in the main specification (Table 2). If anything, the point estimates are even larger, as a share of the mean, albeit less precisely estimated. For instance, Democratic ads increase the number of small donors by 26 percent (as compared to the 15 percent increase in the baseline results in Table 2) and Republican ads decrease it by 20 percent (as compared to 10 percent). Importantly, we obtain very similar point estimates when we control for the number of Democratic and Republican ads in the previous month, to ensure that our effects do not capture the delayed impact of previous ads (Appendix Table C.7 ).

Incorporating out-of-district ads and contributions in the analysis, like in Appendix Table C.5, also yields consistent results (Appendix Table C.8 ).

## 5 Conclusion

In this paper, we studied the characteristics and the behavior of small donors, and compared them to large donors. We relied on a growing feature of U.S. political fundraising – the use of conduits, such as ActBlue –, to build a dataset including more than 30 million unique donors and 340 million contributions. A key novelty is that we observe contribution-level information, including their exact timing and amount as well as donors’ name, address, and occupation, for a vast majority of both large and small contributions. For the electoral cycles covered by our data set, 2006 to 2020, we have such contribution-level data for more than 92% of the amounts received by all candidates. We use this information to create unique donor identifiers, and differentiate “large” and “small” donors based on their total contributions. In our dataset, more than 15 million of donors are small donors. We also use this information to obtain the gender, ethnicity, and geo-localisation of each donor. Building this dataset is our first contribution.

This new dataset allows us to produce five main results. First, we provide novel evidence on the growing number of small donors in the U.S. and on the magnitude of their contributions. Second, we show that small donors include more women and more minorities than large donors, with minorities still under-represented, but that small and large donors do not differ much in terms of their geographical distribution. Third, we find that small and large donors differ both in terms of which races they contribute to and the timing of their contributions. Fourth, we explore the determinants of contributions

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<sup>56</sup>This concern would be even stronger if we ran the analysis at the week level instead of the month level. Weekly observations would also contain many more 0s, which could decrease our ability to detect effects. Therefore, we do not use a finer level of analysis than the month.

by small and large donors using a saturated fixed effects model. We find that the closeness of the race, whether the candidate and the donor live in the same district or state, and, to a lesser extent, the ethnic alignment between the donor and the candidate have a large and positive impact on contributions. Furthermore, donors are more likely to contribute to more extreme candidates, and they donate more money to these candidates. All these effects are lower for small donors. Finally, we extend Spenkuch and Toniatti (2018)'s border discontinuity design to investigate the impact of one pull factor, campaign TV ads, on the behavior of donors. We find that TV ads affect the number and the size of contributions, and more so for small donors, suggesting that pull factors are important to explain donors' behavior.

Our findings highlight fundamental differences between the characteristics and contribution patterns of small and large donors. They also suggest that the expressive motive is particularly relevant to understand small donors' behavior. Indeed, while few patterns of contributions are really distinctive of one motive versus the others, the patterns of contribution of small donors are more easily explained with an expressive motive framework. First, a substantial share (about 40%) of small donors' contributions flow to safe races (i.e., to sure winners or sure losers), and the closeness of the race only has a moderate impact on their behavior. Such contribution patterns would be difficult to explain with electoral motive or influence motive frameworks. Second, small donors appear especially attracted by safe races which gain national prominence because they involve Democratic candidates who are leaders of the party or of one of its sub-groups, or Republican candidates who are one of the nemeses of the Democratic party. Such clear and dramatic confrontations between Democrats and Republicans or progressives and conservatives are particularly appropriate for donors to express and signal their beliefs and preferences. Third, independently of the closeness of the race, small Democratic donors tend to contribute to more progressive candidates. Again, contributions to such candidates are ideal to express and signal one's preferences.

While we provide groundbreaking evidence on small donors, our paper leaves many questions unanswered. Our results shed light on the determinants of small donors' contributions, once they enter the sample, but what explains the dramatic increase in the number of such donors over time? In particular, can the creation of ActBlue and WinRed explain this pattern, or have these conduits only channeled (and made visible) donations which would have taken place regardless? Furthermore, one should study the effects of small contributions to complement the evidence we provide on their determinants. Do small and large campaign contributions affect electoral outcomes differently? Have candidates changed their behavior in response to the recent surge in small contributions, and have these contributions fueled the recent polarization of U.S. politics and their nationalization? We hope that our new dataset and the first results shown in this paper will help researchers address these important questions.

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