Opening the Floodgates: Traditional vs. Outside Spending Before and After *Citizens United*

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Acknowledgements

First and foremost, I would like to thank my parents, Robert and Jan Steinberg, for being so supportive of me throughout college and for enabling me to get such a great education. I would like to also thank my faculty advisor, Professor Laurel Harbridge, for taking the time out of her schedule to guide me in this process. Thanks to Professor Joseph Ferrie for advising me along the way, and thanks to the MMSS and Northwestern faculty for providing me with the knowledge to complete this project. Finally, I could not have put it all together without my MMSS friends, my Alpha Epsilon Pi fraternity brothers, and Ajay Bakshani, who have supported me along the way.
Abstract

The Supreme Court’s ruling of *Citizens United* altered the landscape of campaign finance in American politics and elections. In this paper, I aim to make sense of those changes regarding the regulation of campaign expenditures and their actual impact on vote shares in House elections. By performing OLS regression analyses in various forms, I find that traditional and outside spending are statistically different, with *Citizens United* having statistically significant effects for the impact of outside spending on the vote share in elections involving an incumbent. However, results also indicate that outside spending is less relevant in open races than in contested races with an incumbent.
Background and Goals

In January of 2010, the United States Supreme Court handed down a landmark 5-to-4 decision in *Citizens United v. FEC*. The court ruled that Congress could not limit certain independent organizations, including corporations, unions, and nonprofits, from engaging in election expenditures and “electioneering communications” on behalf of political campaigns. The majority deemed such limits, as outlined in Section 203 of the Bipartisan Campaign Reform Act, in violation of the First Amendment’s Freedom of Speech Clause (*Citizens United*).

In the months and years following the ruling, the case continued to ignite major political controversy. Public officials worked to make sense of *Citizens United*’s immediate ramifications on election law, while academics and legal scholars attempted to anticipate its philosophical and empirical impact on the political landscape, especially regarding corruption and political equality (Dawood 2015, Lessig 2011, Lessig 2013, Hasen 2013). These endeavors coincided with increased partisanship, fervent debate over the normative effects of campaign finance restrictions, as promoted in the media, and a public weary of perceived corruption between elected officials and their wealthy contributors. Thus, within such a politically charged environment, it is especially important for scholars to separate the facts from the fiction when assessing the case’s electoral and policy repercussions.

Through my research, I aim to contribute to existing literature analyzing the impact of campaign spending on election outcomes. However, as opposed to much of the previous work in the field, my goal is to take into account differences between expenditures of “traditional” campaigns, including committees that donate directly to them, and those of outside groups, many of which are not currently subject to the classic disclosure regulations of official campaigns and including PACS that spend separately from campaigns. The rise of this “dark money” as result of
Citizens United is still very new, and it has likely factored more heavily into the most recent elections. Though its effects and influence on the political and electoral process appear to be consequential to an outside observer, I work to attain a more concrete picture of its effects on election results, and whether these effects more or less pronounced than pre-2010 methods of spending. Broadly speaking, my research questions ask how Citizens United changed the impact of spending and whether the outside spending unleashed by the ruling has different effects than traditional campaign spending. More specifically, I test three hypotheses: (1) whether the impact of traditional spending equals the impact of outside spending in election years occurring from 2006 through 2014; (2) whether (a) the impact of traditional before and after Citizens United and (b) the impact of outside spending before and after the ruling had significant differences; and (3) whether similar results hold for both contested races involving incumbents and races with open seats.

My research approach compares the data on elections before and after Citizens United in 2010, encompassing the House of Representatives general election cycles from 2006 until 2014. In the remainder of this paper, I will initially outline contributions to the literature on the subject of campaign finance and its impact. Next, I will explain the data and methodology utilized to answer the questions about whether the flood of third party spending has affected campaign finance’s impact or changed the effectiveness of campaign spending. Finally, I will discuss my results and conclude the paper.

Literature Review

Existing literature for this topic encompasses several forms of analysis on various facets of elections. Initially, it is important to review the legal and philosophical debate regarding the ruling to understand the ruling’s implications. Stemming from these discussions come further
exploration into spending bans and the empirical analysis of campaign finance law, especially relevant considering the Supreme Court imposed various changes to the law in principle and practice. The most relevant are the consensus and dissent regarding spending’s effects on the two-party election outcomes, including theoretical and statistical assessments of this subject. This research helps explain the common methodological approaches utilized and the reasoning supporting the conclusions derived. Additionally, it is important to consider the extensive research into other factors contributing to electoral success, including incumbency, gerrymandering, and presidential approval – control variables or potential sources of omitted variable bias. I will outline the above contributions, delving into *Citizens United*’s legal and empirical implications, analysis of campaign spending, and the control variables in this order.

**Citizens United and Campaign Spending**

A substantial area of research relevant to *Citizens United* in general has been devoted to the impact of fundraising and spending bans. This literature is especially consequential because academics and strategists can use it to anticipate the immediate ramifications of such a ruling and how campaigns should respond. One aspect of controversy relates to the importance of free speech and equity in American political discourse. Legal scholars have debated whether restrictions on campaign spending inhibit the First Amendment by discriminating against individuals and organizations from contributing to causes and campaigns they believe in (Dawood 2015). Others argue the opposite: limits promote it by leveling the playing field so the airwaves are not overrun with the opinions of a select few, wealthy entities, diluting the voices of the public at large (Hellman 2011). In this case, the court took the former viewpoint.

Additionally, analyses have pointed out that the ruling’s implications extend into the realms of corruption law and egalitarian representation issues. *Citizens United* appeared to
narrow the standards of corruption in election law – academics debate whether legislative successes given to institutions independently supporting certain legislators constitute flagrant corruption or just reflect ideological alignment (Hasen 2011a; Hasen 2011b; Dawood 2015). Previous rulings adopted an “antidistortionist” reasoning, emphasizing that large-scale organizations with different interests from their customers, the voting public, can distort voters’ decision-making process with pooled resources, thus strengthening the representation afforded to those who happen to have those resources (Austin v. Mich. Chamber of Commerce 1990). My study will begin to contribute to some of these questions in the frame of a post-Citizens United landscape, helping to determine whether independent expenditures can make the difference in terms of who represents us and wins at the ballot box.

The ruling’s legal implications lead to the empirical question of what actually materializes when spending limits are eliminated or nonexistent, particularly the specific limits to independent expenditures delineated in Citizens United. In the past, studies focused on traditional spending have insinuated sometimes opposing conclusions. Research demonstrating that increased spending helps challengers more than incumbents implies that spending caps would give an advantage to the incumbent, preventing competitors from maximizing their potential gains (Jacobson 1990; Dawood 2015). On the other hand, certain studies arguing that incumbents do obtain advantages from greater spending including in the Senate, imply that spending limits would inhibit that possibility (Greene 1988; Gerber 1998; Dawood 2015). Although this is a point of controversy, studies assessing campaign finance law in the states illustrate that, in locations with spending bans in effect before Citizens United, spending immediately increased at a faster rate after the ruling than in states with no such ban, due more to independent groups (Spencer and Wood 2012). However, this increase was due more to
expenditures from $1,000 to $40,000 rather than extremely large ones over $55,000 (Spencer and Wood 2012).

With increases in spending largely resulting from the independent organizations enabled by *Citizens United*, it is important to determine the actual effect this unbounded flow of funds has on the electoral process and whether it has diminished the impact of direct spending by campaigns and their PAC’s. My research aims to advance our knowledge to help answer these questions.

Essential aspects to this literature include the influence of spending on congressional elections. The effects of campaign finance and money’s role on elections have been researched up until *Citizens United*, and continuing studies have started to grasp changes in the electoral environment since the ruling. Existing literature can be divided into categories encompassing quantitative analysis of spending’s effects on Congressional races and the additional factors that may affect a candidate’s vote share.

Scholars have often analyzed campaign spending’s effects on candidates’ vote shares. Early studies have shown that, across a range of model specifications, challengers’ spending has a statistically significant, positive relationship with challenger vote share, while incumbents’ spending has little effect on incumbent vote share (Jacobson 1990). This result is perhaps due to either the fact that high quality challengers have the ability to raise more money than low quality challengers or candidate familiarity, though there is reason for skepticism because of an inadequate sample of races with low incumbent and high challenger spending (Glantz, Abramowitz, and Burkart 1976; Jacobson 1978, 1985, 1990). In terms of open elections in which candidates may have lower name recognition, evidence suggests that spending matters for both candidates; however, in both cases, the question of simultaneity arises due to the causal
relationship between vote share and the amount of money candidates can fundraise and thus spend. Simultaneity is a common limitation in studies on the impact of campaign spending – does a winning candidate’s higher vote share, which is often influenced by higher spending, reflect that candidate’s initial popularity, enabling him or her to raise more funds, or does it reflect the success of higher campaign spending in itself? When aiming to correct for this, either through polls of constituents or simultaneous equations, results demonstrate similar significant effects of campaign spending on behalf of the challenger (Jacobson 1985). Hence, it is established that campaign spending has mattered, but questions remain regarding how that magnitude has changed over time with new laws, regulations, and court rulings.

Additional Factors in Elections

Over the past few decades, academics have performed broad research into the determinants of electoral victory, in particular the winner of the two-party vote share at the district level, in Congress. These variables will be important in my research in order to control for the factors affecting elections other than spending. Additionally, some of these variables, including fluid, differentiated voter identification and registration laws and candidate character valence, might account for omitted variable bias in my study’s results. I include control variables in my study to help improve accuracy in my results and conclusions.

One of the most common characteristics associated with Congressional winners is incumbency, providing name recognition and familiarity. Incumbency also benefits candidates because it grants them access to existing party resources (relevant in primaries), political connections, and a potentially valuable network of possible donors, to whom the incumbent can grant favors (Jacobson and Carson 2015, 47-53). A history of theoretical analysis and empirical studies affirms this advantage. However, recent evidence suggests the magnitude of incumbency
effects has varied through the decades, reaching peaks in the 1960’s and 1980’s – the estimated advantage has fluctuated from anywhere between approximately 3% and 9% – and hitting a low in the most recent election cycle (Banks and Kiewiet 1989; Erikson 1971). I will attempt to control for the incumbency effects by accounting for this advantage in the dependent variable in my regression, thus capturing such effects in the constant term.

Some external factors contributing to the makeup of Congress include both gerrymandering and election law. Gerrymandering is the partisan redrawing of congressional district lines based on demographics, population, voter concentration, and other factors, in order to benefit a particular party or individual candidates (Merriam-Webster). This procedure can take shape in many different forms, including the controlling party legislating away favorable districts of the opposing party based on demographic lines. Previous studies confirm the existence of bias in favor of the controlling party in such elections relative to the proportional vote (Erikson 1972; Campagna and Grofman 1990; Jacobson 2015). One way of modeling the partisan bias of gerrymandering includes assessing the number of Congressional seats a party would win based on different levels of the national or statewide popular vote, as assessed in previous literature (McGann and Smith 2016). However, others utilize a simple indicator for the presence of redistricting as a control variable to determine the effect of the redrawing of district lines on voter share; this is the approach that I will utilize (Canes-Wrone, Brady, and Cogan 2002).

Finally, election law, including various voter identification requirements and registration requirements, can have an impact on turnout and, by limiting certain voters from participating, influence election outcomes (Jacobson 2015). Past studies have generally not controlled for these laws, and as they only affect a minimal number of voters in certain states, I expect the bias in omitting these types of variables to be negligible.
Additional, and perhaps self-evident, explanations for electoral success include the alignment of a candidate’s political positions with those of his or her constituents, the public’s perception of a candidate’s leadership and character traits, and national trends such as the popularity of the incumbent president and the state of the economy. First, regarding ideological issues, evidence suggests that members of Congress cast their legislative votes along similar lines as their constituent electorate, and that incumbents who betray those lines are punished for it electorally (Canes-Wrone, Brady, and Cogan 2002). Thus, when district partisanship aligns with your party, a candidate can expect a higher vote share. For example, in a particular district, constituencies’ opinions correlate far more with electoral winners’ political positions than with electoral losers’ positions: “Because constituency electorates determine who the winners and the losers will be, it is safe to say that constituency voting plays a major role in creating the correlations between constituency views and Representative views” (Erikson 1978, 527). This description, in essence, explains that constituents tend to elect candidates with views similar to those of the voters in the district at large. Thus, in my analysis, we would expect a significant relationship between a candidate’s vote share and the vote share of the presidential nominee of that candidate’s party in a particular district. If a party’s presidential candidate receives a large share of the vote, this variable could illustrate district partisanship, and, through down-ballot voting and ideological overlaps, could help that party’s Congressional candidate, accounting for the use of the presidential vote share as an independent variable (Canes-Wrone, Brady, and Cogan 2002). Perhaps this relationship illustrates an overlap of a constituency’s policy preferences with those of its elected officials.

Second, though more difficult to quantify, the personality or character of a candidate could impact a race have yielded some concrete results. These traits are referred to as a
candidate’s “character valence,” emphasizing integrity and perceived leadership skills (Adams and Merrill 2011). Not only is it relevant in itself, as studies have shown that electorates value individual character traits and competence (McCurley and Mondak 1995), but a strong character valence also tends to moderate a candidate’s position towards the median of the district. Certain candidates who could be less likeable may take more ideologically extreme positions to gain more national attention and, therefore, expand their donor base and financial contributions. It may also help them differentiate themselves from candidates with superior valence and more moderate views, especially given that the views of a district’s voters may be ideologically uncertain (Stone and Simas 2016). Thus, candidates with higher valence who do not have to rely on such risky approaches to garner a base of support tend to hold “safer” moderate positions (Stone and Simas 2016; Adams and Merrill 2011). However, scholars do disagree on this issue; some argue that, once accounting for other factors, individual candidates’ character traits have less of an overall importance. For example, incumbency may account for some of a candidate’s leadership skills, fundraising ability, and integrity (Stone and Simas 2016). Unfortunately, due to the lack of an adequate measure for valence across time and across races, I am unable to include this variable in my regressions.

Finally, national trends and factors outside of a candidate’s control, including the incumbent president and party’s popularity and the state of the economy, can upend Congressional races on a national scale. A popular president, buoyed by favorable events near election season, can rally support and boost the turnout of impassioned voters or win over independents, thus helping his or her party in down ballot elections, including races for Congress. One line of research argues that presidential “coattails” minimally affect incumbents, but rather boost the president-elect’s party in races for open seats (Flemming 1995). Others point
to the impact of presidential popularity on midterm elections, noting that an unpopular president
can damage the chances of his or her party’s incumbent representatives due to association with
that president’s policies, resulting in electoral losses (Abramowitz 1985, 34). This result is in
addition to the general pattern that the incumbent president’s party tends to lose congressional
seats in midterm elections. Economic data, including metrics of personal income growth and
unemployment rates, also appears to correspond with incumbents’ electoral success (Canes-
Wrone, Brady, and Cogan 2002). Models outlining midterm election success traditionally can
incorporate an economic metric; however, some studies suggest that, due to the strong
relationship between presidential approval ratings and the state of the economy, the direct effects
of the economy are implicitly accounted for (Abramowitz 1985, 36; Tufte 1975, 816; Jacobson
1990) by including presidential approval interacted with whether the incumbent is in the
president’s party. I will follow the latter approach.

**Research Question and Hypotheses**

In this study, my goal is to analyze some of the changes of the electoral landscape since
*Citizens United*, specifically involving the effects of different forms of campaign spending. More
specifically, part of this goal entails assessing whether there is a significant difference between
expenditures from a candidate’s own campaign war chest and expenditures from outside groups,
including party committees. For ease of presentation, I refer to expenditures from a candidate’s
own war chest as *traditional* spending, and expenditures from outside groups (party committees,
political action committees (unaffiliated with the official war chest of particular candidates),
Super PACs, and other 501(c) organizations) as *outside* spending. Aggregate outside spending
has exploded in recent years, especially since 2010. The composition of spending has changed,
with Super PAC and external spending growing relative to the past, so it is important to measure
its effectiveness. As shown in Figure 1, though outside spending had grown by a factor since 2004, it especially spiked after the ruling (2010, a midterm election, featured almost double the amount of outside spending as in 2006). This result is even more staggering when excluding party committees, as shown in Figure 2. These patterns spur the question of whether differences in outside spending between challengers and incumbents has similar effects to the difference in traditional spending between challenger and incumbents. If the hype around the impact of the Citizens United ruling is accurate, we might expect the effects of both types of spending to be similar. This line of argument forms the basis for my first hypothesis.

H1: The effect of outside spending on the incumbent vote share is equal to the effect of traditional spending on the incumbent vote share.

Figure 1: Aggregate Outside Spending on Federal Elections, Including Party Committees

https://www.opensecrets.org/outsidespending/
However, there are several contrasts between the two types of expenditures that might account for a variation in impact on vote share. For example, under existing law, congressional campaigns cannot directly coordinate with Super PACs and other 501(c) organizations, which are not required to disclose their donors. Therefore, control of these groups is less centralized than control of a candidate’s official campaign committees, and they may be less effective (in translating dollars to votes) in comparison to how a particular campaign is organized.

Furthermore, it is evident that many, though by no means all, Super PACS function on a more ideological level and are dependent on wealthy individual donors – these components can affect their message, weaken coordination with and perhaps pit them against a formal campaign organization or political party, and further espouse the opinions of the largest donors to the public (Kang 2013).
While the sheer volume of the increase in spending leads to questions regarding the differences between traditional and outside spending, the formal change in the role of money in politics following the *Citizens United* ruling necessitates an analysis of whether the impact of traditional and outside spending have changed post-*Citizens United*. In particular, due to the lack of coordination between a candidate’s own campaign committees and outside groups, outside groups might put their money towards different resources than traditional campaigns. In the past, a candidate’s internal committee and his or her respective party generally ran campaigns; this could encompass advertising, grassroots organizing, and data analytics. But, with the advent of outside groups, the balance of power may have shifted; for example, outside groups may spend more on negative campaign ads (without the candidate’s name attached) than positive ones, especially relative to official, internal campaigns. This could potentially increase the marginal return of campaign spending for such external groups. However, it remains likely that the effects of traditional spending will still exceed the effects of outside spending in aggregate. Though this is only one example, theoretically, similar mechanisms could have altered the effects of spending after *Citizens United*, leading to my second hypothesis.

H2: There will be a significant difference between the impact of traditional spending before and after *Citizens United* and a significant difference between the impact of outside spending before and after *Citizens United*

H2a: Post *Citizens United*, traditional spending will have a smaller marginal impact than pre-*Citizens United*.

H2b: Post *Citizens United*, outside spending will have a greater marginal impact than pre-*Citizens United*. 
Finally, using varying metrics for voter share that I will discuss, I plan to include open races in my analyses of campaign spending’s effects. I will assess the same hypotheses for open races, and I expect to see largely similar results. As a result, my final hypothesis suggests that, in open races with Republican and Democratic candidates, the impacts of traditional and outside spending will be statistically different before and after the ruling.

H3: In open races, there will be a significant difference between the impact of traditional spending before and after *Citizens United* and a significant difference between the impact of outside spending before and after *Citizens United*

H3a: In open races, post-*Citizens United*, traditional spending will have a smaller marginal impact than pre-*Citizens United*.

H3b: In open races, post-*Citizens United*, outside spending will have a greater marginal impact than pre-*Citizens United*.

Thus, my primary study delves into the existence of a difference between outside spending and that of the official, political campaign of a candidate, and whether *Citizens United* changed or magnified these impacts. I test whether these changes result in a different impact for both traditional and outside spending compared to before *Citizens United*.

**Data**

The dataset utilized in my analysis contains election results, spending, and various characteristics of the races and candidates including incumbency, both presidential and Congressional district vote share, and metrics of candidate strength, through 2014. The bulk of the data was collected and compiled by Gary Jacobson at University of California San Diego. To this dataset, I entered data from opensecrets.org, the webpage of the Center for Responsive Politics, describing outside, independent spending from Super PACs, 501(c)’s, and PACS,
including party committees distinct from a candidate’s internal campaign. This differs from the Jacobson spending metric because it does not include funds directly donated to and spent by a candidate’s internal, registered campaign committee, which I call traditional spending. More specifically, the unit of analyses and variables in the dataset that I plan to utilize consists of the district-year. I include elections from the years 2006 through 2014 as part of my unit of analysis in order to cover the elections just before and after the ruling in early 2010. The district variables, also incorporated into my unit of analysis, encompass each state and its congressional districts, the boundaries of which had changed after the 2010 census and redistricting cycle. Thus, each variable is distinguished by the district and year of the election.

**Dependent Variable(s):**

*Incumbent’s two-party vote share:* This primary dependent variable accounts for the share of votes cast for the incumbent candidate in each district, as a percentage of the votes cast for the two major parties. It implicitly accounts for the incumbency advantage in the constant term generated from regressions involving this variable.

*Democrat’s two-party vote share:* These election results account for the share of votes cast for the Democratic candidate in each district, as a percentage of the votes cast for the two major parties. I will use this as my dependent variable when analyzing open seat elections, which I do separately from races involving an incumbent.

**Key Independent Variables:**

*Incumbent’s Traditional Expenditures:* This measure encompasses total spending of the incumbent candidates’ official Congressional campaign committees for the House of Representatives. The contributions financing this spending are subject to limits outlined by the FEC, and include direct donations of PACs.
Challenger’s Traditional Expenditures: Same as above, except for challenger candidates for Congress.

Logarithmic Differences of Challenger and Incumbent Traditional Expenditures: Common measure to capture the magnitude of difference between the candidates’ traditional spending, accounting for diminishing returns and the effects of campaign spending. This entails the difference between the natural log of incumbent spending and the natural log of challenger spending, and is one of my two primary independent variables (Canes-Wrone, Brady, and Cogan 2002).

Incumbent’s Outside Spending: Outside spending includes independent expenditures by PACs, including party committees (i.e., funds from PACs that legally can and have directly contributed to the incumbent candidates’ campaign committees, but rather separately spent), Super PACs (PACs that can make independent expenditures, cannot coordinate with party and candidate campaign committees, and are not subject to contribution or spending limits), 501(c)(4)’s (classified as nonprofits and are not subject to donor disclosure, unlike Super PACs), and other 527 groups (such as issue-oriented organizations that do not expressly advocate for particular candidates, but indirectly support them through the promotion of certain policies) (Center for Responsive Politics).

Challenger’s Outside Spending: Same as above, except for challengers

Logarithmic Differences of Challenger and Incumbent Outside Expenditures: Measure to capture the magnitude of difference between the candidates’ outside spending, accounting for diminishing returns and the effects of campaign spending. This entails the difference between the natural log of incumbent outside spending and the natural log of challenger outside spending, and is the second of my two primary independent variables.
I also utilize *Logarithmic Differences of Republican and Democrat Traditional Expenditures* and *Logarithmic Differences of Republican and Democrat Outside Spending* for open races.

*Other Control Variables*

*Seat Status* (for open seat races): As I have discussed, incumbency has traditionally been considered an important predictor of electoral success in Congress. The seat status dummy variables explain whether the Congressional seat was formerly filled with a Republican (one variable coded 0 and 1) or Democratic incumbent (another variable coded 0 or 1); if both dummy variables are coded 0, then the open seat is from a newly drawn district with no former incumbent. If both variables are coded 1, the seat is contested by two former incumbents.

*Freshman*: As a dummy variable, this indicates whether the incumbent candidate is a freshman in Congress. Whether the incumbent is a freshman helps determine his or her strength and experience – as I mentioned in the literature review, incumbents tend to have more party connections and are able to point to direct benefits for their constituents. If candidates were freshmen, they would be weaker in this regard.

*Challenger Quality*: Acting as a metric to determine the quality of the challenger, this dummy variable assigns 0 to challengers who have not held elected office and 1 to challengers who have. In this regard, it points to the ability of the challenger to take on the incumbent, both in terms of character traits, leadership skills, and policy experience that enabled him or her to achieve elected office in the first place. Thus, both the incumbency status and challenger quality help control for a candidate’s character valence as well. For the regression involving open seats, dummy variables for the Republican and Democratic candidates take 0 if they have not held elected office and 1 if they have, encompassing a similar effect.
Redistrict: A dummy variable that takes 0 if the district lines remained the same and 1 if the district had changed for a particular election year, redistrict can help control for changes in a district’s voting margins that might have resulted from gerrymandering and reapportionment – potentially enhancing the controlling party’s strength. I abbreviate this variable redistrict, but it really signifies whether a particular district was redistricted during the election year.

District Presidential Vote Share: As discussed in the literature review, this measure, consisting of the vote share of the presidential candidate in the incumbent candidate’s party, helps control for district partisanship and down-ballot voting. For the regression involving open seats, this is coded as the Democratic candidate’s vote share.

Presidential Approval Ratings: Includes presidential approval ratings, measured as the difference between a president’s approval and disapproval rating, based on Gallup’s scientific surveys of the public during federal election weeks. As discussed, this is a relevant measure of voter satisfaction with a president’s policies, and some scholars have argued that economic conditions are incorporated into these ratings. This variable is couple with an interaction determining whether the unit of the dependent variable is in the party or not (0 if not, 1 if so), in order to capture negative or positive repercussions from the president’s approval rating.

While many of these variables are very commonly used as controls for certain determinants of electoral success (Canes-Wrone, Brady, and Cogan 2002), some limitations do exist. The largest impediments to utilizing the dataset include the inability to differentiate between spending from the general election and the primary. For purposes of this study, I will be including primary spending in the data because it can impact voters’ perceptions of the candidate and his or her campaign even before the general election. Another weakness is the grouping of all outside spending as one variable, including PACs and party committees under stricter FEC
oversight. These expenditures might not necessarily be utilized with similar effectiveness across the board because they encompass an umbrella of unique groups and organizations; however, I decided to aggregate this spending together in order to set a clear contrast between expenditures under direct jurisdiction of a candidate’s campaign and those outside of that oversight.

Additionally, some of the variables used only roughly and implicitly account for factors such as gerrymandering, policy preferences, and economic metrics. However, for the purposes of this study, I will assume that these controls, including presidential approval and redist, sufficiently absorb these factors.

**Methodology**

My approach to this study encompasses a series of multiple regressions to analyze my above hypotheses. This entails organizing two separate sets of regressions: one grouping for seats held by incumbents facing challengers and a second grouping for open elections.

For each regression, I utilize the U.S. House of Representative elections dating from 2006 through 2014, including the couple election years right before and right after the election year coinciding with the ruling (handed down on the date January 21, 2010). Of course, I count 2006 and 2008 as before Citizens United and 2012 and 2014 as after Citizens United; however, while the 2010 elections technically took place after the decision, I perform my analyses twice, with that year included in the pre- and post- variables separately. I assess both sets of regressions because groups may have taken time to organize, assess the repercussions, and launch effective campaigns in the 2010 election year, making it a potential anomaly when compared to the years before and after. Due to the nature of STATA and my use of a log differences model, my regressions also drop races in which a candidate spend $0 in outside or traditional spending\(^1\). I

\(^1\) This results in an average of 175 races being excluded for each election year.
would expect such races to be less competitive than big-money, highly contested ones. Thus, since such races are omitted, one could on the whole anticipate the final sample to find it less likely that outside spending impacts vote share and that *Citizens United* affected the impacts of spending, in addition to producing a positive bias in the coefficient on the outside spending variable. Due to the lack of a candidate or candidates with financial backing, these races are likely to result in wider margins of victories for the favorite, even with such minimal spending. Holding other factors constant, such regressions with a larger sample size would predict larger swings in the vote with smaller amounts of spending, as would be unsurprising in elections with minimal spending; therefore, regressions excluding such races could be less significant (due to the different perceived impact of such small amounts of spending) and produce a positive bias in outside spending’s impact (for the same reason).

My initial regression is meant to determine whether there exists a significant difference in the effects of traditional spending and outside spending, as I outlined as a relevant hypothesis to test. In the first set of regressions involving incumbents against a challenging candidate, the most common scenario in Congressional races, I utilize the incumbent’s share of the two-party vote as my dependent variable. Before performing the OLS regressions, I drop both open races and races in which incumbents were unopposed, in order to primarily analyze contested elections. From here, I conduct several linear OLS regressions, utilizing a semi-log model (and thus accounting for potential diminishing returns) with (1) the difference of the natural logs of challenger traditional spending and incumbent traditional spending as an independent variable, (2) the difference of the natural logs of challenger outside spending and incumbent outside spending as an independent variable, and the (3) share of the presidential vote of the incumbent candidate’s party, (4) the dummy variable illustrating redistricting, (5) the dummy variable describing the
challenger quality, (6) the dummy variable describing whether the incumbent is a freshman, and
the interaction between presidential approval and a dummy (InParty) determining whether the
incumbent candidate is in the president’s party, as shown in Equation 1 below:

Equation 1:
Incumbent Vote Percentage = $\beta_0 + \beta_1 (\text{Log Differences Traditional}
\text{Spending}) + \beta_2 (\text{Log Differences Outside Spending}) + \beta_3 (\text{Incumbent President Vote}
\text{Share}) + \beta_4 (\text{Redistrict Dummy}) + \beta_5 (\text{Challenger Quality Dummy}) + \beta_6 (\text{Freshman}
\text{Incumbent Dummy}) + \beta_7 (\text{President Approval*InParty}) + \beta_8 (\text{InParty}) +
\beta_9 (\text{Presidential Approval}) + \mu$

Once I test the hypothesis of whether there is a significant difference between the effects
of the log differences of traditional and outside spending (across the full period of analysis), I
then look into whether this relationship has changed after the Citizens United ruling. My next
step, building off of this regression, is to interact a dummy variable, referred to as Citizens
United Time Dummy that takes 0 before and 1 after Citizens United with both of the spending
variables. As I mention, I vary whether I consider the 2010 election to come before or after the
ruling. Based on this analysis, I can potentially determine whether the ruling has changed the
impacts of traditional and outside spending and whether there is a statistically significant
difference between the variables before and after. Below, Equation 2 is the complete equation
with interactions for both spending variables, though I performed other regressions derived from
this one for comparison and to see whether similar results hold under different specifications.

Equation 2:
Incumbent Vote Percentage = $\beta_0 + \beta_1 (\text{Log Differences Outside Spending}) + \beta_2 (\text{Log}
\text{Differences Traditional Spending}) + \beta_3 (\text{Log Differences Traditional}
\text{Spending})(\text{Citizens United Time Dummy}) + \beta_4 (\text{Citizens United Time}
\text{Dummy}) + \beta_5 (\text{Log Differences Outside Spending})(\text{Citizens United
Dummy + \beta_6(Incumbent President Vote Share) + \beta_7(\text{Redistrict Dummy}) + \beta_8(\text{Challenger Quality Dummy}) + \beta_9(\text{Freshman Incumbent Dummy}) + \beta_{10}(Presidential Approval*\text{InParty}) + \beta_{11}(\text{InParty}) + \beta_{12}(\text{Presidential Approval}) + \mu

In addition to the two pooled cross-section analyses above, I perform simple cross-sectional regressions for each of the five general election years ranging from 2006 until 2014. These can specifically tell me the effects of the two types of spending within the years, before and after Citizens United, though I cannot statistically compare between the years’ models. Rather, I use these yearly models to describe the effects of spending within years (and the relative effect of traditional and outside spending), and I utilize the results from Equation 2 to assess whether changes in the effect of spending are significant.

Finally, I separately analyze Congressional elections in open seats in the House. In these cases, by definition of an open seat race, I am limited by the fact that there are generally no incumbents vying for open seats – thus, I cannot use the incumbent’s share of the two-party vote as my dependent variable. Instead, I first use the Democratic candidate’s share of the two-party vote as my dependent variable. Next, I recode challenger quality, incumbent’s presidential vote share, and presidential approval (interacted with InParty dummy) to Republican and Democrat quality, Democrat’s presidential vote share, and presidential approval (interacted with a dummy indicating whether the President is a Democrat), respectively, for my independent control variables. Then, I add in dummy variables determining whether a Democrat or Republican previously held the open seat. Lastly, I recode incumbent and challenger spending to Democrat and Republican spending, while keeping the log differences model of $\ln(\text{Republican spending})-\ln(\text{Democratic spending})$, for both traditional and outside expenditures.
This regression format prevents me from directly comparing spending in open seat elections to spending in incumbent elections, and whether their effects on vote share are statistically stronger or weaker; however, with Equation 3, I will still be able to analyze the prevalence of this effect and how it has changed pre- and post- Citizens United.

Equation 3
Democrats Vote Share=$\beta_0+\beta_1($Log Differences Republican and Democrat Traditional Spending$)+\beta_2($Log Differences Republican and Democrat Outside Spending$)+\beta_3($Citizens United Time Dummy$)+\beta_4($Log Differences Republican and Democrat Traditional Spending$)($Citizens United Time Dummy$)+\beta_5($Log Differences Republican and Democrat Outside Spending$)($Citizens United Time Dummy$)+\beta_6($Open Seat Previous Democrat Dummy$)+\beta_7($Open Seat Previous Republican Dummy$)+\beta_8($Democrat Quality$)+\beta_9($Republican Quality$)+\beta_{10}($Democrat Share of Presidential Vote$)+\beta_{11}($Redistrict Dummy$)+\beta_{12}($Presidential Approval*$InDemParty$)+\beta_{13}($Presidential Approval$)+\beta_{14}(InDemParty)+\mu$

Therefore, with these three equations as a starting point, I can begin to analyze the difference between the impacts of the difference between challenger and incumbent traditional and outside spending on voter share, whether Citizens United altered those impacts, and whether the results hold for open seats as well.
Results

After running Equation 1, I found the results largely matched the previous literature and expectations. Listed in Table 1 are the coefficients and standard errors for the variables:

**Table 1: Equation 1 Results**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Impact on Incumbent Vote Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Differences Traditional Spending</td>
<td>-2.058</td>
</tr>
<tr>
<td></td>
<td>(0.136)**</td>
</tr>
<tr>
<td>Log Differences Outside Spending</td>
<td>-0.113</td>
</tr>
<tr>
<td></td>
<td>(0.066)</td>
</tr>
<tr>
<td>Incumbent President Vote Share</td>
<td>0.491</td>
</tr>
<tr>
<td></td>
<td>(0.021)**</td>
</tr>
<tr>
<td>Redistrict</td>
<td>1.009</td>
</tr>
<tr>
<td></td>
<td>(0.545)</td>
</tr>
<tr>
<td>Challenger Quality</td>
<td>-1.346</td>
</tr>
<tr>
<td></td>
<td>(0.389)**</td>
</tr>
<tr>
<td>Freshman</td>
<td>-2.788</td>
</tr>
<tr>
<td></td>
<td>(0.412)**</td>
</tr>
<tr>
<td>Presidential Approval x InParty</td>
<td>0.079</td>
</tr>
<tr>
<td></td>
<td>(0.020)**</td>
</tr>
<tr>
<td>Presidential Approval</td>
<td>-0.105</td>
</tr>
<tr>
<td></td>
<td>(0.018)**</td>
</tr>
<tr>
<td>InParty</td>
<td>-3.885</td>
</tr>
<tr>
<td></td>
<td>(0.478)**</td>
</tr>
<tr>
<td>Constant</td>
<td>30.786</td>
</tr>
<tr>
<td></td>
<td>(1.19)**</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.70</td>
</tr>
<tr>
<td>( N )</td>
<td>814</td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses. ** p<0.01, * p<0.05

As expected, the greater the difference between challenger spending and incumbent spending, the lower is the incumbent’s share of the vote, as interpreted by the negative
coefficients on the traditional spending and outside spending variables (for every 1% increase in the difference between challenger traditional spending and incumbent traditional spending, there is a 2.058% decrease in the incumbent vote share, and for a 1% increase in the outside spending variable, there is a 0.113% decrease in the incumbent vote share). However, while the difference in traditional spending is strongly statistically significant, the difference in outside spending is only significant at the 90% confidence level. I suspect that this is due to an especially weak relationship between outside spending variable and the dependent variable in 2006 and 2008, before the ruling truly ramped up outside spending (and thus possibly changed the effect of outside spending).

The model is consistent with this conjecture when applied to the years 2006, 2008, and 2010, all years either before or immediately after the case (as in 2010), in which outside spending variables were statistically insignificant (as shown in Table A of the Appendix). However, in 2012 and 2014, outside spending reached the 90% and 95% significance thresholds, respectively. One factor that might have contributed to outside spending’s insignificant impact in House races before 2014 could be that outside, non-campaign affiliated groups were adjusting to the new post-

_Citizens United_ legal environment. In this environment, Super PACs and similar organizations, as mentioned, cannot directly coordinate with traditional campaigns – they may have spent their money less effectively and efficiency due to the relative novelty of the campaign landscape. This is corroborated by the fact there is a significant difference between my traditional spending variable and my outside spending variable in the pooled model, when testing the hypothesis of whether they are equal, with the latter having a coefficient of a smaller magnitude. The difference is \((-0.113-(-2.058)) = 1.945\) (p<0.001), so, in a one-sided t-test, the
hypothesis that the effects of outside spending are greater than or equal to the effects of traditional spending is rejected.

Next, with Equation 2, I was able to directly compare the significance of the interaction between the Citizens United dummy, traditional spending, and the second interaction between the Citizens United dummy and outside spending. I do this because I would like to see whether there are (1) a significant difference between the effects of my outside spending variable before and after Citizens United and (2) a significant difference between the effects of my traditional spending variable before and after Citizens United. Table 2 depicts the same regression with differing time dummies, as I had previously explained, including 2010 as “post-Citizens United” on the left and excluding 2010 as “post-Citizens United” on the right.

Table 2: Equation 2 Results

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Including 2010 Post-CU</th>
<th>Excluding 2010 Post-CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Differences of Traditional Spending</td>
<td>-2.075</td>
<td>-2.342</td>
</tr>
<tr>
<td></td>
<td>(0.197)**</td>
<td>(0.164)**</td>
</tr>
<tr>
<td>Log Differences of Outside Spending</td>
<td>0.150</td>
<td>0.022</td>
</tr>
<tr>
<td></td>
<td>(0.109)</td>
<td>(0.084)</td>
</tr>
<tr>
<td>Interaction Term of Time Dummy and Log Differences of Traditional Spending</td>
<td>0.032</td>
<td>0.746</td>
</tr>
<tr>
<td></td>
<td>(0.244)</td>
<td>(0.244)**</td>
</tr>
<tr>
<td>Interaction Term of Time Dummy and Log Differences of Outside Spending</td>
<td>-0.409</td>
<td>-0.330</td>
</tr>
<tr>
<td></td>
<td>(0.136)**</td>
<td>(0.132)*</td>
</tr>
<tr>
<td>Time Dummy</td>
<td>-0.738</td>
<td>1.134</td>
</tr>
<tr>
<td></td>
<td>(1.10)</td>
<td>(0.634)</td>
</tr>
<tr>
<td>Incumbent President Vote Share</td>
<td>0.493</td>
<td>0.494</td>
</tr>
<tr>
<td></td>
<td>(0.021)**</td>
<td>(0.021)**</td>
</tr>
<tr>
<td>Challenger Quality</td>
<td>-1.328</td>
<td>-1.347</td>
</tr>
<tr>
<td></td>
<td>(0.387)**</td>
<td>(0.386)**</td>
</tr>
</tbody>
</table>
Note: Standard errors in parentheses. ** p<0.01, * p<0.05

In both models, there were significant negative interactions between outside spending and the post- Citizens United indicator. In contrast, the interaction between traditional spending and the post-Citizens United indicator was only significant in the model exclusive of 2010, and in this case the interaction was positive (rather than negative). In both models, the outside spending and post-Citizens United interaction term signals that the difference in challenger spending was a raw magnitude of about 0.3 (excluding 2010 from post-decision) to 0.41 (including 2010 in post-decision) percent more effective after the ruling (i.e., larger magnitude, with a negative effect). It also signals that the difference in traditional spending was about 0.03 (including 2010 in post) to 0.75 (excluding 2010 in post) percent less effective in damaging the incumbent’s vote share. The significant effect on the post-Citizens United interaction with outside spending could be due to campaigns becoming more reliant on money outside of their direct control - thus, differences in magnitude of outside spending start to see more of an impact on voter share due to initial
positive returns. However, as before, traditional expenditures and outside expenditures still have statistically different effects; an F-test of whether the effect of outside spending, including the interaction term, post-\textit{Citizens United} equals the effect of traditional spending, including the interaction term, post-\textit{Citizens United} measures a significant difference at the p-value < 0.001.

In looking at Table 2, one can see the difference between traditional and outside spending after the ruling materialize; the coefficients on the traditional spending difference plus its corresponding interaction term exceed the magnitude on the coefficients of the outside spending difference plus its respective interaction term (based on Table 2 including 2010, -2.075+0.032<0.150+[-0.409]; excluding 2010, -2.342+0.746<0.022+[-0.330]), giving credence to my earlier argument that spending from Super PACs and other outside groups, due to either learning curves at the outset or lack of coordination with campaigns, might have more limited impacts on vote share.

Additionally, the fact that the post-\textit{Citizens United} interaction with traditional spending is insignificant in the model inclusive of 2010 but significant in the model exclusive of 2010 after the ruling corroborates the argument that 2010 was a year in which traditional campaigns may have still been adjusting to better suit the new environment.

Finally, regarding \textit{Equation 3} and open seat races, the results are outlined in Table 3 (including and excluding 2010 in post-\textit{Citizens United} on the left and right, respectively. The new dependent variable is the Democratic Congressional candidate’s vote share.
Table 3: Equation 3 Results, Including and Excluding 2010 in post-*Citizens United*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Time Dummy Including 2010 Post-CU</th>
<th>Time Dummy Excluding 2010 Post-CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Differences of Republican and Democrat Traditional Spending</td>
<td>-3.195 (0.834)**</td>
<td>-2.747 (0.527)**</td>
</tr>
<tr>
<td>Log Differences of Republican and Democrat Outside Spending</td>
<td>-0.146 (0.422)</td>
<td>-0.542 (0.277)</td>
</tr>
<tr>
<td>Interaction of Time Dummy with Log Differences of Republican and Democrat Traditional Spending</td>
<td>0.919 (9.87)</td>
<td>0.651 (0.607)</td>
</tr>
<tr>
<td>Interaction of Time Dummy with Log Differences of Republican and Democrat Outside Spending</td>
<td>-0.148 (0.452)</td>
<td>0.352 (0.321)</td>
</tr>
<tr>
<td>Time Dummy</td>
<td>-18.759 (4.55)**</td>
<td>4.553 (1.01)**</td>
</tr>
<tr>
<td>Previous Democrat Incumbent</td>
<td>0.034 (1.59)</td>
<td>1.907 (1.49)</td>
</tr>
<tr>
<td>Quality Republican Candidate</td>
<td>-1.230 (0.810)</td>
<td>-0.842 (0.738)</td>
</tr>
<tr>
<td>Quality Democrat Candidate</td>
<td>1.884 (0.835)*</td>
<td>1.770 (0.760)*</td>
</tr>
<tr>
<td>Democrat President Vote Share</td>
<td>0.465 (8.84)**</td>
<td>0.454 (0.048)**</td>
</tr>
<tr>
<td>Democrat President Approval Interaction</td>
<td>-0.291 (0.139)*</td>
<td>-0.307 (0.124)*</td>
</tr>
<tr>
<td>Democrat President Approval</td>
<td>0.376 (0.128)**</td>
<td>0.405 (0.114)**</td>
</tr>
<tr>
<td>InDemParty</td>
<td></td>
<td>-22.584 (4.03)**</td>
</tr>
<tr>
<td>Constant</td>
<td>43.998 (5.26)**</td>
<td>43.602 (4.76)**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.80</td>
<td>0.83</td>
</tr>
</tbody>
</table>
While the difference between Democrat and Republican spending in open races has significant ramifications for the winner of the race (shown by the log differences in Republican and Democrat traditional spending), differences in outside spending do not have a significant effect. Moreover, *Citizens United* appeared to have no significant effect on the impact of outside spending (interaction of time dummy with log differences of Republican and Democrat outside spending). The same is true for post-*Citizens United* traditional spending. This could be due to several factors. First, primary spending is included in the totals due to the inability to differentiate between primary and general election spending in the data. Candidates for open seats might face brutal, contested primaries due to the lack of the strong incumbent, and high amounts of spending, both inside and outside, could be spent in those races. It is possible for these expenses to have weak effects on the general election outcome, thus distorting the overall picture for outside spending. Also, outside groups may be more hesitant to spend aggressively in open races due to lack of familiarity with the candidates and a smaller incumbent advantage, thus lowering their efficacy. In essence, the information may be too sparse to conclusively determine outside spending’s impact on open races after *Citizens United*.

In general, I found that traditional spending has a larger impact on incumbent vote share than outside spending, leading me to reject my first hypothesis (H1). I then examined my second hypothesis (H2) and found that, in the cases utilizing both time dummy variables, outside spending has a significant increase in magnitude in its impact post-ruling (H2b), while traditional spending had a significant decrease in its impact only when 2010 was excluded from the post-ruling time dummy (H2a) (though it was not significant when using the time dummy including 2010); therefore, I can reject the hypothesis that there was no change in the effects of the
spending. Finally, for open races (H3), I fail to reject the hypotheses that the traditional spending’s impact is equal before and after the ruling and that outside spending’s impact is equal before and after the ruling.

**Conclusion**

Building off of previous literature, it appears conclusive that *Citizens United* affected the impact of outside spending on candidate vote share. My results also indicate that it has insignificant effects for open seats and increasing returns for challengers, though some limitations in the dataset may account for that. Because *Citizens United* and outside spending without limits, particularly among Super PACs and nonprofits, are relatively new phenomena in their size and scope, extensive research has not yet been completed on how they might have either changed or corroborated the conventional wisdom regarding campaign spending’s impact. This study aims to begin to develop an understanding not only how the electoral landscape has changed, but also whether those changes have concrete impacts on election results.

More broadly, it will be interesting to see what changes will come as campaigns get used to the new environment. I did not make a normative judgment on *Citizens United*, but I did hope to point out what concrete impact it had on the power of spending. My studies suggest that we have started to see some of these changes come to fruition, with a growing impact of the difference between challenger and incumbent outside spending; however, will the effects vote share last, or are they temporary due to the ruling’s novelty? Have the actual components and infrastructure of campaigns changed since the ruling, or are we only dealing with the growth of campaigns’ magnitude. Time and further studies will help answer some of these questions, but I hope to begin to touch on them with my analysis.
References


Data came from The Center for Responsive Politics at opensecrets.org, with explanations for the data collection at https://www.opensecrets.org/outsidespending/rules.php, and Gary Jacobson
Appendix:

Table A: Regressions for Each Election Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Differences of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional Spending</td>
<td>-3.856</td>
<td>-2.364</td>
<td>-3.306</td>
<td>-1.359</td>
<td>-1.939</td>
</tr>
<tr>
<td></td>
<td>(0.381)**</td>
<td>(0.274)**</td>
<td>(0.314)**</td>
<td>(0.238)**</td>
<td>(0.376)**</td>
</tr>
<tr>
<td>Incumbent President Vote</td>
<td>0.203</td>
<td>0.473</td>
<td>0.449</td>
<td>0.653</td>
<td>0.395</td>
</tr>
<tr>
<td></td>
<td>(0.056)**</td>
<td>(0.047)**</td>
<td>(0.042)**</td>
<td>(0.035)**</td>
<td>(0.082)**</td>
</tr>
<tr>
<td>Log Differences of</td>
<td>-0.355</td>
<td>-0.060</td>
<td>-0.088</td>
<td>-0.202</td>
<td>-0.525</td>
</tr>
<tr>
<td>Outside Spending</td>
<td>(0.206)</td>
<td>(0.133)</td>
<td>(0.160)</td>
<td>(0.109)</td>
<td>(0.175)**</td>
</tr>
<tr>
<td>Redistrict</td>
<td>-2.169</td>
<td>1.673</td>
<td>1.365</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.68)</td>
<td>(2.79)</td>
<td>(3.78)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenger Quality</td>
<td>-1.021</td>
<td>-0.470</td>
<td>-2.079</td>
<td>-0.253</td>
<td>-1.182</td>
</tr>
<tr>
<td></td>
<td>(1.06)</td>
<td>(0.907)</td>
<td>(0.937)*</td>
<td>(0.647)</td>
<td>(1.09)</td>
</tr>
<tr>
<td>Freshman</td>
<td>0.028</td>
<td>-0.187</td>
<td>-3.229</td>
<td>-2.099</td>
<td>-3.225</td>
</tr>
<tr>
<td></td>
<td>(1.42)</td>
<td>(0.887)</td>
<td>(1.03)**</td>
<td>(0.633)**</td>
<td>(1.08)**</td>
</tr>
<tr>
<td>Constant</td>
<td>42.545</td>
<td>30.442</td>
<td>28.969</td>
<td>19.818</td>
<td>35.163</td>
</tr>
<tr>
<td></td>
<td>(3.15)**</td>
<td>(2.52)**</td>
<td>(2.48)**</td>
<td>(4.33)**</td>
<td>(4.48)**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.53</td>
<td>0.68</td>
<td>0.69</td>
<td>0.80</td>
<td>0.56</td>
</tr>
<tr>
<td>$N$</td>
<td>170</td>
<td>154</td>
<td>208</td>
<td>166</td>
<td>116</td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses. ** p<0.01, * p<0.05