Political Advertising by Special Interest Groups and Voter Participation: The Effects of Less Restrictive Campaign Finance Rules Following *Citizens United*

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Abstract

This paper explores the consequences of the US Supreme Court's *Citizens United* decision in 2010, which lifted previous bans on independent campaign support from corporations, unions, and ideological groups. The empirical strategy exploits that about three fifths of US states had no pre-*Citizens United* prohibition on such independent spending, serving as a control group in a difference-in-differences research design. Based on information about broadcast political advertising for relevant gubernatorial elections at the state level in local US television, the evidence found suggests that, contrary to expectations, there has been no increase in overall advertising as well as no higher proportion of advertising supporting Republican candidates. There is a strong and significant effect on the composition of advertising towards a higher proportion of special interest group-funded advertising (vs. candidate/party advertising) and a higher proportion of negative advertising. Finally, the paper studies the electoral consequences of this shift. Using survey data from the Cooperative Congressional Election Study (CCES), the results show a demobilizing effect as well as a strong pro-Republican effect in gubernatorial elections, amounting to about 7% and 20-30% of the respective means. Interestingly, both effects are primarily driven by citizens with lower levels of education.

Keywords: campaign finance, Citizens United v. FEC, independent expenditures, voter turnout, television markets, special interest groups

JEL classification: D72, K16, L82

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1 Introduction

The ability to spend unlimited amounts of money in politics is seen by many as critical because it could undermine the functioning of representative democracy. It could, for example, create or strengthen exchange relationships between politicians and special interest donors (reflected in its strongest form in the exchange of political favors against campaign support), limit access to politics to rich vis-à-vis average citizens, reduce political competition by increasing the advantage that incumbents (with better ties to campaign donors) have over challengers, and discourage voters from participating in politics as they might increasingly perceive the political system as one where only money matters. Campaign finance rules are therefore key institutions whose design affects the democratic process and the quality of political representation.

In the US, the campaign finance system is almost entirely based on private donations from individuals and special interest groups. In general, there are two types of political spending. First, campaign donations made to candidates and parties (who then use them to fund their political campaigns), and, second, independent spending, that is, when political campaigns are funded directly, without going through candidates or parties first.

With its 2010 decision in *Citizens United v. FEC*[1], the US Supreme Court triggered a liberalization of the campaign finance system, ruling that independent political spending by corporations, unions and ideological groups could no longer be forbidden (previously banned at the US federal level and in many states).[2] This decision led to a sharp increase in independent campaign support at the federal level, as visualized in Figure 1, where independent spending is related to political expenditures by candidates and parties themselves in Panel (a), and as reflected in the percentage of campaign advertising on television sponsored by special interest groups in Panel (b).

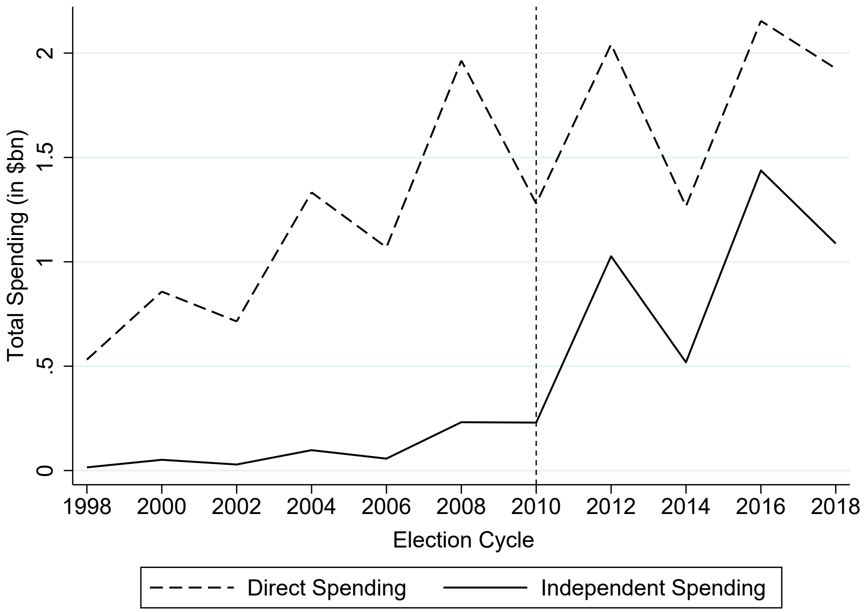
This paper investigates the extent to which the change in the US campaign finance landscape towards more opportunities for special interest groups to engage in independent political spending has actually affected the US political process. In particular, the study examines the impact that the lifting of independent expenditure bans had on broadcast campaign advertising on television as well as on voter behavior. Although the identification strategy does not allow conclusions about the effect that *Citizens United* had at the federal level, the causal effects resulting from the removal of independent expenditure bans at the US state level can be identified using a difference-in-differences approach. Specifically, the empirical strategy exploits the fact that certain states did not ban such political spending before *Citizens United*, and only about two fifths of US states had to adjust their regulations as a result of the Supreme Court's decision.

[1]The Federal Election Commission, or FEC for short, is the US agency that regulates campaign finance in federal elections.

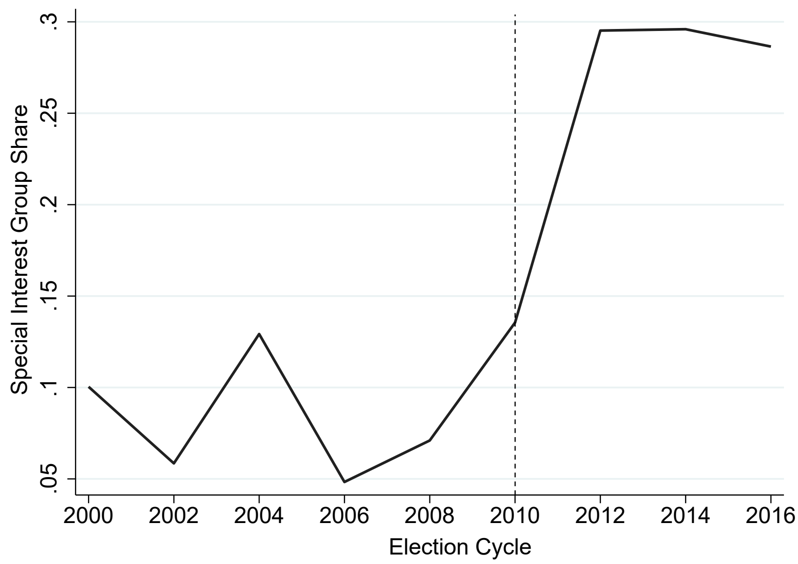
[2]While the decision was based on the idea that it would promote freedom of speech, Justice John Paul Stevens, in the dissenting opinion on *Citizens United*, raised serious concerns about a potential influence motive in independent campaign expenditures by special interest groups, and stating that "a democracy cannot function effectively when its constituent members believe laws are being bought and sold." He also notes that the decision "threatens to undermine the integrity of elected institutions across the Nation. The path it has taken to reach its outcome will, I fear, do damage to this institution." The majority as well as the dissenting opinion can be retrieved from the Google doc here: https://scholar.google.co.uk/scholar_case?case=14627663605033036164&hl=de&as_sdt=2005&sciodt=0,5.

Figure 1: Development of independent campaign support
before and after the 2010 *Citizens United* decision

(a) Independent vs. direct campaign spending (1998-2018)



(b) Share of campaign ads sponsored by special interest groups (2000-2016)



Notes: Panel (a): *Total Direct Spending* is the sum of all direct campaign contributions to candidates for the US presidency and for seats in the US Congress (Senate and House of Representatives). *Total Independent Spending* is the sum of all independent campaign expenditures (excluding party expenditures) made explicitly for or against the election of the candidates in the corresponding races. Panel (b): *Special Interest Group Share* gives the percentage of campaign commercials on US television that were paid for by special interest groups (i.e., by corporations, unions, ideological groups as well as their PACs, Super PACs, 501(c) groups) as opposed to those purchased by the candidates and parties themselves (US presidential and congressional elections). *Sources:* Own calculations based on data from the Center for Responsive Politics (a); Wesleyan Media Project and Wisconsin Advertising Project (b).

By examining the period through 2018, the study can draw conclusions that go beyond the effects that occurred immediately after the US Supreme Court struck down the bans on independent expenditures in 2010. The empirical strategy involves defining treatment status at the television market level rather than at the state level, in contrast to previous work examining the impact of *Citizens United* (see Section 2 for related literature). This new approach takes into account that people living in so-called out-of-state television markets cannot watch election commercials for races in their home state, expecting those people to be less affected or not at all if their state had a ban on independent spending before *Citizens United* overturned it.[3]

Somewhat surprisingly, the results indicate that *Citizens United* had not led to more overall campaign advertising in affected television markets. Moreover, contrary to earlier conjecture (see, e.g., Klumpp et al., 2016 and Abdul-Razzak et al., 2020), there is no evidence of an impact on the proportion of advertising on behalf of Republican candidates when different pre-trends in affected and unaffected television markets are taken into account. The results indicate a significant effect on the composition of election advertising, towards a greater proportion coming from special interest groups compared to that coming from candidates and parties, as well as a greater proportion of negative advertising.

With regard to the analysis on voter behavior in relevant gubernatorial elections, there is evidence for a demobilizing effect caused by *Citizens United*. Citizens living in a state affected by *Citizens United* (and exposed to relevant election advertising from that state) are about 6 percentage points less likely to participate in gubernatorial elections after the intervention in 2010 than comparable citizens in control states (with a baseline turnout of over 90% in the survey data used). Consistent with previous studies, the estimates indicate a large pro-Republican effect among voters affected by the decision, which amounts to 12-15 percentage points.

To shed more light on the mechanism behind these findings, the paper examines whether *Citizens United* affected the behavior of voters with different levels of education in differential ways. The evidence indicates that both the demobilization and the pro-Republican effect are primarily driven by citizens with the lowest level of education (no or at most a high school degree). In contrast, the results mainly show non-significant effects for citizens with medium and high levels of education (some/2-year college and 4-year college/PhD degree).

Taken together, the results contradict the previous conclusion that Republicans benefited more from the lifting of restrictions on independent campaign support because of their financial ties to corporate interests (as opposed to less well-funded union interests supporting Democrats). Rather, it seems that independent campaigns by special interest groups are generally more effective in endorsing Republican vs. Democratic candidates, and that citizens with a low level of education are particularly persuaded by them. Therefore, the evidence suggests that the pro-Republican effect may be related to different mobilization strategies used by (Republican-minded vs. Democratic-minded) special interest groups when running political campaigns.

The remainder of this paper is structured as follows. Section 2 discusses related literature and set the contribution in perspective to it. Section 3 describes the institutional background in the US

[3]About 15% of the individual survey respondents in the sample on voter behavior are served by television markets that cover less than 50% of the population in the respondents' home states.

context and discusses theoretical mechanisms that might play a role for the effects of *Citizens United*. Section 4 introduces the empirical strategy. Specifically, this section describes the implementation of the difference-in-differences research design and highlights how the study differs from previous work that has examined the effects of *Citizens United* (i.e., regarding the definition of treated vs. non-treated units). The following two Sections 5 and 6 describe the data used for the analyses on political advertising and voter behavior, respectively, present the specific econometric specifications chosen, and finally show the estimation results. Section 7 offers some concluding remarks.

2 Related Literature

This paper is linked to several strands of literature. First, it contributes to the literature examining the political effects of campaign finance rules. For example, Besley and Case (2003) find that restrictions on direct corporate campaign contributions at the US state level increase voter turnout as well as the share of Democratic-controlled lower chambers. Consistent with this, Hall (2016) documents that the introduction of corporate direct contribution bans in US states has a positive effect on Democratic seat shares. La Raja and Schaffner (2014) examine the introduction of bans on independent spending by corporations and unions and find no effect on electoral outcomes. Studying the effects of contribution limits on the number of candidates per race in US state level elections, Stratmann et al. (2006) find that limits increase the number of candidates in races for seats in the lower chambers. Finally, Avis et al. (2017) find for the Brazilian context that limits on corporate direct campaign donations have a positive effect on political competition through a larger pool of candidates, as well as a mobilizing effect on voters.

More specifically, this study complements previous work examining the effects of *Citizens United* on US politics. Following a similar difference-in-differences strategy, Klumpp et al. (2016) and Abdul-Razzak et al. (2020) find that the removal of restrictions on independent campaign expenditures at the state level has led to higher Republican election probabilities and vote shares, which they attribute to Republican candidates benefiting more from the removal of restrictions because they are ideologically more aligned with corporate interests (with the latter outspending unions, which tend to support Democrats). Moreover, Klumpp et al. (2016) find evidence that *Citizens United* has led to fewer candidates in state legislative elections as well as fewer direct campaign donations per race. Like this study does, Abdul-Razzak et al. (2020) examine how *Citizens United* affected turnout, and find no effect. However, the authors do not study relevant turnout in state level elections that were directly affected by the lifting of (state level) independent expenditure bans. In concurrent independent work, Petrova et al. (2019) study the effects of *Citizens United* on broadcast campaign advertising as well as on electoral outcomes. Consistent with the results of this study, they document that *Citizens United* led to more campaign commercials from special interest groups, more negative advertising, as well as a pro-Republican effect. Unlike this paper, they follow an empirical strategy that does not take into account that certain voter groups from so-called out-of-state television markets are likely not able to see relevant election advertising from the political races in their home state (see more on this in Section 4). Like Abdul-Razzak et al. (2020), they find no effect of *Citizens United* on voter turnout, but also do not study turnout for directly affected state level elections. Spencer and Wood

(2014) examine how independent campaign spending at the state level evolved around the *Citizens United* decision, and find a positive but insignificant effect. However, they only study the difference in independent spending between 2006 and 2010, i.e., just one election after *Citizens United*.

Finally, the results of this paper are important for the literature that studies the relationship between political advertising and voter turnout. In this context, various studies find that political advertising is effective in persuading voters (see, e.g., Spenkuch and Toniatti, 2018), but does not have a positive aggregate effect on total voter turnout among addressed citizens (see, for example, Ashworth et al., 2007, Krasno and Green, 2008). A number of studies document a demobilizing effect of negative campaign advertising (see, e.g., Ansolabehere et al., 1994, 1999), but others find a mobilizing or no effect (for example Freedman et al., 2004, Wattenberg and Brians, 1999). Ridout et al. (2015) document that negative advertising is more effective when it is funded by special interest groups (vs. candidate-funded negative ads).

3 Institutional background and theoretical arguments regarding the consequences of *Citizens United*

In January 2010, the US Supreme Court issued its decision in *Citizens United v. FEC*[4], removing the previous ban on independent campaign expenditures (also referred to as outside spending) when paid for from the general treasuries of corporations, unions, and ideological groups. According to the FEC, an independent expenditure is defined as "an expenditure for a communication that expressly advocates the election or defeat of a clearly identified candidate and which is not made in coordination with any candidate, or his or her authorized committees or agents, or a political party committee or its agents."[5] Primarily used for political commercials on television, the crucial aspect is the absence of any coordination. According to the *Federal Election Campaign Act of 1971*, any coordination between a corporation, union, or ideological group independently spending money from general treasuries in support of a politician's electoral campaign and this politician's committee would make the expenditure a direct contribution and thus be illegal.

At the US federal level, independent spending by corporations, unions, and ideological groups was forbidden between 2002 and 2010. The corresponding law is the 2002 *Bipartisan Campaign Reform Act*. Note that this ban did not apply to independent campaign expenditures made by individuals and PACs (political action committees), i.e., the organizations that corporations, unions and ideological groups must establish if they wish to contribute to candidates and parties. At the US state level, about two fifths had a ban on independent expenditures by corporations/unions prior to the *Citizens United* ruling. As a consequence of the federal decision, they had to adjust their campaign finance rules accordingly (i.e., they had to allow independent political spending by corporations/unions from then on).

[4]See Citizens United v. Federal Election Commission, 558 U.S. 310 (2010). The ruling was 5 to 4 and split along the conservative-liberal line.

[5]`https://www.fec.gov/help-candidates-and-committees/candidate-taking-receipts/understanding-independent-expenditures`.

A closely to *Citizens United* related ruling was issued in March 2010 by the United States Court of Appeals for the District of Columbia Circuit. In *SpeechNow.org. v. FEC*, it lifted the restrictions that usually apply to individual donations to PACs ($5,000 per individual/year for the 2010 elections), as long as the PACs only use them for independent campaign expenditures. This led to the creation of the so-called Super PACs, i.e., PACs that only engage in independent campaign spending, being allowed to accept unlimited amounts of money from individuals, but also from any organizations such as corporations, unions or ideological groups.

The main argument for the expected effects regarding political advertising is that *Citizens United* reduced the transaction costs of political spending by special interest groups. More specifically, independent campaign support has the advantage over direct campaign contributions that the need to establish a PAC – through which companies and unions must first raise funds among their employees/members (with maximum donation amounts) to then pass on as direct donations to the candidates to be supported – no longer exists.[6] In addition, with the invention of Super PACs following *SpeechNow.org*, it has become even easier for special interest groups to pool funds to independently support candidates (as Super PACs may accept funds from any donor in unlimited amounts to spend on independent campaigns). Thus, one might expect to see more campaign advertising overall in the states affected by *Citizens United* after the decision took effect than in states not affected by the ruling, as well as a change in the composition of advertising towards a greater proportion of campaign commercials funded by special interest groups vs. commercials coming from candidates and parties.

Theoretically, it is an open question how the simplified opportunities for special interest groups to invest in political races affect voter behavior. Several mechanisms could play a role. First, citizens might be better informed if *Citizens United* leads to more political advertising, which would predict a positive effect on turnout. Importantly, there could also be a change in the way political information is conveyed in election commercials, and/or how attempts are made to persuade citizens (when comparing advertising by candidates and parties to advertising by special interest groups). For example, special interest groups prefer to go negative in election campaigns (i.e., when calling not for the election of the preferred candidate, but against the election of the preferred candidate's challenger), and negative campaigns were found to have a demobilizing effect on voters (see Ansolabehere et al., 1994, 1999). Second, *Citizens United* could influence voter participation by changing political competition. Klumpp et al. (2016) find that the number of candidates per race in state legislative elections is reduced in states that were affected by *Citizens United*. This reduced political competition might demobilize voters. Finally, *Citizens United* could affect voter turnout through expressive motives in the voting calculus of citizens. For example, voters may be suspicious of the increased opportunities for special interest groups to influence the political process, and may increasingly feel that they are no longer able to hold their politicians accountable to their preferences, especially when those preferences conflict with the preferences of special interest groups providing campaign support. This might be associated with a loss of trust in democracy and reduced feelings of political efficacy.

[6] Direct corporate/union donations were also prohibited in the states that banned independent corporate/union spending prior to *Citizens United*. In these states, it was therefore necessary for corporations and unions to organize political support through PACs.

4 Empirical Strategy

This section describes the empirical strategy for examining the consequences of the lifting of bans on independent spending by special interest groups following the *Citizens United* decision. Section 4.1 introduces the difference-in-differences research design and discusses the identifying assumptions. Section 4.2 presents the strategy of how the information about whether or not certain states were affected by *Citizens United* is transferred to the relevant unit of observation in the context of aired political advertising, the television market.

4.1 Difference-in-differences design

Following the US Supreme Court's 2010 *Citizens United* decision that took place at the federal level, the US states also had to adapt their rules regarding the financing of campaigns for offices at the state level (e.g., gubernatorial elections or elections for the state legislatures). In particular, they had to remove existing bans on independent campaign spending by corporations and unions. However, not all states banned this type of political spending prior to *Citizens United*. Consequently, these can serve as a control group in a difference-in-differences design, with only those states being treated that had a ban before 2010. Specifically, 21 states banned corporate independent expenditures and 15 had bans on independent spending by unions. The definition of the treatment indicator (denoted *Affected by CU*) is based on whether a state had a ban on corporate or union independent spending before *Citizens United* went into effect, which is true for 22 states.[7] However, three of the 22 states first introduced bans on independent campaign support in the pre-intervention period between 2000 and 2010. As these cannot be clearly assigned to the treatment and control group, they are excluded from the analysis. This leaves only states that either banned or allowed independent campaign support for the entire sample period prior to *Citizens United*.[8] Finally, all 19 remaining (clearly treated) states that prohibited independent spending by corporations or unions in the entire pre-intervention sample period from 2000 to 2010 adjusted their respective campaign finance laws before the next general elections were held in November 2010 (see Spencer and Wood, 2014, for details). The post-intervention indicator used in the econometric specifications (referred to as *Post-CU*) therefore takes a value of one for all years after and including 2010. The remaining 28 control states did not prohibit independent expenditures by corporations and unions prior to 2010, i.e., corporations and unions were and continue to be allowed to make independent political expenditures.[9]

Importantly, the empirical strategy does not allow to identify the total effect of the *Citizens United* ruling, but only its relative effect caused by states with previously different institutional arrangements

[7]All states that banned independent spending by unions also had a ban on corporate independent spending, except for New Hampshire, which only banned union spending.

[8]By this restriction, eight television markets are lost in the analysis on broadcast political advertising (i.e., television markets that are dominated by one of these states with respect to more than two thirds of the audience living there); as discussed below in Section 4.2, treatment and control status are assigned at the level of television markets.

[9]Regarding the information on which states had a ban on independent expenditures by corporations and unions before 2010, data from Hall (2016) is used. Originally, this information comes from La Raja and Schaffner (2014); the replication data set for Hall (2016) (along with the information on the bans) is publicly available on Harvard's Dataverse; see `https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/HWC6OA`.

for independent campaign support. That is, the primary interest is in the effect of *Citizens United* on races for state level offices, namely gubernatorial elections (i.e., those races where the relative effect of the policy change in the affected states vis-à-vis the control states can be identified). However, it is not ruled out that there may also have been spillover effects to federal offices. For example, there may have been substitution effects among particular interest groups between spending for state vs. federal offices, or for some groups, the lifting of the ban on indirect spending at both the state and federal level may have made it more attractive to engage in political spending at all. Therefore, this paper also examines the corresponding outcome variables for congressional elections (US House).

Identifying assumptions

Using the difference-in-differences approach, this study compares the change in the outcomes of interest (i.e., political advertising on television and voter behavior) following the *Citizens United* ruling for treatment and control group, respectively. The difference between these two changes is the estimated *Citizens United* effect, which is interpreted as causal. The following assumptions are essential for identification.

Exogenous treatment. Since *Citizens United* was a ruling that took place at the federal level (without the states having had a right to be involved in the decision process), the assumption of an exogenous assignment to treatment status (i.e., states that banned independent spending by corporations or unions) can be considered as plausible. Unlike if for identification policy changes in the campaign finance landscape enacted by the state legislatures themselves or resulting from citizen initiatives were used (as exploited in La Raja and Schaffner, 2014, or Hall, 2016), it can probably be ruled out that the examined outcomes in the states affected by *Citizens United* are in some way related to the lifting of the bans at the federal level. For example, an empirical strategy that exploits state level variation in campaign finance regulations would overestimate the effect that removing bans on corporate political spending has on Republican vote shares if Republican-dominated states were more likely to lift such bans.

Common trends. Another critical assumption in the difference-in-differences approach is that outcomes in the treated units (television markets rather than states are used to assign treatment status, see below in Section 4.2) would have evolved like those in the control group if they had not been treated (i.e., that there is a common trend). Section 5 discusses the common trend assumption for the analysis of the political advertising outcomes.

No confounding factors. The difference-in-differences approach controls for all differences between treatment and control units that do not change over time as well as for all factors that change over time but affect treatment and control group to the same extent. However, it does not capture differences between treatment and control units that change over time. This becomes a problem when these factors are also related to the examined outcomes. A potential issue in this context might be changes in the rules on the direct financing of election campaigns. If, for example, states in the treatment group also relaxed their rules on direct campaign finance contributions from corporations and unions, this approach overestimates the effect of removing restrictions on independent campaign support. Eight states introduced bans on direct campaign contributions from corporations and/or unions in the sample period, and three states lifted such bans.[10] Similarly to removing bans on independent expenditures, in states where an existing ban on direct campaign contributions by corporations/unions is lifted, the relative attractiveness for the latter to engage in political spending is likely to increase. In order to appropriately control for these changes in states' regulations regarding direct campaign contributions, the econometric specification includes binary indicators based on whether the relevant states had a ban on direct donations by corporations or unions in the observed year (denoted *No Ban Direct Donations*).

In addition to violating the assumption of no confounding factors through changes regarding the rules on direct campaign contributions, existing restrictions on direct spending by corporations and unions could also result in states being differently treated by *Citizens United*. For states that do not ban direct political donations, a smaller effect of lifting bans on independent spending is likely. The reason is that the relative attractiveness for a corporation, for example, to engage in independent campaign support would not increase as much as if it would be allowed to directly fund candidates' and parties' campaigns. It can, however, be ruled out that this issue plays a major role, since all but one of the states that banned independent corporate and union spending before *Citizens United* went into effect in 2010 also banned direct donations from them.[11]

4.2 Defining treatment status at the television market level

Since the primary interest is to measure citizens' exposure to political advertising, local television markets (rather than states) are the natural unit to distinguish treatment from control group. Thus, unlike in previous studies examining the effects of *Citizens United*, the empirical investigation in this paper takes into account that television markets do not end at state borders but go beyond. This issue is substantial, as 97 of the 210 mutually exclusive television markets in the US serve two or even more states.

The US television markets are geographic areas in which residents can receive a specific set of local channels, either via antenna, cable, or satellite. Usually located in larger cities, local television stations' signals cover the surrounding suburban and rural areas.[12] Federal regulations thereby ensure that people in a certain market area can only watch stations from that market, and that each US county is assigned to exactly one television market.[13]

[10]Colorado introduced a ban on direct corporate donations in 2002 (in 2003 also for unions); Arkansas and Missouri adopted corresponding bans (for both corporate and union direct spending) in 2017. Ohio, Oklahoma, South Dakota, Connecticut and Montana introduced bans on union direct spending (in 2005, 2007, 2007, 2013, and 2015, respectively); New Hampshire and Tennessee lifted their bans on direct corporate campaign contributions in 2001 and 2013, respectively, and South Dakota lifted its 2007 ban on union direct spending in 2017.

[11]West Virginia had a ban on independent spending by unions, but no corresponding ban on direct contributions by unions. To rule out that this does not affect the interpretation of the results, specifications without West Virginia (respectively the television markets serving West Virginia) were estimated. The results do not change either qualitatively or quantitatively.

[12]Local US television plays a major role in providing political information to a large share of the electorate. Roughly 50% of US adults use television as their primary medium for news. Compared to the other major television platforms (network and cable television), local television thereby has the largest audience share (Pew Research Center, 2018, 2019).

[13]About thirty years ago, the local television stations (which historically broadcast their signal via antenna, i.e., over-the-air) started facing increasing competition from cable television offering services characterized by entertainment programs and including the national cable news channels CNN, MSNBC, and FNC. In response, so-called "must-carry" rules were introduced in the 1990s. They require cable companies to include local broadcasters in their service. Under the *Cable Television Protection and Competition Act of 1992*, a local broadcaster is required to choose between must-carry or retransmission consent. If the station opts for must-carry, its content must be transmitted by the cable company,

To illustrate the differences and consequences of assigning treatment and control status at the state vs. television market level, consider this small example: in the state of Texas, there was a ban on independent campaign support by corporations and unions prior to *Citizens United*. In the "standard" approach, which is followed, for example, by Spencer and Wood (2014), Klumpp et al. (2016), Petrova et al. (2019), or Abdul-Razzak et al. (2020), Texas would then be included among the treated states. However, a non-negligible portion of Texas' population (approx. 2.3mn. of 29mn.) is served by television markets that also have audiences outside Texas. The television market of Shreveport, Louisiana, for example, has 29% of its audience in Texas, and 71% in Louisiana, which makes it an out-of-state television market for its Texas viewers. That is, Texas viewers in the Shreveport market are likely to primarily learn about Louisiana's political races through local television, as campaign advertisers have incentives to reach as many relevant viewers as possible with their campaign commercials. When defining treatment at the state level, Texas citizens in the Shreveport television market will, however, be counted as treated by *Citizens United*, even though political advertising in this market will be dominated by the races in Louisiana. Given that Louisiana did not ban independent expenditures before *Citizens United*, the repeal of the ban on independent expenditures in Texas is likely to have little or no effect at all on Texas citizens living in the Shreveport market. The empirical strategy addresses this important concern by using the television market as the unit that defines treatment status, and by including in the treatment group only those television markets where more than two thirds of the population lives in states where there was a ban on independent campaign expenditures prior to *Citizens United* (and a clear effect on political advertising in that market is thus likely). Analogously, only those television markets are included in the control group where more than two thirds of the population lives in states that were not affected by the *Citizens United* decision (or, in other words, where less than one third lives in states affected by it). All other television markets are excluded from the analysis, i.e., those where no clear assignment to the treatment or control group is possible.

With regard to the analysis of voter behavior (Section 6), citizens served by out-of-state television markets are excluded from the sample (such as Texas citizens living in the Shreveport market mentioned above). The exception is if both their own state and the state or states that dominate their television market were not affected by *Citizens United*. Such citizens accordingly remain in the control group.

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but the station may not charge fees for it. However, if retransmission consent is chosen, the cable provider may only retransmit the local station's signal if some form of compensation has taken place (financial or otherwise). If in the latter case no agreement has been reached, the cable provider is prohibited from retransmitting the broadcaster's signal (`https://www.fcc.gov/media/cable-carriage-broadcast-stations`). Similar rules apply to satellite operators. The *Satellite Home Viewer Improvement Act of 1999*, a modification to the *Satellite Home Viewer Act of 1988*, requires satellite providers to carry all local channels if they carry at least one. In order to determine which local stations are relevant in a certain area, and then to be included in the services of cable and satellite companies, the Federal Communications Commission (FCC; the regulatory authority responsible for television) assigns each US county to one of 210 non-overlapping market areas – the so-called 'Television Market Areas' or 'Designated Market Areas' (DMAs). Since 2000, the FCC definitions of these areas follow the definitions of Nielsen Media Research, a private US company specialized in measuring media audiences. See `https://www.fcc.gov/oet/maps/areas` for the FCC's account of market areas. The assignment of counties to DMAs by Nielsen is based on past viewing behavior (`https://www.nielsen.com/intl-campaigns/us/dma-maps.html`). The FCC adjusts its market definitions (following Nielsen's adjustments) every three years to respond to changes in audience behavior (which affects a few counties at the borders of the markets). However, these changes are only marginal in the context of this study.

Therefore, the difference-in-differences approach only compares citizens whose media environment was clearly affected or not affected by *Citizens United* in terms of relevant political advertising for races in the citizens' home states.

5 Evidence on political advertising

5.1 Data on broadcast campaign commercials on local television

For the period 2000 to 2016, this study uses television market level information on broadcast campaign commercials related to various political races. The data is taken from the Wisconsin Advertising Project, respectively its successor, the Wesleyan Media Project.[14] Among a variety of information about the political advertising aired, important for the purposes of this study is the information on a) whether a particular ad was directly funded by a special interest group or sponsored by a candidate or party, b) the tone of the ad (positive, negative, or mixed), and c) which candidate is being advertised (or, in case of negative campaigning, which candidate is being advertised against). This information is available for US governor elections at the state level and is used to investigate how the removal of state level restrictions on independent campaign spending following *Citizens United* has affected the extent and composition of broadcast campaign advertising. With regard to potential effects on federal elections, this study relies on television advertising related to elections for the US House of Representatives.

Based on the above information, the analysis of political advertising uses four outcome variables: i) total advertising aired (measured by the total number of campaign commercials; expressed in 1,000 ads), ii) the percentage of campaign advertising funded by special interest groups, iii) the share of negative advertising, and iv) the share of advertising favoring Republican candidates. One observation in the sample relates to a particular television market in which election advertising for US gubernatorial and House elections, respectively, was broadcast in a given year.[15] In 48 of the 50 US states, gubernatorial elections are held every four years (New Hampshire and Vermont have two-year terms). Thereby, not all elections are held in the same year: 36 states respectively eleven states hold them in even-numbered years and the remaining three states hold them in odd-numbered years. Importantly, the sample is limited insofar that not all television markets were tracked throughout the whole sample period. For the year 2000, information is available for the top 75 television markets, from 2002 to 2006 for the top 100, and from 2008 for all 210 television markets. As a result of this restriction, the composition of television markets differs in the pre-treatment and post-treatment period. In order to address the potential problem of a change in the composition of television markets among treatment and control units, specifications with only those markets that were monitored both before and after the 2010 *Citizens United* intervention are estimated.[16]

[14] See https://elections.wisc.edu/wisconsin-advertising-project respectively https://mediaproject.wesleyan.edu.

[15] Regarding the elections for the US House, the variables aggregate advertising placed within a two-year election cycle.

[16] The results remain qualitatively and quantitatively robust; see Table A5 in the Appendix.

Table 1 shows descriptive statistics for all the variables used in the main analysis on broadcast political advertising in US gubernatorial elections (the corresponding statistics for the analysis of US House elections are shown in Appendix Table A1). The average number of campaign commercials per television market and year is about 6,400 (which corresponds to more than 50 hours of airtime if 30 seconds per election clip is taken as a basis, which is the case for most commercials). The average share of advertising financed by special interest groups is around 11 percent, and the average share of negative advertising is 27 percent.

Table 1: Descriptive statistics for the analysis on political advertising in US gubernatorial elections, 2000-2016

Variable	Mean	Std. Dev.	Min.	Max.	N
Total #Ads	6.416	5.967	0.001	42.70	638
%SIG Advertising	10.85	16.82	0	100	638
%Negative Advertising	26.91	20.34	0	100	638
%Republican Ads	50.78	26.90	0	100	638
Affected by CU	0.409	0.492	0	1	638
Post CU	0.630	0.483	0	1	638
Affected by CU x Post CU	0.262	0.440	0	1	638
No Ban Direct Donations	0.701	0.458	0	1	638

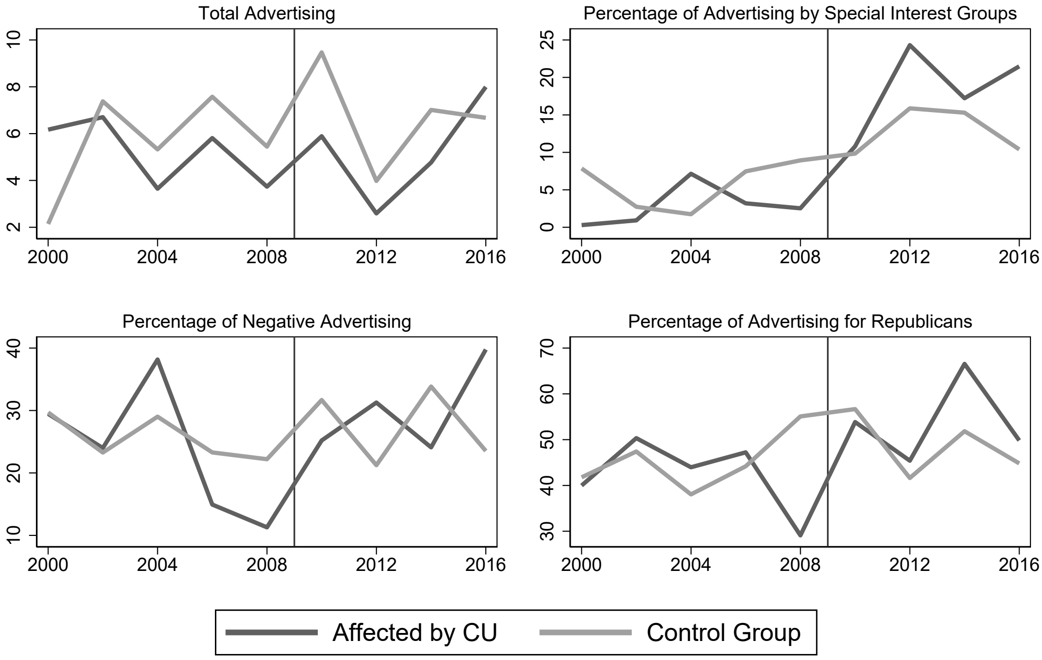
Notes: The unit of observation is television market-year.

5.2 Graphical evidence on the effects of *Citizens United*

Before implementing the difference-in-differences approach in a regression framework, Figure 2 graphically shows how the political advertising outcomes in the context of US gubernatorial elections evolve for the television markets in the treatment and control group, respectively (simple averages per election year). It depicts i) the total amount of campaign advertising, ii) the percentage of advertising funded by special interest groups (through independent campaign spending), iii) the share of commercials with a negative tone, and iv) the share of advertising favoring Republican candidates.

In terms of total campaign advertising related to gubernatorial elections (measured in 1,000 commercials each), *Citizens United* did not appear to have a differential effect on the television markets in the treatment and control group – if anything, it appears to have had a slightly positive effect on the markets in the control group. Concerning the effect on election commercials funded by special interest groups (compared to those sponsored by the candidates and parties themselves), *Citizens United* seems to have had a differential impact on the composition in the television markets of the treatment and control group. While the share of special interest campaign advertising in the control group increases from about 10% in 2008 to about 15% in 2012, the television markets affected by *Citizens United* show an increase of about 20 percentage points over the same period. This increase is roughly equivalent to the one observed for political advertising at the US federal level – as seen in Figure 1(b). Also, Figure 2 suggests a slight increase in the percentage of negative campaign advertising, as well as in the share of campaign advertising favoring Republican candidates.

Figure 2: The evolution of political advertising outcomes (gubernatorial elections) for television markets affected and not affected by *Citizens United*, 2000 to 2016



Notes: The graph shows for the television markets in the treatment and control group (i.e., those likely affected and likely not affected by the 2010 *Citizens United* decision) how the political advertising outcomes in the context of US gubernatorial elections evolve over the sample period from 2000 to 2016 (simple averages per election year).

Regarding common trends, Figure 2 generally indicates a similar pattern prior to 2010 for the television markets in the treatment and control group. For the percentage of advertising with negative tone as well as the share of advertising in favor of Republican candidates, a decline can already be observed for the treated television markets relative to the ones in the control group in 2008, two years before *Citizens United* went into effect. To address this potential concern that treatment and control markets were already on a differential growth path in their outcome variables prior to the *Citizens United* decision, models are estimated with linear time trends specific to the television markets in the treatment and control group, respectively.

5.3 Estimation model

The difference-in-differences approach is implemented by estimating variants of the following specification:

$$\begin{aligned} \mathit{Political\ Advertising}_{mt} = \beta_0 &+ \beta_1 \mathit{Affected\ by\ CU}_m \times \mathit{Post\ CU}_t \\ &+ \beta_2 \mathit{No\ Ban\ Direct\ Donations}_{mt} \\ &+ \mathit{TV\ Market}_m\ FE + \mathit{Year}_t\ FE + \varepsilon_{mt}. \end{aligned} \tag{1}$$

Political Advertising$_{mt}$ refers to the different outcomes on broadcast campaign commercials that are observed at the level of particular television markets m in particular election years t. *Affected by CU*$_m$ is the treatment indicator, which takes a value of one if more than two thirds of the observed television market m lies is in a state or states that had a ban on independent campaign support from corporations or unions before the 2010 *Citizens United* decision (and a value of zero if more than two thirds of the television market lies in states where there was no such ban). *Post CU* takes a value of one for all years after and including 2010, and zero otherwise. Accordingly, the coefficient on *Affected by CU*$_m$ $\times$ *Post CU*$_t$ indicates the difference-in-differences treatment effect, i.e., how the lifting of the bans on independent campaign support by corporations/unions has affected the political advertising outcomes in the treated television markets relative to the ones in the control group. Finally, the control variable *No Ban Direct Donations*$_{mt}$ takes a value of one if more than two thirds of television market m is located in a state or states that do not ban direct campaign donations by corporations/unions to candidates, and zero if more than two thirds lies in state(s) that ban direct donations (the time subscript t because this might change over time as described above). All remaining factors that affect political advertising in a given television market and year are absorbed by the error term ε_{mt}. Since it is plausible to assume that these factors are not independent of each other within a particular market area, the (heteroscedasticity-robust) standard errors are clustered at the television market level.

5.4 Estimation results

Table 2 shows the estimation results for the difference-in-differences regressions. For each outcome variable, three specifications are estimated. The first is with fixed effects for each television market and election year, the second adds the control for whether the television market is dominated by a state that does not have a ban on direct campaign contributions from corporations or unions (*No Ban Direct Donations*), and the third specification finally adds a linear time trend for the markets in the treatment and control groups, respectively.

The estimated treatment effects confirm the impression from Figure 2. There is no evidence that the lifting of independent expenditure bans had an effect on total advertising aired in gubernatorial elections. With regard to the composition of campaign advertising, the estimates indicate a positive and substantial effect on the percentage of commercials funded by special interest groups and on the share of negative advertising, which fits the overall picture given that special interest groups are more likely to go negative in political commercials compared to candidates and parties. The effect sizes amount to 9-14 respectively 4-13 percentage points, depending on the specification chosen. It thus seems that, contrary to what one might suspect, special interest groups do actually not invest more in US governor elections after the states lifted their bans on independent campaign support. Rather, the effects found suggest a substitution from direct to indirect campaign support.

Regarding the effect of *Citizens United* on the percentage of campaign commercials favoring Republican vs. Democratic candidates, the difference-in-differences results show a shift towards more advertising for Republican politicians, which might explain their increased vote shares in state level elections, as suggested, for example, by Klumpp et al. (2016) and Abdul-Razzak et al. (2020). However, this result is not robust to the inclusion of treatment and control group-specific time trends, which seem to be important according to Figure 2.

Caution needs to be exercised in interpreting the effects regarding bans on direct campaign contributions from corporations/unions (as indicated by the coefficients on *No Ban Direct Donations*), since identification here is based on rather few states, and the introduction or removal of a ban is likely to be associated with the relative strength of Republicans vs. Democrats in a particular state. Allowing direct spending is associated with less overall campaign advertising on television, a reduced share of negative advertising, and a higher share of commercials supporting Republican candidates. The latter result is consistent with the finding in Hall (2016) that Republican vote shares increase when bans on direct donations are lifted.

Table 2: The effect of lifting state level bans on independent spending following *Citizens United* on political advertising in gubernatorial elections, 2000-2016

	(1) Total #Ads	(2) %SIG Advertising	(3) %Negative Advertising	(4) %Republican Ads
Affected by CU x Post CU	-0.728	9.409***	5.595**	7.005*
	(0.840)	(3.208)	(2.629)	(3.749)
Mean DV	6.416	10.85	26.91	50.78
TV Market FE	X	X	X	X
Election Year FE	X	X	X	X
Observations	638	638	638	638
Adjusted R^2	0.327	0.344	0.176	0.319

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: OLS regressions with robust standard errors clustered at the television market level in parentheses. An observation refers to a particular local television market where campaign advertising in connection with US gubernatorial elections was broadcast in a particular year. A television market is defined as treated if more than two thirds of its population lives in a state or states that were affected by the *Citizens United* decision (i.e., states that banned independent political spending by corporations or unions prior to 2010), and as not treated if more than two thirds of its population lives in a state or states that were not effected by it. Descriptive statistics for the variables used are presented in Table 1. * p<0.1, ** p<0.05, *** p<0.01.

Table A3 in the Appendix shows the corresponding effects of lifting state level bans on independent campaign support by corporations and unions on political advertising related to federal elections for the US House of Representatives. There is no evidence of significant treatment effects, which speaks against the hypothesis that there were spillover effects from an increased interest group activity in state level elections to federal elections.

6 Evidence on voter behavior

This section studies to what extent the removing of state level restrictions on independent spending by corporations and unions following *Citizens United* affected citizens' voting decisions. Thereby, the same difference-in-differences framework is used as in the evidence section on political advertising, with the difference that the television market is no longer the unit of analysis, but rather survey respondents who live in a particular state and are exposed to political advertising in a particular television market. The following describes the data used as well as the econometric model applied, and finally presents the regression results.

6.1 Data on voter behavior

The analysis on voter behavior is based on survey data from the Cooperative Congressional Election Study (CCES) (Kuriwaki, 2020), comprising respondents from about 1600 US counties (in 42 states) who were surveyed about their voting behavior in US gubernatorial and House elections from 2006 to 2018. The average respondent is 52 years old, white, earns about $50,000 a year, and has a college degree. Female respondents are slightly overrepresented (52% women).

Of particular interest is the information on whether citizens turned out to vote, as well as the party of the candidate they voted for (Democratic vs. Republican). When asked which candidate they voted for, a citizen is coded as not having voted if he or she responds with "I did not vote in this race".[17] The two resulting outcome variables (*Did Vote* and *Republican Vote*) take a value 100 if a citizen turned out to vote respectively voted for the Republican candidate (and zero otherwise).

6.2 Estimation model

The empirical strategy involves the estimation of the following difference-in-differences model (respectively variants thereof):

$$\begin{aligned} Voter\ Behavior_{ist} = \beta_0 &+ \beta_1 Affected\ by\ CU_s \times Post\ CU_t \\ &+ \beta_2 No\ Ban\ Direct\ Donations_{st} + \mathbf{X}_{it} \\ &+ State_s\ FE + Year_t\ FE + \varepsilon_{ist}. \end{aligned} \tag{2}$$

[17] The response "not sure" (0.7% of all responses) is coded as having voted.

The dependent variable indicates at the level of individual survey respondent i living in state s whether he or she turned out to vote in the corresponding election in year t respectively whether he or she voted for the Republican candidate (*Did Vote* and *Republican Vote*). *Affected by* CU_s is the treatment indicator, taking a value of one if respondent i was affected by *Citizens United*, i.e., if there was a ban on independent corporate or union campaign support in respondent i's state s prior to 2010 and, importantly, if at least two thirds of respondent i's television market is also located in that state. Citizens served by out-of-state television markets (who are likely to be exposed to campaign advertising from another state or states) are excluded from the analysis. Similarly, citizens are assigned to the control group if there was no ban on independent spending in respondent i's state s. Again, citizens from out-of-state television markets are excluded from the sample unless both their home state and the state that dominates their television market have not been affected by *Citizens United* (in this case, they are plausibly assigned to the control group). *No Ban Direct Donations*$_{st}$ controls for whether there was no ban on direct campaign donations by corporations or unions in state s in year t. Moreover, the model includes individual controls captured by the vector $\mathbf{X}_{it}$, whereby gender, age (5 categories), income (4 categories), education (3 categories), and race (4 categories) are chosen. These ensure that the effects found are not due to a changing composition of characteristics of citizens in the treatment and control group. By using state fixed effects, identification is based on variation over time in the rules on independent campaign support that citizens within a particular state are exposed to. The (heteroscedasticity-robust) standard errors are clustered at the state level.

6.3 Estimation results

Table 3 presents the estimation results on voter behavior. For each of the two outcome variables, a model is estimated with only state and year fixed effects, then additionally with the control on whether the observed state allows direct campaign contributions by corporations/unions, and finally state-specific linear time trends are added.

The estimation results show that citizens from states affected by *Citizens United* are on average about 6 percentage points more likely to report not having voted in subsequent US gubernatorial elections relative to citizens from control states. This result holds despite the high baseline of over 92% of respondents indicating to turn out to vote, and approximately corresponds to the decline in voter turnout when comparing citizens with a 4-year college or PhD degree to citizens with at most high school degree.

Regarding citizens' vote choices, the likelihood of voting for the Republican candidate running for governor in a state affected by *Citizens United* increases by about 12-15 percentage points relative to citizens in control states. This result is consistent with the findings in Abdul-Razzak et al. (2020) and Klumpp et al. (2016), who use official election returns to demonstrate the pro-Republican effect. One possible explanation for the two to three times higher effect documented in this study lies in the refined approach to separating citizens affected and not affected by *Citizens United* (by including in the treatment group only those who are also exposed to relevant political advertising originating from in-state television markets, and excluding those who are likely exposed to campaign commercials from another or other states). Another explanation is that the *Citizens United* effect might be more

Table 3: The effect of lifting state level bans on independent spending following *Citizens United* on voter behavior in gubernatorial elections, 2006-2018

Dependent variable:	Did Vote			Republican Vote		
Affected by CU x Post CU	-6.240**	-6.220**	-6.406*	15.27**	14.66**	11.84
	(2.943)	(2.905)	(3.301)	(5.796)	(5.985)	(8.105)
No Ban Direct Donations		0.495	-4.092*		-15.32*	-16.55***
		(3.779)	(2.210)		(7.861)	(4.895)
Mean DV		92.44			51.79	
State FE	X	X	X	X	X	X
Election Year FE	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X
State Trends			X			X
Observations	3,057	3,057	3,057	2,809	2,809	2,809
Adjusted R^2	0.109	0.109	0.121	0.099	0.100	0.115

Notes: OLS regressions with robust standard errors clustered at the state level in parentheses. An observation refers to an individual survey respondent who was asked in a given election year about his or her voting behavior in US gubernatorial elections. A citizen is defined as affected by *Citizens United* if his or her state had a ban on independent campaign support from corporations or unions prior to the decision (excluding citizens served by out-of-state television markets from the analysis). The individual control variables are gender, age (5 categories), income (4 categories), education (3 categories), and race (4 categories). Descriptive statistics for the variables used are presented in Table A2 in the Appendix. * p<0.1, ** p<0.05, *** p<0.01.

pronounced in gubernatorial elections, where election advertising might generally play a larger role as compared to state legislative elections examined in the previously mentioned studies. Adding state-specific time trends to the model reduces the precision of the estimated pro-Republican effect.

Together with the evidence on political advertising presented in Section 5 – where a strong effect on the composition of campaign advertising towards more advertising funded by special interest groups as well as more negative advertising and no significant effect on the share of pro-Republican advertising in the most restrictive specification is documented – these results thus suggest that i) political commercials directly funded by special interest groups are more persuasive to voters when supporting Republican candidates, and/or ii) negative advertising against Democratic candidates is more effective than against Republicans. The documented evidence is therefore consistent with the explanation that special interest groups pursue different mobilization strategies in their support of Republican vs. Democratic candidates when running independent campaigns.

Table A4 (Appendix) documents that the lifting of independent spending bans at the state level had no significant effect on voter turnout as well as Republican voting probabilities in federal elections for the US House of Representatives. This is consistent with the previous finding that *Citizens United* had no effect on political advertising outcomes in US House elections (see Table A3). If anything, the results tend to go in the same direction as for gubernatorial elections at the state level, which could be interpreted as weak evidence for a spillover effect of political advertising at the state level on voter behavior in federal elections.

Finally, regarding the effects that lifting bans on direct campaign donations from corporations/unions to candidates and parties have on voter behavior (as indicated by the coefficients on *No Ban Direct Donations*), the estimation results indicate that allowing direct political spending is associated with reduced Republican voting probabilities (both for gubernatorial and US House elections). This makes sense against the background that the effect is primarily identified by the introduction of bans on union direct spending that were established in the sample period from 2006 to 2018.[18] It must kept in mind, however, that these results are not very well identified because there likely is an endogeneity problem (Democratic-controlled states are more likely to lift bans on union spending and vice versa).

Heterogeneous effects on citizens with different education

Finally, this section examines whether citizens with different levels of education respond differently to the lifting of state level bans on independent campaign support, drawing on citizens' survey responses on their personal characteristics. Accordingly, model equation (2) is extended by adding corresponding interaction terms. It can then be tested whether citizens with, say, high levels of education change their voting behavior in response to the removal of bans on independent expenditures in a different way than citizens with low levels of education, relative to the corresponding difference observed in control states. There are three educational categories, respondents with i) no high school degree or at most high school degree, ii) some or a 2-year college degree, and iii) a 4-year college or PhD degree. The omitted reference category thereby consists of citizens who have no or at most a high school degree. Table A6 presents the corresponding results on turnout and the likelihood of voting for Republican candidates in US gubernatorial elections.

Concerning voter turnout, the results show a robust demobilizing effect for citizens in the lowest education category (no high school or at most high school degree). The point estimate here amounts to an 11-12 percentage point reduction in turnout. Similarly, the strongest response in terms of voting for Republican candidates is found among citizens in this educational group (with point estimates of 17.5-19 percentage points). For citizens in the other two education groups (some/2-year college degree, and 4-year college/PhD degree), there is no robust evidence that *Citizens United* influenced their voting behavior.[19]

[18] Ohio, Oklahoma, South Dakota, Connecticut and Montana introduced such bans in 2005, 2007, 2007, 2013, and 2015.

[19] The p-values testing the hypotheses regarding the effects for citizens with some or a 2-year college respectively a 4-year college or PhD degree, i.e., *Affected by CU* $\times$ *Post CU* + *Affected by CU* $\times$ *Post CU* $\times$ *College Degree (Some/2-Year) / 4-Year College/PhD* $= 0$ are all larger than 0.1, except the one that tests the effect of *Citizens United* on turnout for citizens with a 4-year college/PhD degree in the second specification with state trends (0.035).

Table 4: The effect of lifting state level bans on independent spending following *Citizens United* on voter behavior in gubernatorial elections, 2006-2018 –
Differential effects regarding citizens' education level

Dependent variable:	Did Vote		Republican Vote	
Affected by CU x Post CU	-12.23**	-11.25*	17.54**	19.25*
	(5.110)	(5.718)	(8.627)	(10.29)
Affected by CU x Post CU x College Degree (Some/2-Year)	11.76*	9.366	-8.699	-16.38
	(6.090)	(6.274)	(13.29)	(13.02)
Affected by CU x Post CU x 4-Year College/PhD	5.186	1.455	-5.154	-12.83
	(6.203)	(6.225)	(14.45)	(15.00)
Affected by CU x College Degree (Some/2-Year)	-8.665	-7.196	2.757	9.067
	(5.891)	(6.065)	(11.68)	(11.09)
Affected by CU x 4-Year College/PhD	-0.797	1.941	10.92	19.12
	(5.547)	(5.560)	(14.37)	(14.20)
Post CU x College Degree (Some/2-Year)	-9.115**	-8.197*	6.806	10.74
	(4.512)	(4.715)	(6.625)	(6.943)
Post CU x 4-Year College/PhD	-4.267	-1.623	-5.429	-2.468
	(4.152)	(4.188)	(8.285)	(8.310)
No Ban Direct Donations	0.829	-4.023*	-14.59*	-16.28***
	(3.746)	(2.090)	(7.949)	(4.613)
College Degree (Some/2-Year)	10.70**	10.49**	-5.524	-8.892
	(3.964)	(4.314)	(6.472)	(6.496)
4-Year College/PhD	7.682**	5.926*	-9.827	-12.15
	(3.520)	(3.500)	(8.437)	(8.458)
Mean DV	92.44		51.79	
State FE	X	X	X	X
Election Year FE	X	X	X	X
Individual Controls	X	X	X	X
State Trends		X		X
Observations	3,057	3,057	2,809	2,809
Adjusted R^2	0.110	0.121	0.101	0.117

Notes: OLS regressions with robust standard errors clustered at the state level in parentheses. An observation refers to an individual survey respondent who was asked in a given election year about his or her voting behavior in US gubernatorial elections. A citizen is defined as affected by *Citizens United* if his or her state had a ban on independent campaign support from corporations or unions prior to the decision (excluding citizens served by out-of-state television markets from the analysis). In addition to education (the omitted reference category being no high school degree or a high school degree as highest educational level), the individual control variables are gender, age (5 categories), income (4 categories), and race (4 categories). Descriptive statistics for the main variables used are presented in Table A2 in the Appendix. * p<0.1, ** p<0.05, *** p<0.01.

7 Concluding remarks

Special interest groups pursue various strategies to influence politics in their favor. Providing campaign support to politicians and parties is an important channel that has received considerable attention in the political economy and political science literature (see Stratmann, 2019, for a summary of the literature). Thereby, one can distinguish between two basic types of political spending. Either special interests i) donate campaign funds to politicians and parties (which can then be used to finance campaigns), or they ii) finance election campaigns directly with their money, i.e., they run campaign commercials in favor of their preferred candidates, or, when occurring in the form of negative campaigns, against the challengers of their preferred candidates. This latter form of campaign support, in the US context known as independent campaign expenditures or outside spending, has become very meaningful in recent years.

Through its 2010 decision in *Citizens United v. FEC*, the US Supreme Court struck down all bans on independent campaign support by corporations and unions (previously forbidden at the federal level as well as in many US states). With this change in the US campaign finance landscape, there have been increased opportunities for special interests and wealthy individuals, vis-à-vis the average citizen, to exert influence on the political process. Many observers and researchers therefore view this development as highly critical, especially because it might undermine citizens' trust in democracy and the political institutions. As a consequence, citizens may become increasingly alienated from politics and stay away from it.

This paper examines the impact that the removal of state level bans on independent expenditures by corporations and unions following *Citizens United* had on (the volume and composition) of campaign advertising and on voter behavior in gubernatorial elections. Applying a difference-in-differences approach, the evidence indicates, contrary to previous suggestions, that *Citizens United* has not led to more campaign advertising in affected television markets, nor to a higher share of advertising for Republican candidates when controlling for different pre-trends in affected and non-affected television markets. However, the results show strong effects on the share of campaign advertising funded by special interest groups (vs. candidate/party advertising) as well as on the share of negative campaigns. Regarding the effects on voter behavior, there is evidence of a demobilizing effect caused by *Citizens United* and a substantial pro-Republican effect among citizens affected by the decision.

The results of this study speak against the previous conjecture that Republicans benefited more from the lifting of independent spending bans than Democrats, simply because corporate interests outspend union interests. The evidence is rather consistent with the explanation of differential mobilization strategies pursued by special interest groups. For example, it might be that campaign commercials sponsored by Republican-minded special interest groups (vs. advertising by Democratic-minded groups) are generally more effective, or that negative campaigns work better when they advertise against Democratic candidates.

Finally, the paper documents that both the demobilization and pro-Republican effect caused by the removing of independent spending bans are primarily driven by less-educated citizens. One possible explanation for the demobilizing effect among citizens in the lowest educational category might be that better-educated citizens are more capable to process the information contained in political advertisements by special interest groups (particularly in negative campaigns) than less well-educated citizens.

Future research could further elaborate on this. For example, survey data could be used to investigate whether citizens in states affected by *Citizens United* experienced a loss of trust in democracy and/or reduced feelings of political efficacy, which might be another possible mechanism related to the documented demobilizing effect. Also, the granular information in the data on broadcast campaign commercials could be used to shed more light on what specific aspects of special interest groups' political ads are particularly persuasive or mobilizing to voters.

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A Appendix

Table A1: Descriptive statistics for the analysis on political advertising in US House elections, 2000-2016

Variable	Mean	Std. Dev.	Min.	Max.	N
Total #Ads	3.624	4.382	0.001	29.24	1,105
%SIG Advertising	8.994	15.02	0	100	1,105
%Negative Advertising	24.52	24.05	0	100	1,105
%Republican Ads	54.63	30.96	0	100	1,105
Affected by CU	0.395	0.489	0	1	1,105
Post CU	0.565	0.496	0	1	1,105
No Ban Direct Donations	0.714	0.452	0	1	1,105

Table A2: Descriptive statistics for the analyses on voter behavior in gubernatorial and US House elections, 2006-2018

Variable	Mean	Std. Dev.	Min.	Max.	N
Gubernatorial elections					
Sample on turnout					
Did Vote	92.44	26.43	0	100	3,057
Affected by CU	0.400	0.490	0	1	3,057
Post CU	0.768	0.422	0	1	3,057
No Ban Direct Donations	0.664	0.472	0	1	3,057
At Most High School Degree	0.342	0.474	0	1	3,057
Some/2-Year College Degree	0.364	0.481	0	1	3,057
4-Year College/PhD Degree	0.294	0.456	0	1	3,057
Sample on vote choice					
Republican Vote	51.80	49.98	0	100	2,809
Affected by CU	0.401	0.490	0	1	2,809
Post CU	0.778	0.416	0	1	2,809
No Ban Direct Donations	0.667	0.471	0	1	2,809
At Most High School Degree	0.324	0.468	0	1	2,809
Some/2-Year College Degree	0.366	0.482	0	1	2,809
4-Year College/PhD Degree	0.309	0.462	0	1	2,809
US House elections					
Sample on turnout					
Did Vote	94.78	22.24	0	100	5,733
Affected by CU	0.375	0.484	0	1	5,733
Post CU	0.724	0.447	0	1	5,733
No Ban Direct Donations	0.720	0.449	0	1	5,733
Sample on vote choice					
Republican Vote	56.48	49.58	0	100	5,338
Affected by CU	0.373	0.484	0	1	5,338
Post CU	0.741	0.438	0	1	5,338
No Ban Direct Donations	0.723	0.447	0	1	5,338

Table A3: The effect of lifting state level bans on independent spending following *Citizens United* on political advertising in US House elections, 2000-2016

Dependent variable:	Total #Ads	%SIG Advertising	%Negat. Ads	%Republican Ads
Affected by CU x Post CU	0.934	0.110	5.242	-5.826
	(0.818)	(2.766)	(5.192)	(6.356)
No Ban Direct Donations	-0.248	-2.962	-3.839	6.190
	(0.977)	(2.521)	(4.437)	(6.914)
Mean DV	3.624	8.994	24.52	54.63
TV Market FE	X	X	X	X
Election Year FE	X	X	X	X
Time Trend Treatm./Control Markets	X	X	X	X
Observations	1,105	1,105	1,105	1,105
Adjusted R^2	0.295	0.148	0.248	0.290

Notes: OLS regressions with robust standard errors clustered at the television market level in parentheses. An observation refers to a particular local television market where campaign advertising in connection with US House elections was broadcast in a particular year (aggregated over each two-year election cycle). A television market is defined as treated if more than two thirds of its population lives in a state or states that were affected by the *Citizens United* decision (i.e., states that banned independent political spending by corporations or unions prior to 2010), and as not treated if more than two thirds of its population lives in a state or states that were not effected by it. Descriptive statistics for the variables used are presented in Appendix Table A1. * p<0.1, ** p<0.05, *** p<0.01.

Table A4: The effect of lifting state level bans on independent spending following *Citizens United* on voter behavior in US House elections, 2006-2018

Dependent variable:		Did Vote			Republican Vote	
Affected by CU x Post CU	-2.549	-2.512	-1.394	3.322	3.167	3.232
	(1.563)	(1.564)	(1.938)	(3.128)	(3.124)	(4.720)
No Ban Direct Donations		3.830***	3.716**		-12.79**	-12.82**
		(1.203)	(1.560)		(5.061)	(6.173)
Mean DV		94.78			56.48	
State FE	X	X	X	X	X	X
Election Year FE	X	X	X	X	X	X
Individual Controls	X	X	X	X	X	X
State Trends			X			X
Observations	5,733	5,733	5,733	5,338	5,338	5,338
Adjusted R^2	0.078	0.078	0.081	0.114	0.115	0.117

Notes: OLS regressions with robust standard errors clustered at the state level in parentheses. An observation refers to an individual survey respondent who was asked in a given election year about his or her voting behavior in US House elections. A citizen is defined as affected by *Citizens United* if his or her state had a ban on independent campaign support from corporations or unions prior to the decision (excluding citizens served by out-of-state television markets from the analysis). The individual control variables are gender, age (5 categories), income (4 categories), education (3 categories), and race (4 categories). Descriptive statistics for the variables used are presented in Table A2 in the Appendix. * p<0.1, ** p<0.05, *** p<0.01.

Table A5: The effect of lifting US state level bans on independent spending following *Citizens United* on political advertising related to gubernatorial elections, 2000-2016 –
Sample restricted to television markets observed before and after *Citizens United*

Dependent variable:	Total #Ads			%SIG Advertising			%Negative Advertising			%Republican Ads		
Affected by CU x Post CU	-0.720	-1.256	-0.281	9.413***	9.224***	12.138***	5.666**	4.487*	11.617*	6.998*	9.377**	8.840
	(0.845)	(0.817)	(1.656)	(3.208)	(3.361)	(3.952)	(2.598)	(2.689)	(6.822)	(3.754)	(3.635)	(7.213)
No Ban Direct Donations		-3.390***	-3.553***		-1.196	-1.682		-7.459**	-8.649**		15.059**	15.148**
		(1.050)	(1.152)		(4.008)	(4.291)		(3.709)	(4.066)		(6.185)	(6.431)
Mean DV		7.082			11.15			27.65			50.20	
TV Market FE	X	X	X	X	X	X	X	X	X	X	X	X
Election Year FE	X	X	X	X	X	X	X	X	X	X	X	X
Time Trend Treatm./Control Markets			X			X			X			X
Observations	487	487	487	487	487	487	487	487	487	487	487	487
Adjusted R^2	0.299	0.304	0.301	0.348	0.347	0.344	0.163	0.165	0.163	0.249	0.255	0.251

Notes: OLS regressions with robust standard errors clustered at the television market level in parentheses. An observation refers to a particular local television market where campaign advertising in connection with US gubernatorial elections was broadcast in a particular year. A television market is defined as treated if more than two thirds of its population lives in a state or states that were affected by the *Citizens United* decision (i.e., states that banned independent political spending by corporations or unions prior to 2010), and as not treated if more than two thirds of its population lives in a state or states that were not effected by it. Compared to the full sample (see Table **??**), the sample in these estimates is restricted to those television markets observed at least once before and after the 2010 *Citizens United* intervention. * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

Table A6

Dependent variable: *Scandal Yes/No* (100/0)	Full sample		1983-1997	1998-2018
Mean Congruence	-5.163**	-4.009	-6.612*	-2.020
	(2.169)	(2.552)	(3.499)	(3.776)
Mean DV	7.823	7.823	6.288	8.957
State FE		X	X	X
Period FE		X	X	X
Observations	3,068	3,068	1,304	1,764
Adjusted R^2	0.002	0.018	0.000	0.020

Notes: OLS regressions with robust standard errors clustered at the congressional district level in parentheses. The unit of observation is district-period. * p<0.1, ** p<0.05, *** p<0.01.