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# Profiling a Polarizing Congressional District: An Econometric Approach

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*Profiling a Polarizing Congressional District: An Econometric Approach*

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## Introduction

According to the most recent Gallup poll, a miniscule 13% of American citizens approve of the way Congress is handling its job, and as recently as November the approval rating hit an all-time low of 9%.<sup>1</sup> These historically low approval ratings align directly with another historically low metric. The Pew Research Center recently confirmed that the 113<sup>th</sup> Congress's first session will mark the least productive year in terms of substantive legislation passed in over two decades, with a mere 55 laws passed (Desilver). Americans' adamant disapproval of Congress is evidently a function of the deficiency of passed legislation they rightfully expect from the House and Senate. At the same time, it would be absurd to think that politicians' desire to serve in Congress is to not advance public policy. So how can it be that if the American public is so displeased with policy inaction, and Congressmen, whether via intrinsic motivation or because of promises made to constituents, are motivated to pass laws, that legislation is simply not being passed?

Inaction and the associated public frustration with the legislative branch is a result of the rampant growth in partisanship brought on by ideological polarization. Political polarization refers to the increasing divergence between Democratic and Republican legislators' general viewpoints. Representatives' strict adherence to consistent ideologies and party platforms results in distinct, adversarial parties that cannot operate effectively in a governmental system requiring broad support and compromise to advance legislation.

Despite obvious public disapproval of Congress's conduct, some academics believe that polarized politics are not to blame for congressional ineptitude and may even be somewhat

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<sup>1</sup> See References: Gallup, Inc.

beneficial.<sup>2</sup> Abramowitz (2010, 160-170) contends that divided party government is more to blame for legislative ineffectiveness than polarization. Brooks and Geer (2007) suggest that incivility brought upon by polarization may positively affect political engagement. However, recent scholarship has unequivocally determined that polarization does lead to legislative ineffectiveness and gridlock. Sinclair (2006, 358) found that 42% of bills failed in the 103<sup>rd</sup>-107<sup>th</sup> Congresses, opposed to just 27% in the 91<sup>st</sup>, 95<sup>th</sup>, and 97<sup>th</sup> Congresses. Mann and Ornstein (2012, 90-91) highlight examples of pure ineffectiveness caused by bitter polarization. For example, a bill that passed the Senate by a vote of 98-0 took nearly four weeks to become enacted due to unnecessary filibusters mounted from the opposing party. Polarization devastates the legislative capacity of Congress, resulting in legislatures that consistently fail to advance public policy, justifying the public's scathing disapproval of congressional performance.

### **Contexts of Party Conflict**

As troubling as today's polarized environment may be, asserting that divisiveness in politics is a new phenomenon would be naïve. Politicians are nothing if not passionate, and throughout the nation's history, statesmen from opposing parties have zealously attempted to advance their policy goals at the expense of rival parties. Brownstein (2007) traces the dynamic history of contention between the two parties and ultimately identifies four distinct phases of party interaction. The first phase, stretching from 1896 through 1938, was an era of hyper-partisanship that closely resembles the current polarized environment. An era of sustained bipartisanship beginning with the presidency of Franklin Delano Roosevelt and concluding around the time of Lyndon Johnson's 1964 reelection and the civil rights movement defined the

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<sup>2</sup> Discussed at length later is a report published in 1950 by the American Political Science Association that urges parties to differentiate themselves to offer the public more policy alternatives.

second phase. The third phase, from the mid-1960s until the mid-1990s, was a time of transition in which the forces propagating cooperation began to diminish, followed by the final phase beginning roughly in the late 1990s: the current state of extreme partisan polarization.

Ironically, in the heart of the period Brownstein called “a golden age of statesmanship and cooperation in Congress,” the American Political Science Association’s Committee on Political Parties published an extensive report expressing its dismay regarding the state of political parties. The report called for extensive reformation of the two parties. The committee stressed the need for more internal cohesion among the parties, the emergence of a more effective opposition party, intense loyalty from the members of both parties, more involvement from the parties’ National Committees, and, most importantly, an illumination of the differences between Democratic and Republican platforms, all with the aim of providing the American electorate with a more democratic, responsible, and effective government. The authors alleged that the necessary party distinctions would not cause the parties to differ unusually and that increasing focus on party programs would not elicit an ideological wall between the parties (Toward a More Responsible Two-Party System). The desire for transformed parties most likely resulted from the notion that although Republicans tended to be conservatives and Democrats tended to be liberals, the presence of conservative Southern Democrats and moderate and liberal Northern Republicans made these associations unclear, blurring important policy alternatives that constituents ought to have and know about in a democratic society. The publication is mostly theoretical in nature and largely refrains from specifying political actors that drove the committee’s dissatisfaction, but the authors do deem public distinction between

national Democrats and Dixiecrats<sup>3</sup> as “antagonistic,” lending credence to the legitimacy of these two groups’ presence as motivation (18). Mann and Ornstein (2012, xii) also suggest that the political scientists’ frustration with Southern Democrats’ blocking of progressive social policies in Congress inspired the report. While the Southern Democrats brought conservatism to the Democratic Party, moderate and liberal Northern Republicans were a force on the other side of the aisle, albeit not as strong as their counterpart. While the prominence of these two factions may have frustrated the APSA’s Committee on Political Parties, the presence of what some referred to as a four-party system often enabled compromise and created an environment in which no party or ideology dominated the legislature. This dynamic in American politics began to change during the civil rights movement. Republican legislators, most notably the Republicans’ 1964 presidential candidate Barry Goldwater, began to stake out more conservative stances in regards to civil rights and equitable treatment of African-Americans, something that still appealed to many southern states’ voters being represented in Congress by Democrats. What followed was a “Southern realignment,” where southern states increasingly elected Republican congressional representatives due to the party’s stance on civil rights legislation. This led to the replacement of conservative Democrats with conservative Republicans in the South as well as overwhelming African-American support of the Democratic Party. Virtually all political scientists agree that this change was a catalyst for polarization, and nearly all studies of polarization are predicated on the notion that significant trends emerged in the early to mid-1970s when the transition’s effects could be seen in legislators’ voting habits.<sup>4</sup>

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<sup>3</sup> The Dixiecrat Party was a conservative faction of the Democratic Party rooted in the southern United States. The party strongly opposed civil rights.

<sup>4</sup> King (2003) and Hetherington (2001) are two such examples.

## Identifying Polarizing Forces: The Public, the Political Elite, and Their Interaction

Early scholarship on polarization usually employed interest group ratings, such as those issued by the American Civil Liberties Union or the United States Chamber of Commerce, to measure a legislator's ideology based on voting behavior. Unsatisfied with these metrics, Poole and Rosenthal (1997) revolutionized the study of polarization by developing a measurement called D-NOMINATE, which subsequently became the currently used measurement, DW-NOMINATE: Dynamic Weighted Nominal Three-Step Estimation. The complex statistical procedure allowed the authors to analyze every roll-call vote in the first 100 congresses and assign legislators scores on a -1 to +1 scale, with -1 being the most liberal end of the spectrum and +1 the most conservative.<sup>5</sup> Nearly all newer research on polarization now uses DW-NOMINATE scores to measure legislators' ideological positions due to the complexity, effectiveness, and accuracy of the metric.<sup>6</sup> The widespread use of DW-NOMINATE indicates an important aspect of modern polarization: that it is characterized by the increasingly extreme ideologies seen from elected officials.

Two competing theoretical bases have emerged to provide frameworks for causal analysis of polarization among today's congressmen. Some scholars claim that the drastic changes America has undergone as a society in the past four decades have resulted in a more polarized electorate and that this public polarization is absorbed appropriately in legislators' voting behavior. Many researchers, however, are hesitant to accept that the electorate has become polarized in their policy preferences, subscribing instead to the long-held view that there are not substantial ideological differences between Americans' political views. These individuals claim

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<sup>5</sup> For a brief explanation of the procedure, visit <http://www.ou.edu/special/albertctr/extensions/fall2005/Poole.pdf> for the various documents found on the authors' website, [voteview.com](http://voteview.com).

<sup>6</sup> Poole and Rosenthal became the first recipients of the Society for Political Methodology's Best Statistical Software Award for their development of DW-NOMINATE.

that polarization among legislators is not driven by divergent viewpoints of the masses but rather is caused by polarization of the political elite, comprised of the politicians themselves, various party leaders, opinion leaders, and political activists who vigorously participate in the political arena. Most proponents of elite polarization posit that any evidence of polarization among the electorate is actually “partisan sorting,” which will be discussed at length in a later section.

### **Societal Change and the Polarized Public**

Some scholars look at the various profound cultural changes the United States has experienced in recent decades and believe this evolution may result in a more polarized citizenry represented by more polarized politicians. Abramowitz (2010) has written extensively in support of popular polarization and makes his case by providing arguments linking trends in educational attainment levels, marriage rates, and age, racial, and gender compositions to polarization, among other factors. Using data from the American National Election Studies, he shows that those who considered themselves politically sophisticated also were those with higher education levels and that these respondents also identified as having more ideologically consistent views. Using the same robust dataset, he demonstrates how married couples have come to represent an important ideologically conservative base for the Republican Party while younger voters constitute an ideologically consistent liberal base for the Democratic Party. He also documents women’s increasing support for the Democratic Party as a potential factor in polarization. Thus, legislators are pulled toward the ideological poles to cater to these crucial, distinct members of their constituencies. As have numerous others, he also points out that growth



in the minority population has contributed to polarization due to minority citizens' propensity to identify with the Democratic Party.<sup>7</sup>

McCarty, Poole, and Rosenthal (2006, 71-138) persuasively credit the notion that societal change in the United States over the last several decades has increased polarization, specifically in regard to economic inequality and increased immigration levels. They begin their study by showing the strong correlation between the widening gap of top/bottom quintile income earners and the gap between Democratic and Republican legislators' ideological stances. Controlling for other demographic factors correlated to income, the authors then estimate a model and find that liberal-conservative ideologies of congressmen are significantly affected by the widening income gap. Further, they conclude that stratification of partisanship by income has grown rapidly over the past forty years, causing a notable rich-poor divide amongst Democrats and Republicans. The authors also find that since the early 1970's, American immigration levels have risen steadily and that these noncitizens are much more likely to have lower incomes than the median constituent in a given location. These noncitizens' ineligibility to vote results in a deficient amount of political pressure for redistributive policies and disproportionate pressure from wealthier voters against such policies, resulting in even more polarization due to income disparities.

Bishop (2008) argues that the increasing division in politics is largely a result of geographic polarization. He coins the term "assortative migration" to refer to the phenomenon of Democrats' moving to Democratic counties while Republicans did the same due to cultural homogeneity of party members. He references many of the aforementioned societal changes and argues that geographical sorting exacerbates these changes' influence on legislator

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<sup>7</sup> See Brewer (2005) for another example.

behavior. Simply put, if an area is full of people with the same opinions and lifestyles, a representative will adopt a strict ideological stance and have little incentive to alter positions. He places particular emphasis on religious individuals and their residential choices, pointing out, for example, that Republican landslide<sup>8</sup> counties have seen enormous growth in the number of survey respondents saying that they regularly attend church services. Many other scholars also point to changing religious views as a major driver of polarization. Using national exit polls, Abramowitz and Saunders (2005, 12-16) find that religion was correlated more strongly with partisanship than income, education, gender, and other demographic characteristics. Dionne (2005, 175-205) provides analysis on religion's effect on polarization, noting that those who identify as more religious are more prone to be conservative Republicans while secular individuals tend to vote Democratic. However, he contends that pundits in the media portray a larger effect than what is true and that regional and racial differences inflate the purported effect religion has on polarization.

### **Electoral and Institutional Explanations for Legislator Polarization**

As stated previously, polarization is characterized by legislators' ideologically divergent voting behavior. Consequently, researchers disagreeing that public opinion drives this divergence are not attempting to further clarify that legislators have become polarized. Rather, they seek to prove that legislators' polarization is a result of the politicians', and other members of the political elite, own ideological divergence. Many scholars have turned to aspects of the electoral system as well as changes in congressional procedure in attempting to explain the increased polarization.

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<sup>8</sup> Bishop (2008, 45) classifies "landslide" counties as those that have over 60% of voters voting for one party in presidential elections (45).

There has been substantial public discussion about the presumed impact on polarization of interest groups' and political action committees' involvement in campaign financing. The sheer growth in the cost of running a campaign warrants such discourse. Abramowitz, Alexander, and Gunning (2006, 83) note that the median spending of winners in House elections grew from just over \$40,000 in 1974 to over \$600,000 in 2002. Surveying the recent literature on campaign finance's relationship to polarization, Barber and McCarty (2013, 31-32) note that associations between the two are subtle and more ambiguous than is widely believed. While claiming that PAC contributions' effects on legislator ideology are minimal if significant at all, they do contend that an increase in reliance on ideologically extreme individual donors for money may force candidates towards the ideological poles to appeal to these voters, although they caution that more research is needed to certify this relationship.

Another suggestion for increased polarization that many casual observers of American politics assume to be significant is the abuse of the redistricting process via partisan gerrymandering. State legislatures, which are often dominated by one political party, control the drawing of congressional districts. The incentive to cunningly craft these districts as to maximize the party's representatives in the federal government is obviously legitimate. However, heated debate has arisen among academics as to the validity of the argument. Grainger (2010, 545-567) found a unique way to test whether state legislatures' control of the process led to polarization. He compares legislatively drawn districts with panel-drawn districts in California and finds that, on average, legislatively drawn districts garner less competitive elections than panel-drawn districts.<sup>9</sup> He shows that as these districts become less competitive,

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<sup>9</sup> California put the redistricting process in the hands of a panel of non-partisan judges (546). These less competitive contests were the result of legislatively-drawn districts containing high, disproportionate concentrations of certain types of voters.

legislators tend to take more extreme voting positions, thus affirming the association between the ability to gerrymander and polarization. Carson, Crespin, Finocchiaro, and Rohde (2007) find that districts experiencing changes due to redistricting have become more polarized than districts that have remained relatively unchanged but acknowledge that the effect is modest. These and other studies similar in nature are, however, outnumbered by scholarship proposing that gerrymandering actually does not lead to polarization. McCarty et al. (2006) assert that polarization results from variances in how Democrats and Republicans represent the same district rather than which districts each party represents. Abramowitz et al. (2006, 78-79) show that redistricting has little or nothing to do with declining competitiveness in House elections, which is the supposed negative ramification of redistricting and partisan gerrymander. Mann (2006, 267-269) points to increases in Senate polarization mirroring polarization in the House as evidence of gerrymandering's insignificance and claims other factors contributing to uncompetitive elections, such as the advantages enjoyed by incumbents, are more explanatory elements. Elsewhere, Mann (2004) assesses what measures could be taken to positively reform the redistricting process as to combat rising polarization, only to conclude that the effect of legislative redistricting is quite modest and perhaps more legitimate factors in polarization are geographical sorting and the parties' regional realignment, both discussed herein.

Political scientists have also been drawn to the nature and structure of congressional elections, particularly primary elections, in their studies of polarization. There are essentially five types of primary elections for congressional elections in the United States: open, closed, semi-closed, blanket/top-two non-partisan, and mixed in which each party has a different primary type. Scholars postulated that closed primaries, those in which only registered partisans can vote, would push more polarized candidates to the general elections, due to the fact that

initially (for the primary) they needn't develop policy platforms catered to those who were not registered to their respective political party. Conversely, open primaries, in which any eligible voter can vote in any party's election, should tend to bring less polarized candidates to the general election. As theoretically sound as these hypotheses may be, the research community has found minimal evidence that primary election types have a notable effect on polarization. The most convincing argument, by Gerber and Morton (1998), demonstrated that representatives from states with closed primaries took much more extreme policy positions, in terms of voting behavior, than the median voter in their district. More recent work has overwhelmingly disproven these results. Ansolabehere, Hanson, Hirano, and Snyder, Jr. (2010) provide perhaps the most extensive analysis on polarization and primary elections. The authors selected states that adopted primary elections and analyzed legislator voting behavior before and after primary elections were made mandatory. They find no discernable change in roll-call voting habits, as measured by DW-NOMINATE, signifying that primary elections of any type do not affect a representative's ideology. The authors also conclude that primary election turnout is only an insignificant factor in explaining polarization. However, they do find that general election competition is negatively correlated with legislator polarization, indicating that the increased competition incentivizes a legislator to converge his or her views away from ideological poles.

Some congressional scholars have attempted to identify causes of polarization by analyzing changes in the internal structure, procedures, and norms of both chambers of Congress. Barber and McCarty (2013, 33-34) note that changes regarding Committee of the Whole procedure allowed easier addition of amendments that the opposing party could introduce to thwart otherwise promising legislation. They also refer to relevant literature arguing that the majority party leadership's power over the congressional agenda has increased, resulting in more

party-line voting. They do, however, acknowledge that both of these changes are specific to the House of Representatives and that increasing polarization levels in the Senate may cast doubt on the significance of these procedural alterations. Mann and Ornstein (2012, 84-100) point to the marked increase in the willingness of congressmen to employ holds and filibusters as a driver of as well as an indicator of polarization.<sup>10</sup> They point out that holds and filibusters historically have been used only on heated issues, and extremely seldom at that, but now these maneuvers have become commonplace. The prevalence of these tactics causes unnecessary delays and party-party disdain, especially in connection with executive appointments.

Roberts (2012, 22-23) explains how the breakdown of a particular congressional norm has contributed to the hyper-contentious political arena: legislators are no longer moving their families to Washington. He notes that wives' increasing likelihood of having careers and subsidized travel contribute to this trend. He contends that congressmen today so often condemn the institution of Congress and the special interest groups occupying the Capitol while campaigning that they fear looking like a hypocrite if they move there themselves. The personal relationships forged among legislators of the 1960s, 1970s, and 1980s (that are not seen frequently today) were invaluable to bipartisan efforts. He rhetorically poses, "If, on the weekend, you stand next to a congressional colleague on a soccer field or sit next to him or her in church, are you less likely to vilify that colleague on the floor of Congress during the next week?"

### **Relating Elite and Mass Polarization: The Role of Party Sorting and Political Activists**

Although some scholars focus on either elite or public polarization, most research concerns itself with the interaction of the two phenomena, particularly with how elite

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<sup>10</sup>Hold: Senate procedural tactic that allows a Senator to prevent a motion from reaching a vote; essentially a disclosed or undisclosed threat to filibuster.

polarization is absorbed by the public. Discussions of this dynamic relationship typically turn to analyses of “partisan sorting” and the importance of political activists. These two aspects of the literature are very rare in that it is widely agreed they are both crucial to understanding the puzzling array of potential causes of polarization.

### **Party Sorting**

Fiorina (2005) vehemently argues that polarization is a phenomenon found solely among the political elite while most Americans remain moderate in their political preferences. These claims are backed by analyses of voters’ policy preferences as derived from the 2000 National Election Studies. Multiple times he shows that citizen positions on a number of political issues are normally distributed across a liberal-conservative spectrum, as opposed to a more bimodal distribution that would be expected if the electorate was truly becoming polarized. Therefore, measures of increasing partisanship or ideological consistency among the electorate must be the cause of something other than polarized policy positions. He claims that the culprit is partisan sorting, which is essentially the electorate’s response to elite polarization. How might this partisan sorting be the cause of polarization? The polarized political elite in both parties have developed more ideologically consistent platforms on a liberal-conservative scale, translating to a cluster of distinct positions that citizens now associate with a certain political party and then “sort” themselves accordingly. Arguably the most notable evidence that party sorting has occurred is provided by Fiorina and Levendusky (2006). In their work, the authors state that party sorting is “the process by which a tighter fit is brought about between political ideology and party affiliation” (53). They show that respondents in the National Election Studies who saw “important differences in what Democrats and Republicans stand for” increased by over 30% to an astounding 76% from 1972-2004 (56-57). Today, the terms liberal and conservative can now

be equated with Democrat and Republican.<sup>11</sup> To contrast, before the aforementioned Southern realignment, there were liberal Republicans as there were conservative Democrats, so the parties were not directly associated with an ideology as they are today, and one could have perhaps found a voter who staunchly advocated for 2<sup>nd</sup> Amendment rights while favoring heavy government spending, due to the fact that he or she was unaware that those positions belonged to different parties' platforms. McCarty and Barber (2013, 25) note that few scholars dispute that serious partisan sorting has occurred and that sorting creates a problematic interplay between elites and voters. As voters sort in response to polarization among elites, the parties then have less reason to craft policy to entice independents, moderates, or members of the opposing party, perpetuating the problem at hand. To prove that party sorting is truly a response to elite polarization, scholars simply needed to show that polarization among politicians preceded increases in partisan identification. Hetherington (2001, 621-623) used the distance (divergence) between average DW-NOMINATE scores of House Republicans and Democrats from the 81<sup>st</sup> to the 104<sup>th</sup> Congress as a measure of polarization and compared this score to answers related to partisanship from the National Election Studies. He found that the increased distance preceded increases in measures of mass partisanship, indicating that the clearer ideological stances seen in government resulted in partisan polarization via response to elite cues (sorting) in the electorate. Layman, Carsey, and Horowitz (2006, 95-96) echo these findings, noting that ideological polarization among the electorate became evident in the 1980s, succeeding congressional polarization documented in the 1970s. Convincing evidence of party sorting comes even from those that argue mass polarization causes elite polarization, when Saunders and Abramowitz (2006) find "a substantial increase in the ability of citizens to apply

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<sup>11</sup> Liberal and conservative measurements of the public are derived from NES questionnaires. The questions ask a variety of policy-related questions, and the liberal-conservative scale is typically based on the role and size of government (where liberals favor government intervention while conservatives oppose it).



ideological labels to the political parties” (178). Agreement about party sorting is why when discussing studies of polarization trends and potential causal relationships, partisanship and ideology have often been interchanged as the dependent variable representing polarization.

### **Political Activists’ Polarization and Increasing Influence**

Thus far, analyses regarding the political elite have been constrained to discussions of legislators/politicians. However, other individuals comprising the political elite consist of interest group leaders, campaign workers, and most importantly, those known as political activists. All members of the political elite are effectively political activists, but scholars have focused on non-elected individuals who actively participate in campaigns as potentially polarizing activists. Those considered activists are, and always have been, more polarized than the general public. Voters that actively participate in the political process are likely to have extreme opinions and views fueled by strong emotions, often times regarding just one or two aspects of policy (known as “issue activists”).<sup>12</sup> Considering that activists have always been more polarized political actors, the research questions surrounding them have been twofold. First, have activists become more polarized recently? Second, has activists’ influence on politicians voting behavior grown?

Research has answered both questions resoundingly in the affirmative. Fiorina and Abramowitz have debated for years over whether or not the entire public is polarized, but they agree that activists crucially contribute to polarization. Saunders and Abramowitz (2006, 3-7) show that active partisans were significantly more polarized than the overall electorate and only quarrel with Fiorina’s claim that this group of voters represents a small segment of the

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<sup>12</sup> Most scholars derive classifications of political activism from national exit polls, and normally define activists as those who participate in at least two campaign-related activities beyond voting. See Abramowitz and Saunders (2005, 6) for example.

electorate.<sup>13</sup> Sinclair (2006, 25-27) shows that those identifying with a party and classifying as activists were truly polar opposites on their policy views. For example, in a 2004 poll, one can see the difference between Democratic and Republican activists differ by 72% on a question gauging the size of government, while non-activist but still party-affiliated voters differed by a mere 13%. Although most scholars disagree with claims that polarization is present amongst the public at large, studies such as these may serve as proof that important societal trends and cultural changes do have an effect on polarization, just that its effects are seen in the activist population.<sup>14</sup>

Activists have not only become more ideologically polarized, but their relative influence on the political process has increased. Although a previously cited study found no relationship between primary election turnout and polarization, several scholars have turned to primary election participation as a key component driving legislator polarization. King (2003) first summarizes a previous study of his that quantifies the idea that activists are more ideologically extreme. He then goes on to show how declining voter turnout in congressional primaries causes primaries to be dominated by activists, who will in turn elect polarized legislators. Fiorina and Levendusky (2006, 70) share the concern that activist-packed primaries could be a driver of polarization, pointing out that more than 80% of the voters in 2004 primaries who identified themselves as activists were also partisans. These activists represent a small chunk of the electorate at large, but the lack of visibility in congressional elections, especially primaries, causes these activists to be disproportionately represented in the voting population. Fiorina and Abrams (2008) most effectively summarize a possible reconciliation of mass and elite

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<sup>13</sup> Fiorina (2005, 48) acknowledges that deeming a certain percentage significant is indeed subjective.

<sup>14</sup> See Layman, Carsey, and Horowitz (2006, 93-94).

polarization: “[T]he consensus in the research community is that macro-level changes in American politics and society led to greater homogenization of party elites and activists, a process that reinforced itself as more distinct parties sent clearer cues to the electorate, which gradually sorted itself out more neatly than it had been sorted at mid-century” (581).

### **Model Development: Data Overview**

Research exploring the extremism of modern politicians has yielded little agreement and reveals that the issue is complex and multifaceted. Such a complicated area of study requires several decisions to be made about the nature of any research endeavor. Scholars must make an initial decision as to which chamber of Congress they will analyze. The Senate has experienced notable polarization, but the majority of researchers focus on the House of Representatives because it has become significantly more polarized as a whole than the Senate and because it allows for more granular examination.<sup>15</sup> Some researchers look at Congress’s behavior as a whole and do not concern themselves with individual members. I have chosen to collect and analyze data from United States congressional districts in order to effectively profile areas that elect polarized representatives. Pinpointing the characteristics of congressional districts allows for more data to be analyzed compared to studies of aggregate behavior of the House, and can reveal factors that result in extreme legislative behavior.

The most commonly used measure of legislator polarization is the DW-NOMINATE procedure developed by McCarty, Poole, and Rosenthal.<sup>16</sup> Polarization scores for every single congressman are publicly available from the authors on [voteview.com](http://voteview.com), and serve as the

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<sup>15</sup> See Abramowitz et al. (2006) or Carson et al. (2010) for just two examples.

<sup>16</sup> Poole and Rosenthal (1997) was the initial publication of the procedure.

dependent variable in all of my analyses.<sup>17</sup> Also, to truly profile a district, one must accumulate its demographic information. I acquired demographic data from every congressional district in the United States using the Census's American Community Survey for the past four congresses (109<sup>th</sup>-112<sup>th</sup>), excluding the current session because polarization scores are not final. The somewhat limited scope of demographic data offered from the Census simply means that my models' conclusions apply to very recent polarization trends. Many studies have made use of the American National Election Studies' surveys on political opinion to gauge district opinions. However, I came across a handful of research that suggested drawbacks to using data from the survey.<sup>18</sup> Using demographic data as opposed to survey data, my analyses become inherently inferential because these variables do not specifically gauge opinion. In my analyses, I have selected appropriate, clear metrics to align with theoretical postulations and will draw on the current literature when making inferences as to how demographic variables translate to opinion. Primary and general election turnout data was procured from the Federal Election Commission's website, fec.gov. District's presidential election results were used, as is common in studies of polarization, to gauge a district's partisan leaning, and were obtained from SwingStateProject.com.<sup>19</sup> This array of district level data allows for the development of statistical models that can test many of the competing theories present in the current literature on the causes of intense polarization.

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<sup>17</sup> These files also contain a legislator's party identification, which is used as the dependent variable in a later model.

<sup>18</sup> See Fiorina (2008, 569) for an acknowledgment of survey data concerns.

<sup>19</sup> See King (2003, 19-20) for an example of presidential vote share being used to measure district partisanship. My analyses follow this method closely. I am hesitant to use data from a ".com" source, but upon further review, I am convinced of the data's credibility. See the data files found at <http://www.swingstateproject.com/diary/4161/>

## **Model Development: Variable Selection and Preparation**

The Census provided a wide variety of demographic variables for a given congressional district. I experimented with numerous variables that could have been remotely related to a potential cause, and ultimately decided on a select group that could accurately test a number of the theories presented in the current literature. The high degree of multicollinearity present with demographic variables, that are often related, strongly affected which variables I could include. Before I began constructing models, I needed to transform the observations for legislator polarization to absolute values. I am interested in the general extremism of the representative rather than whether he or she is extremely liberal (-1) or extremely conservative (+1), and a scale ranging to -1 would be essentially be treated as “negative” extremism, which would pose problems. However, many polarization researchers argue that the Republican Party has become more conservative than the Democratic Party has become liberal, and I test this assertion in a separate regression model. My models will be simple linear Ordinary Least Squares (OLS) regressions as I was not convincingly led to believe a different functional form was needed to fit this data.

## **Variable Description**

Without using survey data that asks questions regarding policy opinions, acquiring variables that test elite and activist polarization was somewhat difficult. Considering the painfully low attention that congressional elections get on a national level, both primary and general election turnout serve as accurate measures of a district’s activism.<sup>20</sup> Also, although some proponents of mass polarization suggest educational attainment trends are a reflection of societal shifts affecting polarization, measures of educational attainment actually can serve as an

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<sup>20</sup> In the review of the literature, aspects of the electoral system were suspected to have polarizing influences, and these metrics also analyze the extent that electoral structure contributes to a representative’s extremism.

effective proxy for activism. It is widely accepted in political science that educational attainment is the best predictor of a person's propensity to be a political activist.<sup>21</sup> I used the percentage of the population who had attended at least some college as a measure of district education.<sup>22</sup> For these three variables that represent elite polarization, I expect different relationships.

Considering that primaries are dominated by activists, I propose that more voters in a primary will lead to a more polarized legislator due to his needed adherence to activist views. However, I expect that more voters in the general election will result in a less polarized legislator because more ordinary citizens are engaged, and therefore must be represented by the legislator. Some might argue that this same relationship should apply for primaries, as increased turnout would drown out activist influence, but primaries have substantially less visibility than general congressional elections (which are still quite obscure themselves) and are generally not as activist-dominant. The remaining variables are used to gauge the extent that societal change contributes to polarization. There is considerable debate as to whether or not societal change polarizes activists or the entire population, and relating these variables' significance to hypotheses in the literature seeks to add to the debate. These demographic variables are all measured as percentages of the district population, with the exception of the monetary amount of public assistance and the foreign born population. Three metrics were used in the model to account for economic inequality within a district: the unemployment rate, the amount of public assistance a family receives, and the poverty rate for families. As economic inequality is said to polarize legislators, I expect these variables to have a positive relationship on polarization, where increases in these percentages will result in increases in representative polarization. The foreign born population and minority population were also included in the models, to represent

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<sup>21</sup> See Hillygus (2005) for one example. This relationship is universally accepted in political science.

<sup>22</sup> Introducing more than one metric for education introduced multicollinearity.

immigration and race as potential polarizing factors. Marriage rates were also hypothesized to have a polarizing effect, and a district's percentage of married couple families was included to test this supposed positive relationship. To account for the notion of geographical polarization, I included a metric that documented how long a family had lived in the same house within that district. I expect that those who have lived in the same house for over a year will tend to elect polarized legislators. Lastly, I included the female population of a district as another potentially polarizing factor, as it has been purported to affect legislator polarization. Subsequent models include all of these same explanatory elements, with additional variables related to partisanship and party identification.

Summary Statistics						
Variable	Relationship Prediction	Observations	Mean	Std. Dev	Min	Max
Representative Polarization		1796	0.50	0.20	0.01	1.29
Primary Turnout	+	1765	60465.35	43515.34	0.00	233034.00
General Turnout	-	1737	231685.60	68074.40	50550.00	480900.00
Some College	+	1740	26.41	5.88	9.70	40.80
Unemployment	+	1740	8.61	3.29	2.80	27.50
Cash Public Assistance	+	1740	3517.69	1215.20	1210.00	9099.00
Family Poverty Rate	+	1740	10.90	5.17	1.80	38.90
Foreign Born	+	1740	89566.54	77368.03	3527.00	419149.00
Minority	+	1743	25.51	17.72	1.94	88.14
Married Couple Families	+	1740	48.80	7.82	19.10	66.20
Same House	+	1740	84.33	3.54	68.78	94.60
Female	+	1743	50.80	1.03	45.50	54.90

### Econometric Analysis

There are a few areas of potential bias in my models. As stated previously, variable selection was partly contingent upon containment of multicollinearity amongst variables.

Demographic data often faces the issue of multicollinearity, as income variables are related

to education variables, education variables are related to unemployment levels, and so on.<sup>23</sup> As a general rule of thumb, I ensured that variables in my initial model did not have variance inflation factors (VIF) in excess of five to best alleviate the issue of multicollinearity.<sup>24</sup> When testing for heteroskedasticity using the traditional White Test, I did find that significant heteroskedasticity presented itself. To account for this bias, I employ robust standard errors in all models. Robust standard errors also alleviate problems of potential serial correlation.<sup>25</sup> Perhaps the most likely source of bias comes in the form of omitted variable bias. There are dozens of speculated causes of polarization, and finding district-level data on several potentially significant sources was not possible. One popular cause yet to be addressed is the polarizing influence of the news media. Mutz (2006) demonstrates that the large numbers of sources of political news along with the prevalence of entertainment-based political news are elements dividing public opinion. She also notes that the uncivil, and unrepresentative, discourse so often displayed in the media causes many viewers to view opposing opinions with more disdain, adding to the polarizing influence the media can have.<sup>26</sup> As necessary as this element may be, district-level data for media preferences or the media's influence are not available. Also, the effects of congressional procedure are normally assessed when looking at Congress as a whole, and therefore cannot be endogenous in district-level models, so any explanatory importance institutional changes have on polarization trends will be omitted. District-level religious data is not included in the American Community Survey and is typically found in exit polls or other surveys accompanying elections. The American Community Survey did contain median age data for the last three Congresses, but

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<sup>23</sup> See McCarty et al. (2006, 72-113) for discussions of correlation among common demographic variables.

<sup>24</sup> See Appendix Section II. The fixed effects model and the model including party identification are notably affected by multicollinearity, as shown by high VIF's of certain variables.

<sup>25</sup> Considering my data is panel data with a small amount of Congresses, it is highly unlikely autocorrelation is problematic in my models. Robust standard errors would alleviate the problem if for some reason it was substantially present.

<sup>26</sup> See Prior (2007) for additional research on the nature of media and polarization.



the associated survey for the 109<sup>th</sup> Congress included different metrics for age, and therefore median age was omitted as to not serve as a bottleneck in maximizing data inclusion. I was only able to procure campaign finance data on a select sample of states, and a condensed model with this variable is included in the appendix.<sup>27</sup> I did not find a way to formally test for the effects of gerrymandering, but models introducing district partisanship may shed light on redistricting’s role in polarization.<sup>28</sup>

### Initial Model

<b>Model 1</b>					Number of Observations	1709
					F( 11, 1697)	15.89
					Prob > F	0
					R-squared	0.0803
					Root MSE	0.19446
		Robust HC3				
Representative Polarization	Coefficient	Std. Err.	t	P>t	[90% Confidence Interval]	
Primary Turnout	1.97E-07	1.24E-07	1.58	0.114	-7.93E-09	4.01E-07
General Turnout	-1.90E-07	1.04E-07	-1.82	<b><u>0.069</u></b>	-3.62E-07	-1.81E-08
Some College	0.002684	0.0009956	2.7	<b><u>0.007</u></b>	0.0010459	0.004323
Unemployment	0.0021966	0.0024215	0.91	0.364	-0.0017886	0.006182
Cash Public Assistance	0.0000123	5.03E-06	2.45	<b><u>0.014</u></b>	4.07E-06	2.06E-05
Family Poverty Rate	-0.0023976	0.0017541	-1.37	0.172	-0.0052844	0.000489
Foreign Born	2.38E-08	8.12E-08	0.29	0.77	-1.10E-07	1.57E-07
Minority	-0.0002695	0.0003643	-0.74	0.459	-0.000869	0.00033
Married Couple Family	0.0065406	0.0009278	7.05	<b><u>0.000</u></b>	0.0050137	0.008067
Same House	-0.0090449	0.0016905	-5.35	<b><u>0.000</u></b>	-0.011827	-0.00626
Female	0.01826	0.0057215	3.26	<b><u>0.001</u></b>	0.0092098	0.028042
_cons	-0.0714115	0.2903284	-0.25	0.806	-0.54922	0.406397

<sup>27</sup> See Section IV of Appendix. The Campaign Contributions metric is insignificant, perhaps providing more support for the ambiguity of campaign finance’s effects on polarization.

<sup>28</sup> If a district’s partisan make-up is a significantly polarizing factor, one may infer that the state legislature drawing the districts was aware of the partisan dynamic of the state and drew maps accordingly, but this assumption would need to be put to much more formal tests.

I chose to perform hypothesis tests using one-sided, 90% confidence intervals because I am predicting coefficients to be negative or positive, not simply different from zero. The regression analysis above shows for which variables the null hypothesis can be rejected, affirming which variables truly have a significant relationship with representative polarization.<sup>29</sup>

Six different variables, representing indicators of both mass and elite polarization, are statistically significant drivers of polarization in the model. The percentage of married coupled families proved to be a strong predictor of legislator polarization. Marriage rates represent just one societal change that is alleged to polarize legislators. Marriage rates are historically low and have been declining, and scholars have suggested that married families tend to be polarizing agents, particularly in the conservative direction. The proportion of people who had lived in their same house for over a year proved to be significant, but the relationship was oddly in the wrong direction, suggesting that those who have lived in a district longer tend to elect less polarizing officials. My intuition behind including this variable in the model was that those districts who had a high concentration of people living in their same house would mean that these citizens were more ingrained in their communities and lived similar lifestyles, things that Bishop (2008) suggested seriously affected polarization. The aforementioned omitted variables may play a role in causing significance, or perhaps inclusion of this metric was unwarranted. The model also showed that districts with more females tend to be more polarized. This is a demographic factor that related directly to Democratic Party polarization, and subsequent models accounting for partisanship will reveal more about this relationship, but nonetheless this relationship supports the notion that societal shifts may polarize legislators. The education level of a district, as measured by those citizens who attended at least some college, proved to be a

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<sup>29</sup>  $P > t$  represents a variable's p-value. Variables with p-values under 0.10 are deemed significant, and are bolded in the regression outputs.

driver of polarization. Although this variable could be argued by mass polarization as well as elite polarization proponents, as noted above, education is a safe proxy for district activism. The positive relationship produced from this data quantifies the belief that activists are crucial in explaining polarization. Most theory in regards to inequality and polarization attempts to relate incomes to voting behavior, but median income and per capita income both introduced major multicollinearity into models and thus I was left to include the three metrics seen here. Although two of the three variables related to economic inequality are deemed insignificant by this model, on average, districts where citizens received more public assistance tended to elect more polarized legislators. The last predictor of importance was the amount of voter turnout in general elections. Ansolabehere et al. (2010) found that general election competitiveness had a negative effect on legislator polarization, and the results from this model echo the authors' telling conclusion. The insignificance of primary turnout could perhaps be explained by the two competing ideas touched on earlier when discussing the variable's inclusion in the model. Perhaps in some districts, greater turnout does mean that activists' influence are diffused while in other districts larger relative turnouts translates to a wealth of activists that a legislator is compelled to represent.

## Fixed Effects Model

<b>Model 2</b>						Number of obs	1709
						F(454, 1251) =	.
						Prob > F =	.
						R-squared	0.7298
						Root MSE	0.12276
	Robust HC3						
Representative Polarization	Coefficient	Std. Err.	t	P>t	[90% Confidence Interval]		
Primary Turnout	2.67E-07	1.80E-07	1.48	0.138	-2.91E-08	5.63E-07	
General Turnout	-6.54E-07	1.16E-07	-5.61	<b>0.000</b>	-8.46E-07	-4.62E-07	
Some College	-0.0055809	0.00146	-3.83	<b>0.000</b>	-0.0079801	-0.00318	
Unemployment	0.0124726	0.0029	4.3	<b>0.000</b>	0.0077026	0.017243	
Cash Public Assistance	5.34E-06	5.77E-06	0.92	0.355	-4.17E-06	1.48E-05	
Family Poverty Rate	-0.0087918	0.00446	-1.97	<b>0.049</b>	-0.0161358	-0.00145	
Foreign Born	8.47E-07	4.62E-07	1.83	<b>0.067</b>	8.67E-08	1.61E-06	
Minority	-0.0000949	0.0016	-0.06	0.953	-0.0027307	0.002541	
Married Couple Family	-0.001598	0.00486	-0.33	0.742	-0.0096025	0.006407	
Same House	0.0045612	0.00342	1.33	0.183	-0.0010747	0.010197	
Female	0.0152849	0.01001	1.53	0.127	-0.0011973	0.031767	

In many districts, a legislator’s polarization score did not change across congresses. This model is a fixed effects model and factors out instances in which there was no change in polarization, and therefore the new coefficients are identified off of the variation among districts. One could argue that eliminating such observances results in an unrepresentative sample, but analyzing variable districts may offer us a better look at which district-level changes translate to different, extreme voting behavior. The substantially improved  $R^2$  suggests that this procedure was perhaps more effective in pinpointing polarizing traits. However, when testing for multicollinearity, there were several variables that had variance inflation factors well above the recommended threshold of 5, so this bias may indicate that the initial model is more

effective.<sup>30</sup> Nonetheless, variable significances in this condensed model differ only slightly from the initial regression. Percentage of married couple families as well as the percentage that lived in the same house became insignificant. Family poverty rate as well as the education metric became significant in this model, but in the opposite direction I was expecting. This is somewhat perplexing, and I can only attribute this to omitted variable bias and the multicollinearity issues discussed previously. Interestingly enough, one variable gauging economic inequality, the unemployment rate, did become significant. Unemployment is not a direct measure of inequality by any means, but it is a great measure of a district's general economic performance, and is strongly associated with more economically unequal areas. Foreign born population also became significant in this model, providing some strength to the argument of McCarty et al. (2006) and others who speculate that rising immigration has been a driver of polarization. Two variables relating to activism, general turnout and percentage who attended some college, became even more significant in this condensed model.

### **Model Introducing District Partisanship**

The review of the literature included a lengthy discussion of the impact party sorting has on polarization. Specifically, scholars posit that the phenomenon of party sorting contributes to a false view that cultural and societal differences polarize Americans, who then elect polarized politicians. A simple regression model including a metric of district partisanship along with the variables in the initial model may seek to clarify party sorting, and the extent to which it explains polarization.<sup>31</sup> The strong correlation of polarization and partisanship that defines partisan

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<sup>30</sup> See Section II of Appendix. The variable Some College is obviously severely biased.

<sup>31</sup> District partisanship is measured by presidential vote shares. (65%, 53%, etc.)

sorting has been discussed, but displaying the importance district partisanship has on representatives' polarization can quantify sorting's pervasiveness across variables.

<b>Model 3</b>						Number of obs	1709
						F( 12, 1696)	28.44
						Prob > F	0
						R-squared	0.1503
						Root MSE	0.18698
		<b>Robust HC3</b>					
Representative Polarization	Coefficient	Std. Err.	t	P>t	[90% Confidence Interval]		
Primary Turnout	8.04E-08	1.21E-07	0.66	0.508	-1.19E-07	2.80E-07	
General Turnout	-1.02E-07	1.01E-07	-1.01	0.311	-2.69E-07	6.40E-08	
Some College	0.0036933	0.00093	3.97	<b>0.000</b>	0.0021632	0.0052233	
Unemployment	0.0026195	0.00227	1.16	0.248	-0.0011083	0.0063473	
Cash Public Assistance	0.0000143	5.11E-06	2.81	<b>0.005</b>	5.94E-06	0.0000227	
Family Poverty Rate	-0.0031547	0.00161	-1.96	<b>0.05</b>	-0.0058047	-0.0005047	
Foreign Born	-3.49E-08	7.95E-08	-0.44	0.661	-1.66E-07	9.59E-08	
Minority	-0.0015756	0.00036	-4.34	<b>0.000</b>	-0.0021729	-0.0009784	
Married Couple Family	0.0086972	0.00089	9.77	<b>0.000</b>	0.0072321	0.0101623	
Same House	-0.0079919	0.00158	-5.04	<b>0.000</b>	-0.0105991	-0.0053846	
Female	0.0126251	0.00539	2.34	<b>0.019</b>	0.003752	0.0214982	
Partisanship	0.0076917	0.00062	12.35	<b>0.000</b>	0.0066669	0.0087165	
_cons	-.4353345	0.27027	-1.61	0.107	-0.8801241	0.009455	

Partisanship dominates the regression, proving the prevalence of party sorting. If party sorting was irrelevant, partisanship would have similar predictive power as other variables in the model. Many of the variables remained significant, which implies that they are ideologically polarizing by themselves and that partisanship is not significant in explaining their polarizing influence. On the other hand, introducing a measure of district partisanship has several effects on other variables, indicating some direction of correlation with partisanship. For example, general turnout is now insignificant in this model, and is negatively correlated with partisanship. This observation is in accordance with previous models: general turnout proved to

have a significant negative relationship on polarization, and if polarization and partisanship are closely aligned we should expect a negative relationship. The lack of significance simply indicates that partisanship and polarization, as similar as they may be, cannot be directly equated. The significance of the percentages of married couple families, minorities, and females relate directly to assertions reviewed in the literature.<sup>32</sup> Married couple families were said to represent a polarizing Republican group of political actors while minorities and females were hypothesized to contribute to polarization among the Democratic Party, so it is not surprising that these particular variables were highly correlated with district partisanship, which leads to their significance in the model.<sup>33</sup>

### **Models Introducing Party Affiliation**

The aim of this study is to identify factors that contribute to legislator extremism in general. However, a number of scholars assert that the Republican Party has become more polarized and extreme than the Democratic Party.<sup>34</sup> To test the widely purported notion that Republican legislators have become more polarized than Democratic legislators, I included a dummy variable, where Republican identification is the included indicator while Democratic identification constitutes the omitted condition.

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<sup>32</sup> The relationship of minority population on representative polarization is the opposite of what is expected. In the next model, we are very close to seeing the significant positive relationship that was expected. I attribute this model's anomaly to the omitted variable of Party Identification, which is included in the next regression.

<sup>33</sup> A correlation matrix in the appendix (Section III) shows variables' relationship to partisanship, which highlights reasons for the different significances seen in this model.

<sup>34</sup> Hacker and Pierson (2006) is perhaps the most extensive analysis on what the authors deem "asymmetric polarization" as a result of Republicans' move to the right., Mann and Ornstein (2012) are two of many other scholars who assert that Republicans have played a larger role in modern polarization.

<b>Model 4</b>						Number of Observations	1663
						F( 12, 1650)	125.29
						Prob > F	0
						R-squared	0.4766
						Root MSE	0.14738
		Robust HC3					
Representative Polarization	Coefficient	Std. Err.	t	P>t	[90% Confidence Interval]		
Primary Turnout	2.89E-07	8.89E-08	3.25	<b>0.001</b>	1.43E-07	4.35E-07	
General Turnout	-6.34E-08	7.83E-08	-0.81	0.418	-1.92E-07	6.54E-08	
Some College	0.0018567	0.00078	2.39	<b>0.017</b>	0.0005797	0.00313	
Unemployment	-0.0004087	0.00185	-0.22	0.825	-0.0034455	0.00263	
Cash Public Assistance	0.0000195	4.14E-06	4.7	<b>0.00</b>	0.0000126	2.6E-05	
Family Poverty Rate	-0.0021157	0.00117	-1.81	<b>0.07</b>	-0.0040393	-0.0002	
Foreign Born	2.65E-07	7.89E-08	3.37	<b>0.001</b>	1.36E-07	3.95E-07	
Minority	0.0005105	0.00031	1.63	0.103	-4.50E-06	0.00103	
Married Couple Family	-0.0037287	0.00081	-4.63	<b>0.00</b>	-0.0050548	-0.0024	
Same House	-0.0019286	0.00125	-1.54	0.124	-0.0039887	0.00013	
Female	0.0101937	0.00437	2.33	<b>0.02</b>	0.0029985	0.01739	
Party Indicator (1 = Republican)		0.009	34.05	<b>0.00</b>	0.2917942	0.32143	
_cons .0472892		0.21898	0.22	0.829	-0.3131091	0.40769	

The previous model showed the relative strength of partisanship in relation to polarization, and this model overwhelmingly confirms that the Republican Party drives the partisan polarization more so than the Democratic Party.<sup>35</sup> The significance of the Republican indicator variable is somewhat staggering, and reveals that going from 0 to 1 (Democrat to Republican) is associated with a roughly 0.30 increase in representative polarization in this sample. However, this model does not formally test whether, for example, increases in the population of females polarizes specifically Democratic legislators, which is the hypothesized relationship. To confirm that a certain variable's significance was dependent upon party affiliation, I created interaction variables and ran a separate model, which confirmed the party-

<sup>35</sup> P-values are derived from T-statistics, and the larger the t-statistic is the more statistically significant the variable is. PartyID has a t-stat of 34.05 compared to partisanship's (from the previous model) t-stat of 12.35.



specific relationships mentioned in the review of the literature and that may be inferred from the most recent model.<sup>36</sup>

### Model Introducing Party Affiliation with Interaction Variables

Model 5						Number of obs	1663
						F( 14, 1648)	111.6
						Prob > F	0
						R-squared	0.4931
						Root MSE	0.14512
Robust HC3							
Representative Polarization	Coefficient	Std. Err.	t	P>t	[90% Conf. Interval]		
Primary Turnout	8.44E-08	1.12E-07	0.76	0.449	-9.92E-08	2.68E-07	
General Turnout	-4.45E-08	7.38E-08	-0.6	0.547	-1.66E-07	7.70E-08	
Some College	0.0024007	0.00076	3.14	0.002	0.0011419	0.00366	
Unemployment	-0.008707	0.00179	-0.49	0.626	-0.0038138	0.00207	
Cash Public Assistance	0.0000179	4.15E-06	4.32	0.000	0.0000111	2.5E-05	
Family Poverty Rate	-0.0017594	0.00115	-1.53	0.127	-0.0036542	0.00014	
Foreign Born	2.62E-07	7.38E-08	3.55	0.000	1.41E-07	3.83E-07	
Minority	0.0001626	0.00031	0.52	0.604	-0.0003532	0.00068	
Married Couple Families	-0.0064093	0.00076	-8.44	0.000	-0.0076591	-0.0052	
Party ID (1 = Republican)	0.6298072	0.49758	1.27	0.206	-0.1890926	1.44871	
Party ID*PrimaryTurnout	3.40E-07	1.71E-07	1.99	<b>0.047</b>	5.85E-08	6.22E-07	
Party ID*Female							
0 (Dem)	.0096807	0.0096807	2.38	<b>0.018</b>	0.0029789	0.01638	
1 (Rep)	-.0055472	-0.0055472	-0.64	0.521	-0.0197619	0.00867	
Party ID*Married Couple Families	0.008348	0.00151	5.53	<b>0.000</b>	0.0058641	0.01083	
_cons	0.0430269	0.22832	0.19	0.851	-0.3327404	0.41879	

Two potentially polarizing factors that are attributed to a specific political party are female population and percentage of married couple families, and the significance of these variables' associated interaction variables validates the aforementioned assumptions.<sup>37</sup> The inclusion of party identification initially had one particularly striking effect on a variable:

<sup>36</sup> In Section II of the Appendix, one can see that multicollinearity is again problematic.

<sup>37</sup> See "Societal Change and Public Polarization" section.

primary turnout became extremely significant. The above model's interaction variable for primary turnout is statistically significant, confirming that if a legislator is a Republican opposed to a Democrat, higher primary turnout significantly contributes to that legislator's polarization. This implies that Republican primaries are dominated by activists and that an increase in turnout translates to more extreme representation measured by the winning representative's voting behavior.

## **Conclusion**

Necessary compromise in the legislative process has become nearly unattainable today due to legislators' divergent, extreme, and unwavering ideological stances associated with their political parties. The ineffectiveness and gridlock brought upon by this political polarization has resulted in a federal legislature that roughly 90% of the population views as unsatisfactory.

Scholars noted a trend of ideologically divergent voting behavior in Congress approximately four decades ago and have since attempted to identify causes of polarization. Exploration of the trend has revealed the complexity of the issue, leading to few areas of consensus within the research community. Some academics argue that the American culture has changed so significantly that the American public at large has become divided and polarized. Other researchers contend that a small group of political elites and activists are polarized and responsible for the unusual level of contention in Congress. These individuals allege that any suggested polarization of the electorate is actually party sorting, where ideologically moderate individuals simply understand which parties associate with which viewpoints and are not truly as ideologically consistent as the parties in government.

Econometric techniques are effective tools to quantitatively test the many theories surrounding political polarization and its causes. Accumulating data on multiple variables provides a profile of a district that elects legislators whose extreme, ideologically-bound voting behavior inhibits legislative productivity. In the econometric analyses presented here, one can see evidence that societal change polarizes legislators, that activists and political activism can polarize representatives, as well as evidence supporting the legitimacy of party sorting. Across the various models, a metric associated with economic inequality consistently had a significant and positive relationship with representative polarization. This supports the view that the widening gap between top and bottom earners leads to a lack of political pressure for redistributive policies. Considering economic inequality and polarization are becoming increasingly popular in public discourse, I expect many publications in the near future to shed more light on the two trends' relations. Several other variables tracking cultural change were found to have significant relationships with polarization, specifically in regards to a district's proportion of females, minorities, and married couple families. Female and married couple populations are significant factors without accounting for district partisanship, supporting the claim that the new cultural complexion of the American public drives legislator polarization. The minority population was only significant when including a district's partisan make-up, indicating that partisanship is more important in explaining polarization than minority population.<sup>38</sup>The magnitude of district partisanship's significance reveals that polarization and partisanship are highly related, a correlation that defines the striking trend of party sorting that has gained considerable acceptance in academia and questions the validity of societal factors'

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<sup>38</sup> Female and married couple family population became more significant after the addition of partisanship, implying that these variables definitely still have a relationship with district partisanship.

explanatory power. Further, these analyses show that the Republican Party contributes significantly more to the trend of polarization than the Democratic Party.

Perhaps the most important result of the multiple econometric models is that all of the metrics associated with political activism were significant. Education, a safe proxy for political activism, proved to polarize representatives in each model.<sup>39</sup> Primary turnout proved to be a significant factor of polarization for Republican legislators, an indication that activists dominate Republican primary congressional elections and that increased turnout translates to more extreme voting behavior for these congressmen. Most importantly, increased turnout in general elections led to less polarized representatives. The primary focus of this research was to find factors that increased polarization, and general election turnout constituted as the only variable shown to have a negative effect on polarization. This relationship reveals the first and perhaps best step to begin combating rising polarization: increase the visibility of congressional elections.

Just over 40% of the population tends to vote in general congressional elections.<sup>40</sup> Not every vote is a winning vote, so an even smaller percentage of the population is actually represented in Congress. 90% of the nation may disapprove of the legislative branch's performance, but in reality the representatives in Congress represent just over 20% of Americans. When turnout increases in these contests we see that legislators are less ideologically extreme because they must vote on behalf of more people and viewpoints. These elections are not highly-publicized and visible to average individuals who do not closely follow politics. To combat polarization, society must find a way to communicate these elections' importance to citizens who are not politically active and increase participation and turnout in

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<sup>39</sup> The fixed effects model is an exception, where multicollinearity in this model is especially problematic for the education metric.

<sup>40</sup>(FairVote.org 25)

these elections. If we can significantly increase voter turnout in these elections, congressmen will have to represent a broader constituency and will vote in a less polarized manner, leading to a greater possibility of bipartisanship and overlap in party platforms and initiatives.

Analyzing political polarization has proven to be a difficult endeavor, reflected by a body of literature replete with debates and arguments surrounding potential causes. Current research and analyses herein show that cultural changes are important when discussing polarization, but cannot be the primary reason behind the ideological divergence among congressmen from opposing parties. Party sorting and the actions of political elites and activists are more crucial in understanding polarization. Finding a simple solution to such a complex problem is highly unlikely. Exhaustive reforms of primary elections or the redistricting process may sound appealing to many, but to many others whose research proves these causes to be trivial, these reforms would be ineffectual. The visibility and mainstream recognition of congressional elections may constitute as the best means of hindering the growth of polarization.

## Appendix

### *Section I: Key Terms*

- ❖ **Polarization:** the divergence between Democratic and Republican legislators' ideological stances
- ❖ **Ideology:** collective system of ideas, values, and viewpoints that strongly guides individual opinions and behavior
- ❖ **Liberal/Conservative Ideology:** generally, liberal views are those that support government intervention and aid in social and economic life while conservative views tend to oppose government intervention in social and economic life. Poole and Rosenthal (2007, 3) elaborate on the ideological spectrum: "Someone who favors higher minimum wages is also likely to favor lower defense spending, affirmative action programs, higher capital gains taxes, and so on. We can think of the continuum of ideological positions as ranging from Left to Right or very liberal to moderate to very conservative. Consider these six senators: Edward Kennedy (D-MA), Robert Byrd (D-WV), Sam Nunn (D-GA), Alphonse D'Amato (R-NY), Strom Thurmond (R-SC), and Jesse Helms (R-NC). There would be widespread agreement among American politics buffs that the order given above is the appropriate liberal/conservative ordering."
- ❖ **Party Sorting:** the process by which a tighter fit is brought about between political ideology and party affiliation; represented by the increasing association of conservative ideologies with the Republican Party and liberal ideologies with the Democratic Party;
- ❖ **Political Elites:** politicians, party leaders, opinion leaders, campaign donors, and other people active in the electoral and political process. Together, the group has the influence to shape party platforms that are directed to the masses

*Section II: Variance Inflation Factors of Models*

Variance Inflation Factors: Initial Model	
Variable	VIF
Family Poverty Rate	3.65
Unemployment	2.89
Married Couple Families	2.65
Minority	2.58
Foreign Born	2.29
General Turnout	2.07
Cash Public Assistance	1.8
Female	1.73
Some College	1.59
Same House	1.57
Primary Turnout	1.19
Mean VIF	2.18

Variable Inflation Factors: Fixed Effects Model	
Variable	VIF
Primary Turnout	3.89
General Turnout	4.56
<b>Some College</b>	<b>5.36</b>
<b>Unemployment</b>	<b>8.24</b>
Cash Public Assistance	4.5
<b>Family Poverty Rate</b>	<b>36.99</b>
<b>Foreign Born</b>	<b>159.92</b>
<b>Minority</b>	<b>83.3</b>
<b>Married Couple Families</b>	<b>64.23</b>
<b>Same House</b>	<b>11.48</b>
<b>Female</b>	<b>9.64</b>

Variable Inflation Factors: Model with Partisanship	
Variable	VIF
Family Poverty Rate	3.65
Unemployment	2.89
Minority	2.77
Married Couple Families	2.75
Foreign Born	2.3
General Turnout	2.08
Cash Public Assistance	1.8
Partisanship	1.75
Female	1.75
Some College	1.6
Same House	1.57
Primary Turnout	1.2
Mean VIF	2.18

Variance Inflation Factors: Model with Party ID	
Variable	VIF
Primary Turnout	1.19
General Turnout	2.05
Some College	1.58
Unemployment	2.83
Cash Public Assistance	1.83
Family Poverty Rate	3.58
Foreign Born	2.31
Minority	2.54
Married Couple Families	2.97
Same House	1.63
Female	1.75
Party ID (1 = Republican)	1.45
Mean VIF	2.14



Variance Inflation Factors: Model with Selected Interaction Variables	
Variable	VIF
Primary Turnout	2.22
General Turnout	1.94
Some College	1.52
Unemployment	2.74
Cash Public Assistance	1.81
Family Poverty Rate	3.51
Foreign Born	2.31
Minority	2.62
Married Couple Families	3.08
PrimaryTurnout*Party ID	4.2
Female*Party ID	
0	880.32
1	935.41
Married Couple Families*Party ID	88.4

*Section III: Partisanship and Select Variable Correlation*

Selected Variables Correlation Matrix	
	Partisanship
Partisanship	1
General Turnout	-0.3294
Minority	0.5861
Married Couple Families	-0.5586
Female	0.2668



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