Working hard or hardly working?

An Analysis of Primary Elections and Legislative Effectiveness

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Abstract

How do the number of primary challenges affect the legislative performance of representatives? I estimate the relationship between the number of primary challenges (termed "cumulative primary challenges") and legislative effectiveness, employing a novel dataset of primary electoral histories from the 96th to 110th Congress (n=6,287). Calculating the total cumulative primary contests of each member of the House, I find a negative relationship between consistent electoral threats and legislative performance. When incorporating primary vote shares, the relationship is less clear, hinting at the varied effect of primaries at different levels of electoral competition. The findings of this study has implications for understanding how legislators balance policymaking workloads with the threat of reelection. This study shows that paradoxically increased electoral competition may actually lead policymakers to be less effective legislators.

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"[Primaries] poison the health of [the] system and warp its natural balance, because the vast majority of Americans don't typically vote in primaries"[1]
Chuck Schumer, Democratic Senator from New York (2014)

Introduction

Primary elections have recently received both more media and academic attention, following the highly salient 2016 presidential contests. Yet, Congressional primary elections remain relatively understudied when compared to their executive counterpart. Alexandria Ocasio-Cortez, for example, defeated long-term incumbent Joseph Crowley in a notably arresting election, assuming the role as the de facto face of progressivism.[2] Scholarship on these electoral contests, however, lags in part due to their polemical nature. Chuck Schumer embodies this disdain for primary elections, deriding the profound ability of these contests to shape party identity.

In addition to this ability, the importance of these contests, at the Congressional level, is reflected in the sheer number of primary challenges to incumbents members of Congress. But despite the magnitude of contested elections, incumbents continue to defeat their challengers and win reelection at a rate over 90% (Jacobson 2016). The trend is not unique. Historically, incumbents have disproportionately won elections and the incidence of primary challenges ebbs and flows based on historical context (Boatright 2013).

Considering the lack of electoral competition, the quantity of primary challenges begs the value of such contests. With a majority of elections ending in loss, is it even worth it to challenge a long term incumbent? Moreover, is there value to further contesting an incumbent following a failed challenge? The following analysis attempts to answer these questions, by quantifying the effect that these contested primaries have on incumbent behavior.

Scholars have generally focused on the effect of contested primary elections on legislative polarization (Jacobson 2004; Brady 2007; McCarty, Poole, and Rosenthal 2016). Relying on the notion that primary elections turn out more ideologically extreme bases, these scholars conclude that primary elections lead to polarization in legislative voting records in order to appease these constituencies. Recent literature, however, seems to cast doubt on the significance of the effect of primary elections in polarizing the subsequent Congresses (Hirano, Snyder, Ansolabehere and Hansen 2010). Measuring the effect based on threat level of each challenge, the connection

[1]Schumer, Charles. 2014 (July 21). "End of Partisan Primaries, Save America." The New York Times.

[2]The 2018 midterm election in the 14th Congressional District of New York experienced exhaustive media coverage. Ocasio-Cortez made appearances on nationally syndicated late night television, such as The Daily Show with Trevor Noah, The Late Show with Stephen Colbert, and Desus and Mero on SHOWTIME.

between primary elections and polarization is found to be statistically insignificant.[3]

Beyond this tenuous effect on polarization, the focus on the effect of partisanship overlooks the role that primary elections may have on incumbents' primary directive: legislating. Members are under constant scrutiny from a variety of groups, where "slippage" is not likely to go unnoticed (Jacobson 1987). As such, scholars have found that primary elections rest heavily on the psyche of legislators, influencing them to avoid and win these election (Kamarck and Wallach 2018). Whether or not primary challengers are legitimate threats, incumbents desire to cultivate an aura of "invincibility," where challengers are discouraged from entering races (Kamarck and Wallach 2018). In preempting these challengers, however, do legislators run the risk of trading off with their legislative duties?

A fairly extensive analysis of this relationship forwards the closeness of such contests as a determinant of legislative effectiveness (Barber and Schmidt 2018). While this study represents the most comprehensive exploration of this question, there are still gaps within the literature. Current scholarship fails to identify any accrued effect of multiple primary challenges (henceforth referred to as "cumulative primary challenges") on the legislative effectiveness of incumbent members of the House of Representatives. Namely, do cumulative primary challenges result in a cumulative trade off with legislative resources? Incumbents will inevitably face additional primary challenges as they progress through their lengthy tenures. As the number of these primary challenges increases, does this affect legislative performance? Existing scholarship fails to satisfactorily answer whether a consistent electoral motivation acutely impairs legislative effectiveness.

Assuming that members are motivated by re-election[4] and resources are finite,[5] I argue that office holders will forgo their legislative capacities to ensure their tenures. Therefore, as the number of cumulative primary challenges increase, incumbents sacrifice some legislative priorities in favor of constituent services, campaigning, and fundraising; this tradeoff results in poorer legislative effectiveness. I further argue that this diminished legislative performance can be mitigated by seniority, Congressional majority, and committee leadership, confirming previous scholarship on legislative effectiveness (Frantzich 1979; Moore and Thomas 1991; Volden and Wiseman 2014).

In substance, this paper adds to both Volden and Wiseman's (2014) and Barber and Schmidt's (2018) exploration of legislative effectiveness, by examining the effects of cumulative primary challenges. I created a novel dataset of the primary electoral histories of members of the House of Representatives from the 96th to the 110th Congresses including all special elections, and merged this data with Volden and Wiseman's (2014) Legislative Effectiveness Scores and control variables.[6] I will begin with a brief overview of scholarship on legislative effectiveness and the effect of primary elections on legislating, introducing operationalized definitions. I will then go over the

[3]For a rebuttal, see Rogowski and Langella 2014

[4]See Mayhew 1975

[5]See Butler, Karpowitz, and Pope 2012

[6]For a more in-depth source of electoral data, see Methods section

hypotheses forwarded by this analysis, and explain data and methodology behind the multivariate regression analysis.

Literature Review

Legislative Effectiveness

Craig Volden and Alan Wiseman introduced Legislative Effectiveness Scores in 2014, gauging the legislative efficacy of individual members based on their sponsored bills. They write: "representation in U.S. legislative politics depends crucially on the ability of elected representatives to take the issues that are important to their constituents and translate them into public policy" (Volden and Wiseman 2014). Few scholars would disagree. At their very core, legislators are tasked with this job of actively legislating on federal issues for their constituencies. As such, the literature has attempted to find a measure of this legislative effectiveness.

Matthews (1960) coined the term "legislative effectiveness" when detailing the success of certain US Senators in navigating the body. While Matthews wrote primarily about the norms that existed in the upper chamber of the legislative branch, it has informed the vocabulary of future works, including scholarship that extends towards the House and future Congresses. Although legislative effectiveness is applicable to both chambers, analyses have been chamber-specific, as a result of the differences in makeup and histories.[7]

Literature on legislative effectiveness establishes leadership and majority status as the most significant variables in determining productivity. However, synonymizing formally defined leaders and effective legislators overlooks the effectiveness of rank-and-file members. Leadership, as per these authors, is a referendum on the effectiveness of these individuals as legislators (Hawley and Wirt 1968). Fenno (1973) further highlights the importance of these positions, as he formulates them as a necessary condition for political prominence.

Although legislators with de jure positions of power within parties and in committees, are salient policymakers and generally better legislators, rank-and-file legislators are also broadly influential and prominent within certain policy issues. Leonor Sullivan (MO-3), for example, was an effective environmental legislator, pushing legislation through committee and the floor at an above average rate (Volden and Wiseman 2014). Other than Congresswoman Sullivan, there are other notable examples. Recently, in the 115th Congress, Congresswoman Sheila Lee Jackson (TX-18) introduced the

[7] This analysis will focus on the legislative effectiveness of members in the House of Representatives. For measurements of legislative effectiveness for the United States Senate, see Moore and Thomas (1991) and Volden and Wiseman (2017)

third most bills among all voting members, despite not holding a leadership position.[8] Interpreting legislative effectiveness based on bill sponsorship alone is problematic as I will explore later, but serves to highlight the insufficiency of leadership as the sole metric. This interpretation precludes effective analysis of a majority of members, who are influential outside the sphere of established position.

As Volden and Wiseman (2014) note, scholars have also attempted to calculate legislative effectiveness through internal surveys ranking members of state legislatures (Meyer 1980). Although these surveys are comprehensive,[9] several problems arise with this methodology. Firstly, there is no comprehensive dataset of Congressional representatives. The House of Representatives have 435 voting members and the difficulty in coordinating these offices limit the ability of scholars to conduct similar surveys. Furthermore, the lack of proximity between districts presents logistical problems for researchers. Even discounting these difficulties, the varying openness of offices to these interviews presents challenges in creating a complete dataset. Secondly, unobserved heterogeneity could potentially confound such surveys. Perception by fellow policymakers is not indicative of perception by constituents or other groups that could determine effectiveness. While peer approval is an aspect of effectiveness as a legislator, surveys may overrepresent inter-office relationships, and underrepresent legislative productivity.

Due to these logistical difficulties and systematic errors, scholars have instead relied on sponsored legislation as a metric for individual legislative effectiveness. Early scholars employed the ratio of passed legislation to total sponsored legislation of an incumbent in order to gauge the most effective members (Frantzich 1979). Since sponsorship forced representatives to lobby their colleagues, force a public vote, and traverse the committee process, these studies employed introduction instead of merely cosponsorship as the metric. Employing the percentage of sponsored legislation that becomes law, Frantzich (1979) corroborates the conventional wisdom that leaders, and those in the majority, in particular, are more effective legislators. Despite these findings, the dataset that Frantzich employs, however, is limited and only inclusive of Democratic majority Houses. The latter criticism is a result of the dominance of the Democratic Party in the House of Representatives for the majority of the twentieth century.

Future scholarship would corroborate and add to this initial scholarship, by employing a larger panel dataset (Moore and Thomas 1991; Cox and Terry 2008) and formulating a loyalty model (Hasecke and Mycoff 2007). While different factors contribute to differing levels of legislative effectiveness, sponsored legislation serves as a constant measure and dependent variable in these analyses. The literature would also move to control statistically significant determinants of effectiveness, such as

[8]See Congress.gov for a running total of member bill sponsorship in the 115th Congress: https://www.congress.gov/sponsors-cosponsors

[9]The study interviewed approximately 99 percent of the North Carolina state legislature, asking members to rank each other based on their effectiveness. See Meyer (1980) for comprehensive overview of data and methodology.

majority status, seniority, and committee or floor leadership. Hasecke and Mycoff (2007) introduced external factors as a determinant of legislative effectiveness, articulating floor votes and financial contributions as determinants of success. These studies would include more House sessions, with certain later analyses including those after the Republican Revolution in 1994.

Relying on raw sponsored legislation, however, overlooks the differing significance of each piece of legislation. For example, the naming of a post-office is arguably less significant and less difficult to pass than Omnibus spending legislation. Although the total number of bills sponsored may correlate with legislative effectiveness, operationalizing "legislative effectiveness" without weighting significance of legislation is insufficient in detailing the true effectiveness of policymakers. Additionally, previous scholarship has generally focused on introduced legislation (Hasecke and Mycoff 2007) and passed legislation (Matthews 1960) as stasis points for analysis. As Volden and Wiseman (2014) note, this neglects committee action or lack thereof, which is arguably equally important in gauging a legislator's acumen.[10]

The introduction of Legislative Effectiveness Scores (LES) by Volden and Wiseman (2014) resolved these measurement problems, by capturing legislative action at all stages. Their analysis is inclusive of members from the 93rd Congress to the 113th Congress, and calculates scores based on (1) introduction, (2) action in committee, (3) action beyond committee, (4) House passage, and (5) law implementation. Sponsored legislation is also weighed based on the *Congressional Quarterly Almanac*'s three-tiered designation of significance.[11] By offering a panel dataset at the incumbent level as well as effective control variables (including legislative resources), the Legislative Effectiveness Scores represent the most comprehensive measure of effectiveness in the legislative branch of government to date.

In their analysis, Volden and Wiseman (2014) corroborate previous determinants of legislative effectiveness. The study isolates three main motivators of legislative effectiveness: de jure leadership position, majority status, and seniority.[12] Leadership and majority status are inextricably linked in the House of Representatives, as majority party legislators occupy committee and subcommittee positions. These positions decide the fate of many bills. Considering legislation must leave committee before advancing further, these factors have a large effect on the legislative effectiveness of members.

Seniority, however, is not necessarily linked to the two previous factors. Despite this, the logic of seniority and its effect on legislative effectiveness is relatively intuitive. As a legislator continues to serve in a chamber, she adapts to the norms of the body and bettering her legislative skillset and experience with the passage of time. Miquel

[10]Committee action is also heavily influenced by majority status, which is discussed later in the analyses

[11]Bills are weighted based on commemorative (C), substantive (S), or substantive and significant (SS)

[12]Volden and Wiseman (2014) also explore variables that are not statistically significant, such as state legislature experience. For a full discussion of these relationship, see Volden and Wiseman (2014)

and Snyder (2006) find statistical evidence that state legislators are more effective, as they learn the intricacies of the legislative process throughout their tenures. Legislators come into their roles with a variety of policy backgrounds and experiences, which does have immediate effects on their ability to fundraise (Berkman and Eisenstein 1999). However, seniority consistently elevates legislators regardless of their policy background and experience. This holds true, regardless of differences in legislative effectiveness measurement methods.

In addition to these three previously explored determinants of legislative effectiveness, Volden and Wiseman (2010) isolate female and African American legislators as generally more effective legislators. Building on previous scholarship on female legislators, Volden and Wiseman (2010) posit that female incumbents exhibit different behavior when in the majority and minority parties. When in the minority party, female representatives find success at sustaining their legislation through the later stages of the process. Meanwhile, those in the majority party do not find the same success, but instead introduce a wide array of legislation. Despite institutional limitations on female legislators, there is sparse evidence that female legislators are less effective in the legislative realm. In addition, Volden and Wiseman (2014) find that African American representatives exhibit a similar behavioral difference in minority and majority parties. When in the minority party, African American legislators engage in similar consensus building and find more success than their non-African American colleagues. However, their effectiveness wanes in a majority party, where these legislators introduce more issue specific legislation that often receives little action beyond committee.

Impact of Primary Elections

Similar to legislative effectiveness, the role of the electoral connection sits firmly at the center of scholarly discussion. Mayhew (1975) posited that legislators are motivated by reelection, which has residual effects on legislative strategy. However, challenges, including primary elections, usually end in defeat. Challengers not only face institutional and name-recognition disadvantages, but also a trend of increasing incumbency advantages (Ansolabehere and Snyder 2002). These incumbency advantages culminate in a correlated trend of decreased competition within primary elections (Ansolabehere, Mark, Hansen, and Hirano 2006). After all, legislators have a breadth of tools at their disposal, ranging from entrenched district connections to franking. However, this grim, yet unsurprising, outlook on democratic elections serve as the background to research on primary elections and Congressional behavior. Scholars have sought to add to this foundational conceptualization of legislators by clarifying the relationship between elections and behavior.

Historically, scholars of primary elections often rely on the traditional assumption that these electoral contests polarize the legislature. Relying on the assumption that primary electorates are made up of ideologically extreme voters, studies have explored the ways in which elected officials side with extreme voters in their voting behaviors in order to increase their reelection chances (Jacobson 2004; Brady et al 2007). However,

recent literature casts doubt on this relationship. Hirano, Snyder, Ansolabehere, and Hansen (2010) construct a model demonstrating the statistically insignificant effect of primary threats on the legislative strategy of representatives.[13] This non-effect of primary elections on polarization is explored also at the state legislature level, where the connection is argued to be dubious (McGhee et al. 2013).

Regardless of whether polarization is an observable result of primaries, legislators behave in similar manners in order to win reelection. Studies have mimicked constituents and found that offices will employ constituent services and legislative productivity as reelection tools (Dropp and Peskowitz 2012). Others have found that legislators will preemptively alter their legislative agenda, in order to preempt primary challenges (Kamarck and Wallach 2018). Generally, legislators are not only aware of primaries as an electoral mechanism but also wary of the risk, influencing the expenditure of their legislative resources in order to avoid such contests.

In their capacity as legislators, representatives are tasked with balancing finite legislative resources, such as time, information, and staff, towards legislating and reelection (Hall and Deardoff 2006; Butler, Karpowitz, and Pope 2012). Legislators seeking higher office, for example, change their legislative strategies by broadening their policy agenda and moving away from specialization (Victor 2011). While this study does not make conclusions on the change in representative ability of the legislator, the conclusions clearly allude to the residual effects on the legislative strategies of incumbents by such campaigns. Primary elections would also somewhat trigger this effect, as legislators would have to spend resources to campaign.

Barber and Schmidt (2018) explore this relationship between primary elections and legislative effectiveness, finding that contested primaries, accentuated by lower vote shares, contribute to lower legislative effectiveness in the following Congress. In explaining the lower legislative productivity of challenged incumbents within following Congresses, the paper proposes the legislative resource trade off model, as a potential explanation of the relationship. However, the study fails to address whether this effect is cumulative, and consequently whether continuing to challenge entrenched incumbents is a fruitful exercise. Often legislators do not experience challenges in isolation, but instead are contested multiple times throughout their careers. The scholarship, thus, fails to analyze whether getting challenged eight times, for example, has a different effect than getting challenged once. While cumulative challenges are correlated with seniority, Barber and Schmidt (2018) find that

Despite the existing scholarship on primary elections, data on the subject is relatively sparse. Ansolabehere, Mark, Hansen, and Hirano (2006) highlight the notoriously elusive nature of complete data on primary elections, as returns prior to the 1950s exist only in newspaper clippings, if at all. While record keeping of general elections is comprehensive, primary elections are often not as robust. Recent quantitative research presents striking new findings on the effect on Congressional

[13]Hirano, Snyder, Ansolabehere, and Hansen (2010) create a model that weighs the threat level of these primary challenges in order to gauge the magnitude of an effect on polarization

behavior, but run into the same problems of existing data. Boatright (2013) suggests that analyses of primary elections on Congressional behavior is difficult because of the lack of a large enough n value or sample. Literature on primary elections, including this one, must acknowledge the limits of quantitative analyses.[14]

All in all, the scholarship on effectiveness and primary elections are fairly comprehensive. Majority status, seniority, and leadership positions are consistently found to be determinants of legislative effectiveness and metrics for legislative effectiveness have consistently progressed with time. Furthermore, academics have continually analyzed the electoral connection, including the effects of primary elections. Primary elections rest heavily on the psyche of legislators, but gaps exist as to the cumulative effect of elections on individual legislators. In order to capture this accrued effect, I employ the following definitions in a multivariate regression of legislative effectiveness in the House of Representatives.

Dependent Variable

Volden and Wiseman (2014) offers a clear definition of legislative effectiveness: "*the proven ability to advance a member's agenda items through the legislative process and into law.*" While their work is not the first to operationalize around the legislative process, it offers a clear background to both previous and future scholarship on efficacy in the legislative chamber.

While other metrics of legislative effectiveness exist, Volden and Wiseman (2014) offer a comprehensive measure of legislative effectiveness. As mentioned before, other measurements omit legislative significance and committee traversal.

While Volden and Wiseman's definition serve as the operationalized "legislative effectiveness" in this analysis, measures of effectiveness utilizing sponsored legislation run into several methodological problems relating to the makeup of the House of Representatives. Namely, the Speaker of the House rarely introduces or sponsors legislation, if at all, unlike every other representative. However, this lack of a legislative record does not equate to the uselessness of the Speaker. The Speaker of the House was modeled off the partisan British "Speaker of the House of Commons," culminating in a constitutionally identified role that mixed partisan and nonpartisan responsibilities and duties in the United States (Green 2010). Although the role may exclude introducing legislation, their power over parliamentary procedure has historically been employed to influence vote counts. Speaker Hastert (IL-14) famously kept the voting clock open for a Medicare expansion bill and lobbied several members to changing their nay votes (Green 2010). Although criticized by members for an expansion of the Speaker's powers,[15] it demonstrated the malleable duties and power of the position.

[14] In his text, Boatright (2013) identifies the lack of a large enough population to make conclusive statements about the effect of primary elections. Studies, such as Kamarck and Wallach (2018) attempt to overcome these quantitative limitations by employing a qualitative strategy

[15] Hulse, Carl. 2003 (Dec 6). "Fight to Pass Medicare Measure Raised House Speaker's Profile."

The constantly evolving role of the Speaker creates difficulties in quantitative analysis, which has resulted in a number of qualitative measurements of their respective effectiveness in the legislative bodies (Green 2010, Novak 1987).

Although this analysis does not discount the importance of Speakers, legislative effectiveness, as it is measured by our definition, does not attempt to measure this intangible influence in the data. Instead, this analysis will focus on the "*the proven ability to advance a member's agenda items through the legislative process and into law.*" While the Speaker is an important position, our operationalization of legislative effectiveness will exclude her from analysis. Whether legislative effectiveness should be defined inclusive of Speaker behavior is up to the determination of other American politics scholars.

Independent Variable

A contested primary challenge is defined as any contested primary election that follows an incumbent's initial election.

With regards to caucus systems, contested primary challenges are defined as any primary election where incumbents do not receive 100% of the vote share. I acknowledge the differences between partisan, non-partisan, and blanket primary systems. Electoral systems will, to a certain extent, be a determinant of legislative effectiveness. As a result, I have analyzed the results by electoral system, as well as in the aggregate.

Since candidates are not incumbent legislators in their initial election, the analysis will eliminate the first election that legislators participate in from their cumulative primary challenge value.[16]

Hypotheses

Finiteness of Legislative Resources

Hypothesis 1 (H1): *As legislators continue to experience challenges in primary elections, their legislative effectiveness decreases.*

In isolation, primary challenges may lead to lower legislative effectiveness,[17] but multiple primary challenges could further stretch the legislative resources available to

The New York Times.

[16]When making the dataset, I accounted for special elections. Since all initial elections would be dropped from the calculation of the cumulative primary challenge variable, the special elections were inputted as any other election. For the purposes of this analysis, the distinction between special and primary elections does not affect the results

[17]This study will dispute this claim, but the relationship between challenges and legislative effectiveness serve as a foundation within scholarship. See Barber and Schmidt (2018) for an

an incumbent. As per Kamarck and Wallach (2018), legislators will attempt to preempt and discourage future challengers, and the presence of a primary challenge would initiate this resource expenditure towards this goal. Dedicating time, staff, and other legislative resources towards preempting and defeating primary challengers would take away the resource available for traversing the policymaking realm, making connections in committees, and learning the intricacies of the legislative process. Moreover, as the policy agenda faced by this legislative body changes, the cumulative expenditure of these legislative resources on elections would complicate the ability of legislators to adapt to changing policy environments.

While seniority and cumulative primary challenges are inherently tied, I expect that cumulative primary challenges will have an opposite effect on legislative effectiveness than that of seniority. Intuitively, seniority elevates legislators through experience. However, unlike seniority, cumulative primary challenges is expected to hold an accrued cost. As legislators experience primary challenges, I expect the loss in finite resources will materialize cumulatively. Not only do I expect these factors to impact legislative effectiveness negatively, but also be more pronounced than singular challenges.

Congress to Congress

Hypothesis 2 (H2): *The relationship between cumulative primary challenges will hold for each Congressional session in the dataset.*

A panel dataset serves as a comprehensive overview of the House of Representative, but may miss some of the intricacies of individual Congresses. Despite this totalizing view of the legislative body, I expect the relationship to hold regardless of partisan trends, such as the 1994 upheaval of Democrats. Regardless of context, cumulative primary challenges will negatively affect the legislative effectiveness of incumbent members of Congress.

Primary Vote Share

Hypothesis 3 (H3): *Primary vote share will have a statistically significant effect on legislative effectiveness, while not affecting the statistical significance of cumulative primary challenges.*

Accounting for primary vote share will serve as a rival hypothesis. Employing Barber and Schmidt's (2018) findings that primary challenges in isolation have a negative effect on legislative effectiveness, I hypothesize that primary vote share will affect the legislative effectiveness of legislators, while also maintaining the robustness of the independent variable, cumulative primary challenges.

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exploration of the relationship between primary contestation and legislative effectiveness

Control Variables

Hypothesis 4 (H4): *Seniority, general election vote share, general election vote share squared, majority status dummy variable, majority leader dummy variable, minority leader dummy variable, committee chair dummy variable, subcommittee chair dummy variable, power committee dummy variable, female dummy variable, and an African American dummy variable will still hold statistically significant.*

As a baseline assumption, I expect the control variables to continue to serve as determinants of legislative effectiveness. Cumulative primary challenges should not affect the statistical significance of these variables and will only interact insofar that they predict Legislative Effectiveness Scores.

Methods

I employed a combined dataset of primary election results and legislative effectiveness, from the 96th Congress to the 110th Congress. The dataset is organized at the incumbent level, differentiated by Congressional session. A panel dataset is employed in order to control for unobserved heterogeneity, which can materialize in the different issue salience, scandals, and a number of other primary election topics.

Data on the independent variable was collected from the following two datasets: Pettigrew, Owen, and Wanless (2014)[18] and Boatright (2013)[19]. Any gaps in existing data were filled by employing information supplied by Cook (2013)[20], Dubin (1998)[21] and Kalb (2016)[22].

To calculate cumulative primary challenges, a script summed the total challenges of each unique legislator from the 96th to 110th Congress. As per our definition, the cumulative primary challenge variable eliminates the first election, as an initial election is not a challenge. In order to compare the effect of primary challenges in isolation and primary challenges in the aggregate, a lagged variable of primary contestations was generated.

Data on the dependent variable, Legislative Effectiveness Scores, were from the

[18]Pettigrew, Owen, and Wanless supplied data for incumbents from the 85th Congress to the 92nd Congress. This dataset is coded based on the America Vote series. For full citation and methodology, see Stephen Pettigrew's dataverse profile for complete dataset: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/26448

[19]Boatright supplied data for primary elections from the 93rd Congress to the 110th Congress. See Robert Boatright's website for complete dataset: https://wordpress.clarku.edu/rboatright/

[20]See America Votes series for complete listing of election results

[21]See United States Congressional Elections, 1788-1997: The Official Results for complete list of special elections. Dubin supplied missing special election information from 1956 to 1997

[22]See House General Election Returns, 1824–2015 for complete list of special elections. Kalb supplied missing special election information from 1997-2015

Center for Effective Lawmaking (Volden and Wiseman 2014).[23] Table 1 details the summary statistic of Legislative Effectiveness Scores. The average Legislative Effectiveness Score is 0.974 with a standard deviation of 1.527. This dataset also included the following control variables: seniority, general election vote share, general election vote share squared, majority status dummy variable, majority leader dummy variable, minority leader dummy variable, committee chair dummy variable, subcommittee chair dummy variable, power committee dummy variable, female dummy variable, and an African American dummy variable.

Table 1: Summary Statistics of Dependent and Independent Variables

Statistic	N	Mean	St. Dev.	Min	Max
Legislative Effectiveness Scores	6,287	0.974	1.527	0.000	18.686
Cumulative Primary Challenges	6,287	1.189	1.656	0	10

For the purposes of analyses, any legislators without Legislative Effectiveness Scores or incomplete electoral information were excluded. In addition, only voting members are included in this dataset, excluding members from self-governing territories and the District of Columbia. Data from the 111th to 113th Congress did not contain data on an African American dummy variable, so were excluded in the primary analyses. However, regressions including the 111th, 112th, and 113th Congresses are available in the Appendix sans this control. Figure 1 details the distribution of Legislative Effectiveness Scores in the dataset.

To test the hypotheses, this study employs a quantitative and qualitative approach to explain the effect of primary elections on legislative strategy. In order to isolate a relationship, I run three multivariate ordinary least square (OLS) regressions in order to test the robustness of the relationship between cumulative primary challenges and legislative effectiveness against control variables. The following control variables are employed in Model 2: seniority, general election vote share, general election vote share squared, majority status dummy variable, majority leader dummy variable, minority leader dummy variable, committee chair dummy variable, subcommittee chair dummy variable, power committee dummy variable, female dummy variable, and an African American dummy variable.[24]

Since I am observing members of Congress that survive primary challenges, the potential reverse causality of this relationship requires attention. However, Butler, Hughes, Volden, and Wiseman (2019) find that constituents have little to no knowledge of the effectiveness of their representative. While it is possible voters may take "legislative effectiveness" into account, the data suggests that constituents do not have correct information regarding effectiveness.

[23]For complete calculation of Legislative Effectiveness Scores, see Volden and Wiseman (2014)

[24]The dataset includes more control variables that Volden and Wiseman (2014) test in their text. However, some of these variables are statistically insignificant and may add unnecessary noise to our analyses.

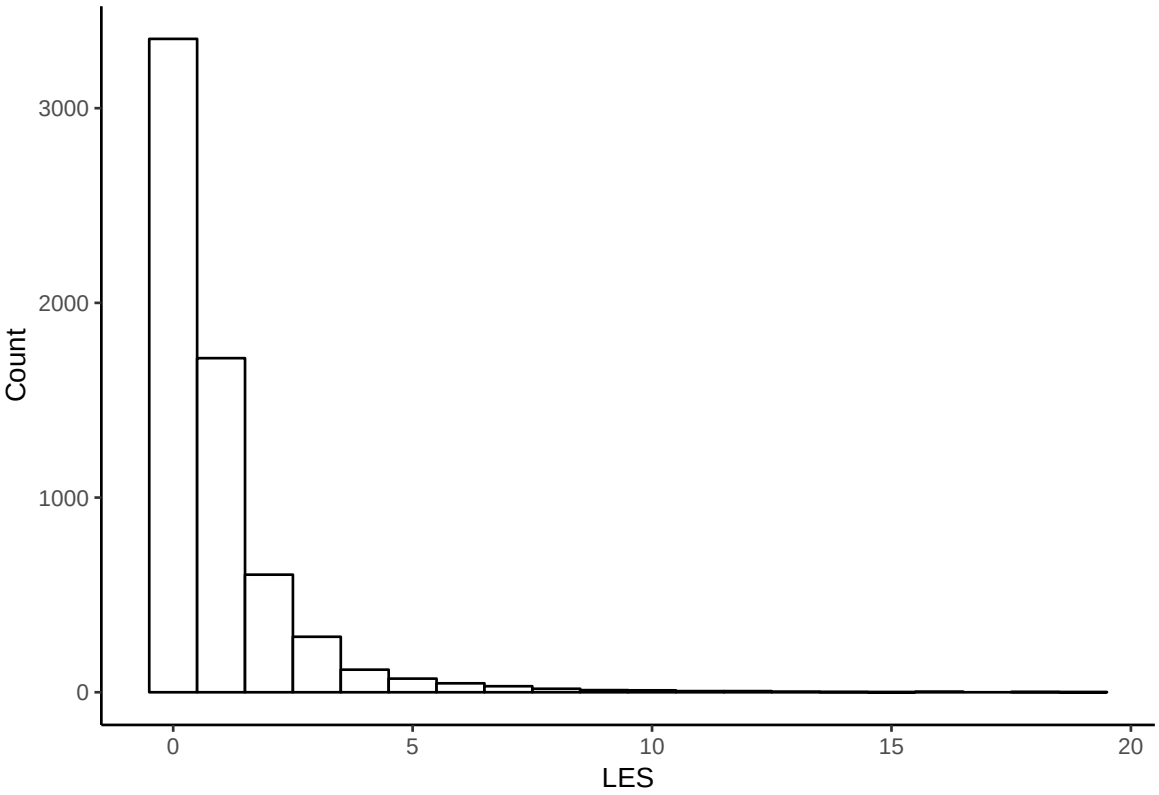


Figure 1: Distribution of LES

In Model 1, the OLS regression tests the relationship between cumulative primary challenges and legislative effectiveness. In Model 2, I test whether this holds against control determinants of legislative effectiveness. Figure 2 details the regression equation of Model 2, including control variables. In Model 3, the OLS regression tests whether a rival hypothesis, that of primary vote shares, confounds the hypotheses. Figure 3 details the regression equation for Model 3, including control variables. In order to balance the data, standard errors are clustered around each unique members, as certain legislators experience a disproportionate amount of challenges. Following a presentation of the results, I will move to a discussion of the results contextualizing them through conversations with incumbent members of Congress.

$$\begin{aligned}\text{LegislativeEffectiveness}_t = \alpha &+ \beta_1 \text{CumulativePrimaryChallenges}_t + \beta_2 \text{Seniority}_t \\ &+ \beta_3 \text{Majority}_t + \beta_4 \text{Maj.Leader}_t + \beta_5 \text{Min.Leader}_t \\ &+ \beta_6 \text{Chair}_t + \beta_7 \text{Sub.Chair}_t + \beta_8 \text{Power}_t \\ &+ \beta_9 \text{Vote.Pct}_t + \beta_{10} \text{Vote.Pct.Sqr}_t + \beta_{11} \text{AfricanAmerican}_t \\ &+ \beta_{12} \text{Female}_t + \epsilon\end{aligned}$$

Figure 2: Model 2 Equation

$$\begin{aligned}\text{LegislativeEffectiveness}_t = \alpha &+ \beta_1 \text{CumulativePrimaryChallenges}_t + \beta_2 \text{Primary.Vote.Pct} \\ &+ \beta_3 \text{Primary.Vote.Pct.Sqr} + \beta_4 \text{Seniority}_t \\ &+ \beta_5 \text{Majority}_t + \beta_6 \text{Maj.Leader}_t + \beta_7 \text{Min.Leader}_t \\ &+ \beta_8 \text{Chair}_t + \beta_9 \text{Sub.Chair}_t + \beta_{10} \text{Power}_t \\ &+ \beta_{11} \text{Vote.Pct}_t + \beta_{12} \text{Vote.Pct.Sqr}_t + \beta_{13} \text{AfricanAmerican}_t \\ &+ \beta_{14} \text{Female}_t + \epsilon\end{aligned}$$

Figure 3: Model 3 Equation

Findings

Table 2: Regression Results

	Dependent variable:		
	Legislative Effectiveness Score		
	(1)	(2)	(3)
Cumulative primary challenges	0.187^{***}	-0.043^{*}	-0.037
	(0.030)	(0.022)	(0.024)
Primary Vote share			-0.003
			(0.006)
Primary Vote share squared			0.00003
			(0.00004)
General Vote share		0.025^{*}	0.023^{*}
		(0.011)	(0.011)
General Vote share squared		-0.0002^{*}	-0.0002^{*}
		(0.0001)	(0.0001)
Seniority		0.087^{***}	0.085^{***}
		(0.013)	(0.013)
Majority		0.503^{***}	0.510^{***}
		(0.047)	(0.047)
Majority Leader		0.240	0.235
		(0.172)	(0.172)
Minority Leader		-0.148^{*}	-0.149^{*}
		(0.066)	(0.066)
Committee Chair		2.980^{***}	2.979^{***}
		(0.311)	(0.311)
Subcommittee Chair		0.779^{***}	0.772^{***}
		(0.100)	(0.100)
Power committee		-0.273^{***}	-0.279^{***}
		(0.061)	(0.062)
Female		0.073	0.075
		(0.048)	(0.049)
African American		-0.339^{***}	-0.330^{***}
		(0.090)	(0.091)
Constant	0.751^{***}	-0.813^{*}	-0.709
	(0.033)	(0.397)	(0.445)
Observations	6,287	6,287	6,275
R^2	0.041	0.410	0.410
Adjusted R^2	0.041	0.409	0.409
Note:			*p<0.05; **p<0.01; ***p<0.001

Model 1 reveals a robust positive relationship between the two variables, in isolation. The number of challenges increases with length of tenure, which is subsumed by the independent variable in this bivariate model.[25] Model 2 reveals that that cumulative primary challenges have a statistically significant ($p<.05$) negative relationship with legislative effectiveness, controlling for other determinants. As incumbents experience increased numbers of challenges, their effectiveness as legislators wanes. Vote share, vote share squared, seniority, majority status, minority leadership, committee chairmanship, subcommittee chairmanship, power committee membership, and African American identity hold as determinants of legislative effectiveness, with varying degrees of statistical significance.

The differing directions of seniority and cumulative primary challenges is especially of note. While legislators learn the norms and process of the legislative chamber, cumulative primary challenges partially negate the gains in effectiveness that are a result of time. Considering the correlation between cumulative primary challenges and seniority, the differing directions are particularly revealing about the effect of multiple challenges. Previous scholarship offers a potential explanation of this relationship. By expending legislative resources on the preemption of primary challenges, legislators partially trade off with their ability to learn the norms and practices of the legislative body.

Model 3 demonstrates that the introduction of primary vote share and primary vote share squared confounds our results. While Model 2 shows a statistically significant negative relationship, there is a null effect of cumulative primary challenges, when accounting for the effect of primary vote share. Despite the lack of statistical significance in our independent variable, the statistically significant control variables are still robust, corroborating previously identified determinants of legislative effectiveness in the scholarship. The effect of primary vote share does, however, indicate that vote share affects cumulative primary challenges, which could be a result of the effect of threat level. Future research, incorporating threat level a la Hirano, Snyder, Ansolabehere, and Hansen (2010), would illuminate the relationship between primary vote share and the cumulative primary challenges further. The results in Model 3 should make us wary about drawing conclusions about the relationship between cumulative primary challenges and legislative effectiveness.

The robustness of general vote share as well as general vote share squared demonstrates the importance of general election returns in determining legislative effectiveness. Intuitively, legislators with higher victory marginals will feel as if they have a mandate to legislate. As such, the coefficient for this relationship starts low, but eventually becomes larger after a certain threshold. The negative relationship of general vote share squared demonstrates the diminishing returns of electoral victory margins. After all, the difference between winning an election by 70% and 100% bears little on the psyche of a legislator.[26]

[25] As legislators serve their terms, they will experience more challenges. New legislators, for example, are unable to experience challenges, until their second term.

[26] See appendix for a marginal effects plot of this relationship between general vote share and

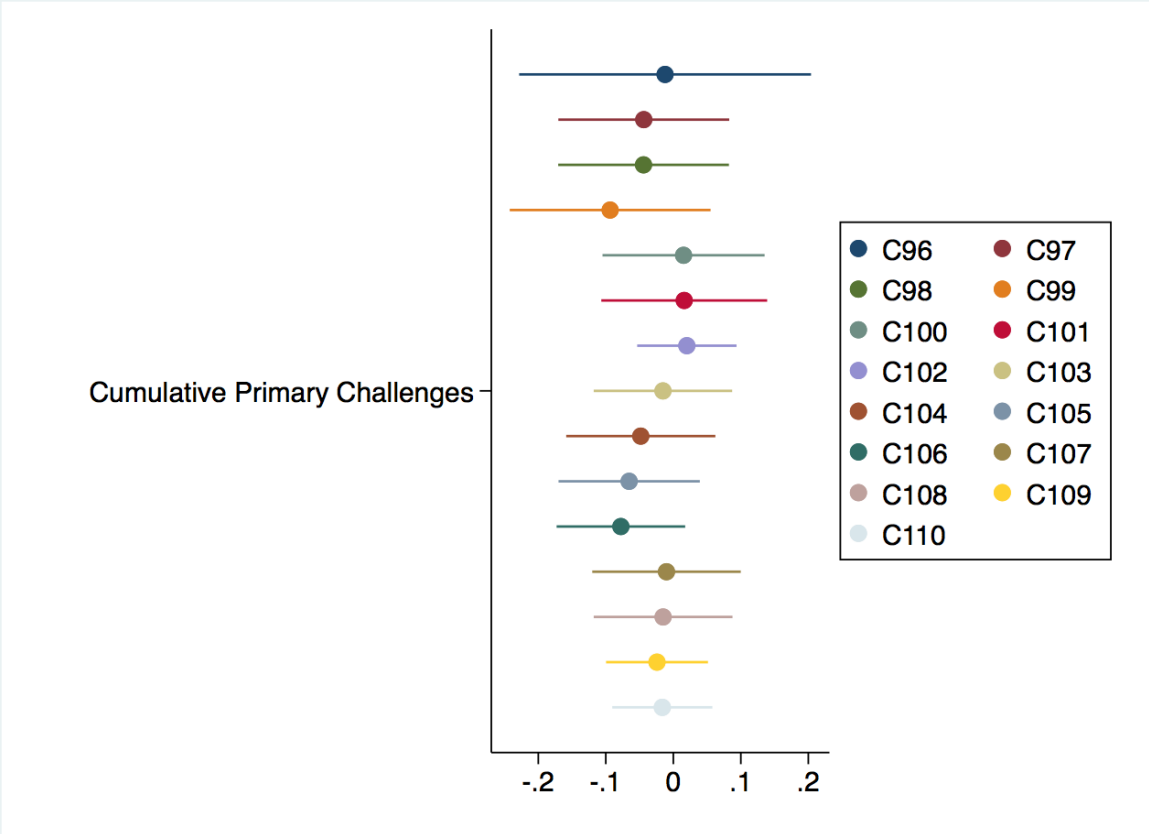
Both majority status and seniority are also robust indicators of legislative effectiveness. Majority status has a strong positive relationship with legislative effectiveness. After all, majority status implicates committee placements, chairpersonship, subcommittee chairpersonship, and the ability of bills to advance past this stage of the legislative process. The results in both models corroborate the power of majority status, as both committee and subcommittee chairpersons are, on balance, better legislators. This strong relationship is partly attributable to our dependent variable, as Legislative Effectiveness Scores incorporate all levels of bill passage. Nearly two out of five of the stages within this score calculation surround committee. It should be noted that majority status can vary depending on the deftness of leadership, the influence of coalitions, and the partisanship of such Congresses. Similarly, the statistical significance ($p<.01$) of seniority is also robust for each model, but vulnerable to external factors. Learning the norms and participating in horsetrading make representatives better legislators. This relationship is corroborated by the bulk of the literature, harkening back to the initial Matthews (1960) text. While the integral role of seniority has been explored as this determinant of our dependent variable, the negative relationship in Model 2 demonstrates that seniority is not guaranteed to increase the effectiveness of legislators. A number of variables, such as cumulative primary challenges, can mute the strength of this effect.

Maintaining a leadership position as part of the minority party also serves as a negative determinant of legislative effectiveness. As per Volden and Wiseman (2014), the effectiveness of minority party leaders is generally lower, running counter to the findings of Frantzich (1979) and Miquel and Snyder (2006). Regardless of leadership, the findings of this study demonstrate that leadership is not a universally beneficial to the ability of legislators to traverse the legislative process. Similar to minority leadership, the negative relationship of power committees (i.e. Appropriations, Rules, and Ways and Means) runs counter to the existing scholarship on leadership. Volden and Wiseman (2014) posit that chairs mainly introduce the legislation on these committees, which trades off with the ability of members who are not chairs to cultivate a legislative portfolio. The results of Model 2 and 3 demonstrate the ability of traditionally assumed leadership and power committee membership to take away from an individual legislator's ability to traverse the legislative realm.

In terms of identity factors of legislators, only African American identities correlate with statistically significant legislative effectiveness. Volden and Wiseman (2014) find that African American legislators find success within minority parties, in part due to a tailored legislative portfolio and coalition.[27] However, within majority parties, their effectiveness falls as the more liberal policy agenda forwarded by these legislators is often rejected by committee leadership.

legislative effectiveness.

[27]Volden and Wiseman (2014) only analyze Democratic African American legislators, as there are only two Republican African American legislators within their 36 year panel data set



(a) Note: ***p<.001,**p<.01,*p<.05

Figure 4: Coefficients by Congress

Robustness

Are the results generalizable across Congresses? Or do certain Congresses pull the results in one direction or the other? To answer this question, I disaggregated our results to each Congress to answer this question.

Notably, analysis at the individual Congressional level show statistically insignificant results for every session.[28] While the results in aggregate point to a negative relationship between cumulative primary challenges and legislative effectiveness, disaggregated analysis points to a null effect. Figure 3 echos the concerns of Boatright (2013) about the difficulties in producing a n value that is large enough to root out heterogeneity. Within some of these multivariate regressions, variables, such as seniority and majority status, have a null relationship with legislative effectiveness. While this may reflect the potential idiosyncrasy of these sessions, it is more likely these effects were hard to gauge within a sample of approximately 400 entries. With regards to our independent variable, this is especially important considering that a majority of primary elections are not competitive, meaning competitive elections are

[28]See Appendix 4 to 18 for individual regressions of each Congressional session.

severely underrepresented within a single Congress. Moreover, Figure 3 demonstrates the role that unobserved heterogeneity may play a role in my analysis. While primary elections are a constant in each Congress, the salience of issues and scandal unique to each session may alter the relationship.

The lack of a clear relationship is not to say that members of Congress are simply ignoring these primary challenges. In fact, Kamarck and Wallach (2018) point to a relationship that is counter to this assertion. Primary challenges are constantly in the psyche of our legislators, and offices make changes in their strategies to deal with these challenges. Certain legislators indicated that primary challenges from within their own party creates shifts in communication strategies, while others pivoted towards constituent outreach. Office budgets are limited, so these shifts in strategy affect the day-to-day of the legislator. These tradeoffs, however, may be too minute in isolation to produce effects following singular primary challenges. Figure 3 corroborates the difficulty in observing effects within singular Congresses, as cumulative primary challenges are not robust against control variables.

Discussion and Conclusion

How does an electoral history affect the behavior of members of Congress? Volden and Wiseman (2014) leave this question about the effect of elections on legislative effectiveness to future researchers.[29] In this analysis, I attempt to demonstrate a statistical relationship between cumulative primary challenges and legislative effectiveness. Increases in total challenges are negatively related to the legislative productivity of members of Congress, which I attribute to the cumulative strain on legislative resources. As legislators preempt challenges, the distribution of legislative resources available for the primary directive of legislating wanes. However, the inclusion of the rival hypothesis, primary vote shares, muddles this relationship. The results have implications for understanding the behavior of legislators and polarization in the lower chamber of the legislative branch. I add to existing scholarship of Congressional behavior that seeks to explore the electoral connection, altering Barber and Schmidt's (2018) conclusions about the effect of primary challenges on legislators.

While the topic of this analysis was cumulative primary challenges, the results impact our understanding of general and primary vote shares in determining legislative effectiveness and the mandate to legislate. In both multivariate models, the general election vote share variable is statistically significant in the positive direction, indicating that legislators perceive a more profound mandate to pursue legislative priorities following increased vote margins. Conversely, legislators with low general election margins deviate away from their legislative priorities, instead focusing on fundraising and constituent casework (Dropp and Peskowitz 2012). This effect, however, has marginal returns after the 70 percent mark, as demonstrated by the vote share squared

[29]In Chapter 2, Volden and Wiseman (2014) leave the question of vote shares to future research

variable.[30] After all, an electoral victory is a landslide, regardless of a 20 or 30 percent margin. Additionally, the results demonstrate that inclusion of primary election vote shares affect the level to which cumulative primary challenges determine legislative effectiveness. The differences between primary systems and the wider range of primary victory margins make it more difficult to isolate a universal point where primary vote shares create a similar mandate to legislate, even if the results do point to an interaction. These findings suggest that the effect of general election vote shares is more profound than that of primary election vote shares. Since legislators can have either high or low general vote margins and high or low primary vote margins, these varied effects implicate the behavior of these four groups. Legislators with high general election and high primary election margins will behave in intuitive ways. They will focus on their legislative priorities sans unobserved heterogeneity, such as scandal or desire for higher office. Those with low general election and low primary election margins do the opposite, as their time and budgets would be better served by constituent casework and fundraising. Those with low opposing general and primary margins would be impelled to divert resources towards constituent casework and fundraising to guarantee re-election and preempt future challengers, albeit less than those with both low general and primary election margins. Among this group, the more profound effect of general election vote shares would behoove those with low general election vote shares to legislate less than their counterparts with high general election vote shares. While challenges compel representatives to become less effective legislators, the findings of this study underscore the differences between the type and severity of a challenge.

Moreover, this study offers insight into polarization in the U.S Congress and potential ways to limit this rising trend. The findings of the regression analysis demonstrate the significance of majority party status in determining the legislative effectiveness of members. This is not surprising, considering the ability of the majority party party to control bill introduction in committees and subsequently bring them for a vote on the House floor. While the scholars has always been cognizant of these powers, this study adds to scholarship that quantifies this effect (Volden and Wiseman 2014; Barber and Schmidt 2018). Since a predominant measure of polarization, DW-Nominate scores, relies on voting records, the increasing polarization of Congress can in part be attributed to these powers of majority parties.[31] Legislators cannot vote on bills, unless those in the majority approve of its place on the legislative docket. Secondly, the results of this study demonstrates that cumulative primary challenges could affect the legislative productivity of individual members of Congress. Neither Volden and Wiseman (2014) nor this analysis contends that DW-Nominate scores or other metrics of polarization are directly related to legislative effectiveness. Effective legislators exist on both sides of the political aisle. Despite this, challenging legislators may offer constituents a way to limit the effectiveness of incumbents that fall towards

[30]See Appendix 3 for a marginal returns plot. The confidence intervals diverge at the 70 percent mark, but are not markedly different at other levels.

[31]DW-Nominate scores were developed by Keith Poole and Howard Rosenthal. Other metrics of polarization, such as Bonica scores, rely on campaign finance.

the ends of the political spectrum. By forcing incumbents into expending legislative resources on constituent outreach, primary contestations offer a way for constituents to limit the efficacy of extreme legislators, even if they do not oust the incumbent. While the varying degrees of success of this strategy rely on the threat level of the primary challenge, the results demonstrate the effect of consistent electoral threats.

In addition to these implications, the results also confirm the robustness of seniority, committee and subcommittee chairs, and certain identity variables as determinants of legislative effectiveness. Intuitively, senior members of the legislature are not only better knowledgeable about the norms and rules of the chamber, but also have more time to form connections among other legislators. Committee and subcommittee chairs control much of the bill traffic that contributes to legislative effectiveness. Those non-chair members on power committees are worse legislators, in part due to the nature of those committees to defer bill introductions to the chair. Moreover, African American legislators tend to find more success as part of the minority party, but fail to flourish in majority party rule as a result of the tendency to get struck down by party leaders.

To answer the titular question, members of Congress are working, but have to trade off some of their legislative priorities in the face of electoral insecurity. Among other things, the relationship between cumulative primary elections and legislative effectiveness restates the importance of these contests and demonstrates novel insights as to their effect on legislative behavior. The extent to which legislators change their behavior within individual Congresses is debatable, but across sessions, the effect is more observable, albeit not when accounting for vote shares.

I acknowledge the limitations of this study. Firstly, primary challenges, more often than not, are known prior to the actual primary election, implicating the portion of a Congressional session between the announced challenge and the end of that legislative session. Since Legislative Effectiveness Scores are calculated once per Congress, this study cannot quantify the effect on the immediate legislative strategy of incumbents. The explanatory mechanism of the relationship between primary challenges and legislative effectiveness lies in preemption, so this study can only make conclusions on the preemption of legislators following survival of primary and general challenges. Secondly, unobserved heterogeneity exists regardless of control variables. This study cannot account for the reason for challenge and other variables intrinsic to the electoral system of the United States. Relying on a panel dataset, I attempt to root out any confounding variables, but expanding the dataset further would require returns from before the 1950s.

Future research can go in several directions to better understand the electoral connection to legislative effectiveness. Firstly, exploring the changes to legislative effectiveness following primary challenge announcements would add to the nuances of the analysis. If the assumption that legislators are motivated by reelection is true, then the behavioral changes of legislators is not limited to the subsequent session of Congress. Secondly, analysis of cumulative primary challenges, incorporating the threat level analysis of Hirano, Snyder, Ansolabehere, and Hansen (2010), would

further illuminate the relationship between vote share and legislative effectiveness. After all, primary challenges are rarely the same with regards to their level of threat to incumbent and their electoral potency. Thirdly, analysis of cumulative primary challenges with other dependent variables could illuminate the electoral connection even further. While this analysis focused on the effect on legislative agendas, studies on cumulative primary challenges and campaign finance is an example of routes future research can take.

Would continually challenging an incumbent illicit positive change in their behavior? That depends on the motivation of the challenger. Contesting incumbents often ends in failure and these electoral losses can negatively impact legislative performance. While primary elections are an important exercise of democratic norms and a check on institutional power, the findings of this study implicate potential challengers and our expectations of elected officials. Constituents should continue to primary their incumbents to hold them accountable to party platforms, but should also acknowledge the residual effect on the legislative effectiveness.

References

[1] Ansolabehere, S., Mark, J. H., Hirano, S., & Snyder, J. M. J. (2006). The Decline of Competition in U.S. Primary Elections, 1908-2004. In J. Samples & M. McDonald (Eds.), The Marketplace of Democracy: Electoral Competition and American Politics (pp. 74–101). Brookings Institution Press.

[2] Ansolabehere, S., & Snyder, J. M. J. (2002). The Incumbency Advantage in U.S. Elections: An Analysis of State and Federal Offices, 1942 – 2000. Election Law Journal, 1(3), 315–338. https://doi.org/10.1089/153312902760137578.

[3] Barber, M., & Schmidt, S. (2018). Electoral Competition and Legislator Effectiveness. American Politics Research, 1(26). https://doi.org/10.1177/1532673X18760527.

[4] Boatright, R.G. (2013). Getting primaried: The changing politics of congressional primary challenges. Getting Primaried: The Changing Politics of Congressional Primary Challenges. University of Michigan.

[5] Boatright, Robert G., Vincent G. Moscardelli, and Clifford Vickrey (2017). Congressional Primary Elections Data. On line, https://wordpress.clarku.edu/primarytiming.

[6] Brady, D. W., Han, H., & Pope, J. C. (2007). Primary elections and candidate ideology: Out of step with the primary electorate? Legislative Studies Quarterly, 32(1), 79–105. https://doi.org/10.3162/036298007X201994.

[7] Butler, Daniel M., Adam G. Hughes, Craig Volden, & Alan E. Wiseman. (2019). Do Constituents Know (or Care) about the Lawmaking Effectiveness of their Representatives?. Working Paper. Center for Effective Lawmaking. https://thelawmakers.org/wp-content/uploads/2019/02/CEL-Working-Paper-2019-001.pdf

[8] Cox, G. W., & William, T. (2008). Legislative Productivity In the 93d–105th Congresses. Legislative Studies Quarterly, 33(November), 1–16.

[9] Dropp, K., & Peskowitz, Z. (2012). Electoral security and the provision of constituency service. Journal of Politics, 74(1), 220–234. https://doi.org/10.1017/S0022381611001216.

[10] Dubin, Michael J. (1998). United States Congressional Elections, 1788-1997: The Official Results of Elections of the 1st through 105th Congresses. McFarland.

[11] Eisenstein, J., & Berkman, M. B. (1999). State Legislators as Congressional Candidates: The Effects of Prior Experience on Legislative and Recruitment Fundraising. Political Research Quarterly, 52(3), 481–498.

[12] Fenno, R. F. (1973). Congressmen in Committees (1st ed.). Little Brown & Co. https://doi.org/10.2307/1978417

[13] Franzitch, S. (1979). Who Makes Our Laws? The Legislative Effectiveness of Members of Congress. Legislative Studies Quarterly, 5(3), 409–428.

[14] Green, M. N. (2010). The Speaker of the House: A Study of Leadership. New Haven: Yale University.

[15] Hall, R., & Deardorff, A. (2006). Lobbying as a legislative subsidy. American Political Science Review, 100(1), 69–84.

[16] Hasecke, E. B., & Mycoff, J. D. (2007). Party loyalty and legislative success are loyal majority party members more successful in the U.S. House of Representatives? Political Research Quarterly, 60(4), 607–617. https://doi.org/10.1177/1065912907305754

[17] Hirano, Shigeo, James M. Snyder Jr., Stephen Daniel Ansolabehere, and John Mark Hansen. (2010). Primary Elections and Partisan Polarization in the U.S. Congress. Quarterly Journal of Political Science, 5(2), 169–191. https://doi.org/10.1561/100.00008052.

[18] Hirano, S. (2014). Primary Elections and the Quality of Elected Officials. Quarterly Journal of Political Science, 9(4), 473–500. https://doi.org/10.1561/100.00013096.

[19] Jacobson, G. C. (1989). Strategic Politicians and the Dynamics of U.S. House Elections , 1946-86. American Political Science Review, 83(3), 773–793.

[20] Jacobson, G. C. (2008). The Marginals Never Vanished: Incumbency and Competition in Elections to the U.S. House of Representatives , 1952-82. American Journal of Political Science, 31(1), 126–141.

[21] Jacobson, G. C. (2016). The Politics of Congressional Elections (9th ed.). Lanham: Rowman & Littlefield.https://doi.org/10.1093/infdis/jit174.

[22] Kalb, D. (2016). House general election returns, 1824–2015. In Guide to U.S. elections 7th edition (pp. 1015-1454). Thousand Oaks, CA: CQ Press doi: 10.4135/9781483380346.n26.

[23] Kamarck, E. C. (2014). Increasing Turnout in Congressional Primaries, (July), 1–18.

[24] Kamarck, E. C., & Wallner, J. (2018). Anticipating trouble: congressional primaries and incumbent behavior, (156), 1–12.

[25] Matthews, D. (1960). U.S. Senators and their world. New York: Random House.

[26] Mayhew, D. (1975). Congress: The Electoral Connection (2nd ed.). New Haven: Yale University.

[27] McCarty, N., Poole, K. T., & Rosenthal, H. (2016). Polarized America: The Dance of Ideology and Unequal Riches. Cambridge: MIT Press.

[28] Mcghee, E., Masket, S., Shor, B., Rogers, S., & Mccarty, N. (2014). A Primary Cause of Partisanship? Nomination Systems and Legislator Ideology. American Journal of Political Science, 58(2), 337–351. https://doi.org/10.1111/ajps.12070.

[29] Meyer, K. (1980). Legislative influence: Toward theory development through causal analysis. Legislative Studies Quarterly, 5(4), 563–585. Retrieved from http://www.jstor.org/stable/10.2307/439574.

[30] Moore, M. K., & Thomas, S. (1991). Explaining Legislative Success in the U. S. Senate: The Role of the Majority and Minority Parties. Western Political Quarterly, 44(4), 959–970. https://doi.org/10.1177/106591299104400409.

[31] O'Neil, T. (1988). Man of the House: The life and political memoirs of Speaker Tip O'Neill. New York: St Martins.

[32] Padró i Miquel, G., & Snyder, J. M. J. (2004). Legislative Effectiveness and Legislative Life. Legislative Studies Quarterly, 31(3), 347–381. https://doi.org/10.2139/ssrn.576406

[33] Pettigrew, Stephen; Owen, Karen; Wanless, Emily. 2014. "U.S. House Primary Election Results (1956-2010)," Harvard Dataverse. https://doi.org/10.7910/DVN/26448

[34] Rogowski, J. C., & Langella, S. (2015). Primary Systems and Candidate Ideology: Evidence From Federal and State Legislative Elections. American Politics Research, 43(5), 846–871. https://doi.org/10.1177/1532673X14555177.

[35] Victor, J. N. (2011). Legislating versus campaigning: The legislative behavior of higher office-seekers. American Politics Research, 39(1), 3–31. https://doi.org/10.1177/1532673X10382854.

[36] Volden, C., Wiseman, A. E., & Wittmer, D. E. (2018). Women's Issues and Their Fates in the US Congress. Political Science Research and Methods, 6(4), 45. Retrieved from http://www.thenation.com/wp-content/uploads/2015/03/CSDI-WP-04-20102.pdf.

[37] Volden, C., & Wiseman, A. E. (2014). Legislative Effectiveness in the United States Congress: The Lawmakers. Cambridge University Press. https://doi.org/10.3171/2009.11.PEDS09248.

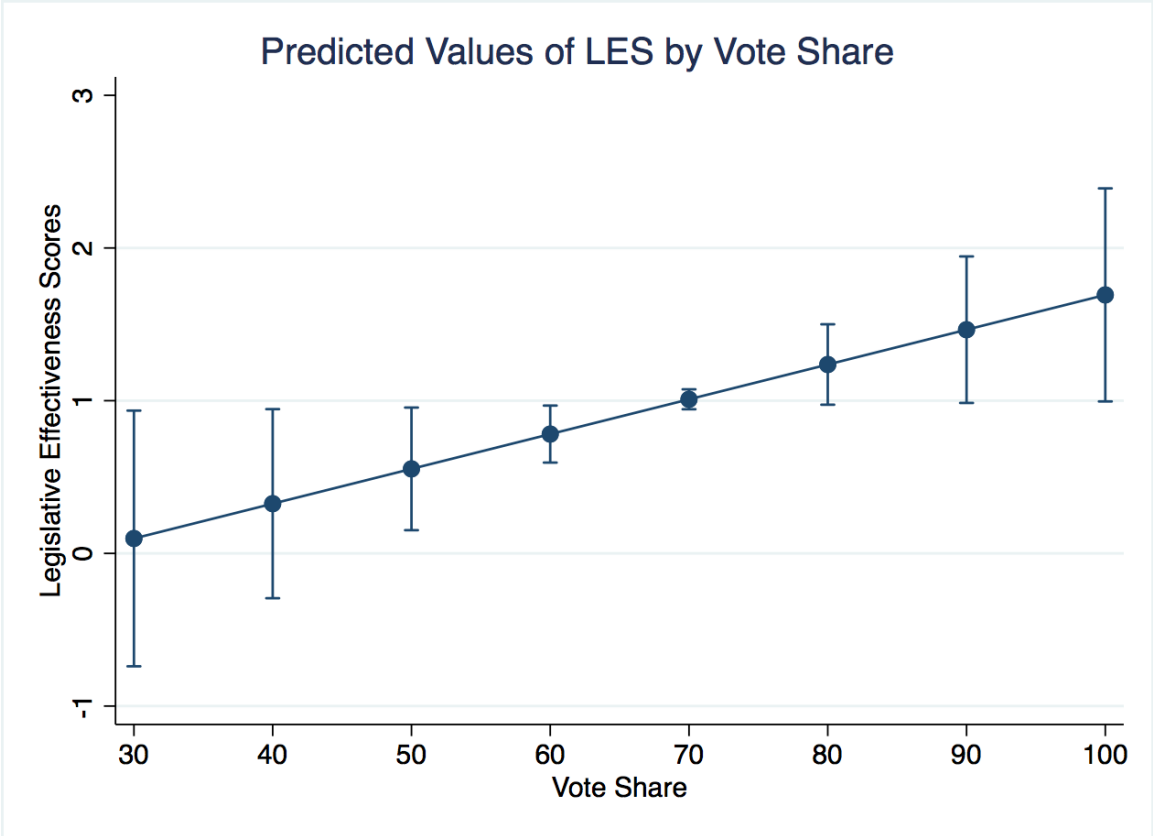
Appendix

Appendix 1: Regressions, 96th through the 113th Congress

	Dependent variable:
	Legislative Effectiveness Score
Cumulative primary challenges	-0.049^{**}
	(0.018)
Vote share	0.015
	(0.010)
Vote share squared	-0.0001
	(0.0001)
Seniority	0.081^{***}
	(0.011)
Majority	0.515^{***}
	(0.042)
Majority Leader	0.308^{*}
	(0.143)
Minority Leader	-0.150^{**}
	(0.050)
Committee Chair	3.001^{***}
	(0.271)
Subcommittee Chair	0.720^{***}
	(0.084)
Power committee	-0.233^{***}
	(0.055)
Female	0.010
	(0.046)
Constant	-0.381
	(0.363)
Observations	7,616
R^2	0.397
Adjusted R^2	0.396
Note:	*p<0.05; **p<0.01; ***p<0.001

Appendix 2: Summary Statistics of All Variables

Statistic	N	Mean	St. Dev.	Min	Max
Legislative Effectiveness Scores	6,287	0.974	1.527	0.000	18.686
Cumulative primary challenges	6,287	1.189	1.656	0	10
Primary Vote share	6,275	89.858	18.169	10.879	100.000
Primary vote share squared	6,275	8,404.554	2,665.706	118.347	10,000.000
General Vote share	6,287	68.514	13.787	37	100
General Vote share squared	6,287	4,884.199	2,066.346	1,369	10,000
Majority	6,287	0.559	0.497	0	1
Female	6,287	0.095	0.294	0	1
African American	6,287	0.066	0.249	0	1
Committee chair	6,287	0.045	0.206	0	1
Subcommittee chair	6,287	0.238	0.426	0	1
Power committee	6,287	0.257	0.437	0	1
Seniority	6,287	5.099	3.640	1	22
Majority leader	6,287	0.016	0.126	0	1
Minority leader	6,287	0.019	0.136	0	1



Appendix 3: Marginal Effects of Vote Share

Appendix 4: 96th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.012	−0.005
	(0.110)	(0.116)
Primary Vote share		−0.024
		(0.027)
Primary Vote share squared		0.0001
		(0.0002)
General Vote share	0.053	0.059
	(0.045)	(0.043)
General Vote share squared	−0.0003	−0.0004
	(0.0003)	(0.0003)
Seniority	0.063	0.065
	(0.043)	(0.043)
Majority	0.245	0.237
	(0.149)	(0.153)
Majority Leader	−0.772	−0.772
	(1.297)	(1.285)
Minority Leader	−0.177	−0.160
	(0.256)	(0.261)
Committee Chair	4.254**	4.250**
	(1.597)	(1.588)
Subcommittee Chair	1.024***	1.039***
	(0.261)	(0.267)
Power committee	−0.001	0.008
	(0.133)	(0.134)
Female	0.212	0.236
	(0.317)	(0.325)
African American	−0.569	−0.582
	(0.324)	(0.333)
Constant	−1.845	−1.207
	(1.720)	(2.117)
Observations	401	401
R^2	0.387	0.389
Adjusted R^2	0.368	0.367
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 5: 97th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.044	−0.063
	(0.064)	(0.077)
Primary Vote share		0.017
		(0.020)
Primary Vote share squared		−0.0001
		(0.0001)
General Vote share	−0.028	−0.030
	(0.033)	(0.034)
General Vote share squared	0.0002	0.0002
	(0.0002)	(0.0002)
Seniority	0.094***	0.098**
	(0.028)	(0.031)
Majority	0.242**	0.250**
	(0.085)	(0.085)
Majority Leader	−0.676*	−0.668*
	(0.334)	(0.335)
Minority Leader	−0.099	−0.096
	(0.208)	(0.209)
Committee Chair	2.877***	2.896***
	(0.571)	(0.579)
Subcommittee Chair	1.120***	1.123***
	(0.193)	(0.190)
Power committee	−0.105	−0.109
	(0.105)	(0.107)
Female	−0.204	−0.222
	(0.145)	(0.146)
African American	−1.407***	−1.425***
	(0.330)	(0.334)
Constant	1.083	0.599
	(1.138)	(1.418)
Observations	406	404
R^2	0.452	0.453
Adjusted R^2	0.435	0.433
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 6: 98th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.044	−0.002
	(0.064)	(0.075)
Primary Vote share		−0.017
		(0.016)
Primary Vote share squared		0.0002
		(0.0001)
General Vote share	0.044	0.043
	(0.034)	(0.034)
General Vote share squared	−0.0003	−0.0003
	(0.0002)	(0.0002)
Seniority	0.102**	0.091**
	(0.032)	(0.035)
Majority	0.424***	0.459***
	(0.109)	(0.110)
Majority Leader	−0.478	−0.511*
	(0.261)	(0.254)
Minority Leader	−0.366*	−0.356*
	(0.146)	(0.144)
Committee Chair	1.923**	1.871**
	(0.651)	(0.666)
Subcommittee Chair	0.928***	0.875***
	(0.214)	(0.208)
Power committee	−0.206	−0.242
	(0.122)	(0.127)
Female	0.174	0.177
	(0.191)	(0.183)
African American	−0.717*	−0.687*
	(0.305)	(0.307)
Constant	−1.536	−1.238
	(1.182)	(1.140)
Observations	412	411
R^2	0.356	0.360
Adjusted R^2	0.336	0.338
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 7: 99th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.094	−0.121
	(0.076)	(0.087)
Primary Vote share		0.040
		(0.031)
Primary Vote share squared		−0.0003
		(0.0002)
General Vote share	0.066	0.066
	(0.040)	(0.041)
General Vote share squared	−0.0004	−0.0004
	(0.0003)	(0.0003)
Seniority	0.124**	0.128**
	(0.040)	(0.044)
Majority	0.629***	0.604***
	(0.147)	(0.137)
Majority Leader	0.302	0.277
	(0.629)	(0.658)
Minority Leader	−0.175	−0.199
	(0.238)	(0.251)
Committee Chair	2.931***	2.948***
	(0.849)	(0.849)
Subcommittee Chair	0.713**	0.715**
	(0.259)	(0.256)
Power committee	−0.424**	−0.420**
	(0.138)	(0.137)
Female	0.344	0.345
	(0.190)	(0.195)
African American	−0.937*	−0.964*
	(0.423)	(0.442)
Constant	−2.444	−3.724*
	(1.445)	(1.900)
Observations	416	416
R^2	0.396	0.398
Adjusted R^2	0.378	0.377
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 8: 100th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	0.015	0.006
	(0.061)	(0.074)
Primary Vote share		0.016
		(0.040)
Primary Vote share squared		−0.0001
		(0.0003)
General Vote share	0.061	0.061
	(0.033)	(0.033)
General Vote share squared	−0.0004	−0.0004
	(0.0002)	(0.0002)
Seniority	0.070*	0.071*
	(0.029)	(0.032)
Majority	0.371***	0.373***
	(0.103)	(0.105)
Majority Leader	0.823	0.821
	(0.550)	(0.558)
Minority Leader	0.046	0.043
	(0.204)	(0.206)
Committee Chair	1.905**	1.907**
	(0.591)	(0.593)
Subcommittee Chair	0.885***	0.880***
	(0.198)	(0.202)
Power committee	−0.572***	−0.574***
	(0.122)	(0.121)
Female	−0.121	−0.101
	(0.114)	(0.118)
African American	−0.608*	−0.612
	(0.295)	(0.318)
Constant	−2.081	−2.587
	(1.199)	(1.820)
Observations	419	418
R^2	0.375	0.375
Adjusted R^2	0.357	0.353
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 9: 101st Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	0.016	0.051
	(0.063)	(0.067)
Primary Vote share		−0.029
		(0.018)
Primary Vote share squared		0.0003
		(0.0001)
General Vote share	0.038	0.024
	(0.036)	(0.037)
General Vote share squared	−0.0003	−0.0002
	(0.0002)	(0.0002)
Seniority	0.084**	0.075*
	(0.031)	(0.032)
Majority	0.364***	0.382***
	(0.107)	(0.108)
Majority Leader	0.197	0.166
	(0.371)	(0.389)
Minority Leader	−0.343**	−0.323**
	(0.128)	(0.124)
Committee Chair	1.756***	1.683***
	(0.438)	(0.449)
Subcommittee Chair	0.813***	0.780***
	(0.167)	(0.166)
Power committee	−0.430***	−0.461***
	(0.117)	(0.121)
Female	0.002	0.020
	(0.186)	(0.194)
African American	−0.024	0.033
	(0.323)	(0.319)
Constant	−1.313	−0.213
	(1.327)	(1.530)
Observations	419	419
R^2	0.417	0.425
Adjusted R^2	0.400	0.405
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 10: 102nd Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	0.020	0.043
	(0.037)	(0.043)
Primary Vote share		−0.023
		(0.016)
Primary Vote share squared		0.0002
		(0.0001)
General Vote share	0.021	0.014
	(0.041)	(0.042)
General Vote share squared	−0.0001	−0.0001
	(0.0003)	(0.0003)
Seniority	0.051**	0.045*
	(0.018)	(0.020)
Majority	0.319***	0.316**
	(0.095)	(0.097)
Majority Leader	0.126	0.176
	(0.326)	(0.331)
Minority Leader	−0.163	−0.167
	(0.162)	(0.162)
Committee Chair	2.533***	2.499***
	(0.594)	(0.595)
Subcommittee Chair	0.983***	0.979***
	(0.212)	(0.212)
Power committee	−0.261*	−0.269*
	(0.115)	(0.117)
Female	0.113	0.121
	(0.163)	(0.164)
African American	−0.589*	−0.599*
	(0.279)	(0.278)
Constant	−0.710	0.162
	(1.514)	(1.551)
Observations	420	418
R^2	0.427	0.428
Adjusted R^2	0.410	0.408
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 11: 103rd Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.015	−0.004
	(0.052)	(0.056)
Primary Vote share		0.003
		(0.013)
Primary Vote share squared		−0.00000
		(0.0001)
General Vote share	−0.013	−0.022
	(0.034)	(0.036)
General Vote share squared	0.0001	0.0002
	(0.0002)	(0.0003)
Seniority	0.105***	0.099***
	(0.026)	(0.027)
Majority	0.424***	0.435***
	(0.111)	(0.113)
Majority Leader	1.660	1.644
	(1.153)	(1.158)
Minority Leader	−0.581*	−0.569*
	(0.239)	(0.236)
Committee Chair	1.993***	1.998***
	(0.499)	(0.503)
Subcommittee Chair	1.065***	1.033***
	(0.270)	(0.274)
Power committee	−0.576***	−0.597***
	(0.146)	(0.149)
Female	0.128	0.116
	(0.134)	(0.135)
African American	−0.517**	−0.466*
	(0.184)	(0.198)
Constant	0.403	0.532
	(1.158)	(1.298)
Observations	421	419
R^2	0.496	0.496
Adjusted R^2	0.481	0.479
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 12: 104th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.048	−0.041
	(0.056)	(0.065)
Primary Vote share		−0.012
		(0.016)
Primary Vote share squared		0.0001
		(0.0001)
General Vote share	−0.051	−0.050
	(0.049)	(0.050)
General Vote share squared	0.0003	0.0003
	(0.0004)	(0.0004)
Seniority	0.070*	0.069*
	(0.028)	(0.029)
Majority	0.489***	0.481***
	(0.118)	(0.127)
Majority Leader	0.419	0.437
	(0.571)	(0.573)
Minority Leader	−0.050	−0.051
	(0.167)	(0.164)
Committee Chair	4.656***	4.668***
	(0.762)	(0.759)
Subcommittee Chair	1.251***	1.261***
	(0.195)	(0.203)
Power committee	0.037	0.041
	(0.146)	(0.155)
Female	−0.024	−0.024
	(0.144)	(0.142)
African American	−0.008	−0.007
	(0.105)	(0.104)
Constant	1.842	2.205
	(1.581)	(1.696)
Observations	426	426
R^2	0.525	0.526
Adjusted R^2	0.512	0.510
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 13: 105th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.065	−0.061
	(0.053)	(0.057)
Primary Vote share		0.003
		(0.015)
Primary Vote share squared		−0.00001
		(0.0001)
General Vote share	0.043	0.039
	(0.038)	(0.039)
General Vote share squared	−0.0003	−0.0003
	(0.0003)	(0.0003)
Seniority	0.098***	0.095**
	(0.028)	(0.030)
Majority	0.659***	0.665***
	(0.110)	(0.111)
Majority Leader	−0.678*	−0.690**
	(0.266)	(0.264)
Minority Leader	−0.020	−0.025
	(0.201)	(0.202)
Committee Chair	3.365***	3.369***
	(0.623)	(0.624)
Subcommittee Chair	1.222***	1.216***
	(0.243)	(0.249)
Power committee	−0.146	−0.157
	(0.132)	(0.133)
Female	0.090	0.101
	(0.125)	(0.127)
African American	−0.005	0.004
	(0.105)	(0.109)
Constant	−1.526	−1.542
	(1.343)	(1.437)
Observations	417	416
R^2	0.505	0.505
Adjusted R^2	0.491	0.488
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 14: 106th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.078	−0.103*
	(0.048)	(0.051)
Primary Vote share		0.033*
		(0.015)
Primary Vote share squared		−0.0002*
		(0.0001)
General Vote share	0.015	0.021
	(0.031)	(0.030)
General Vote share squared	−0.0001	−0.0001
	(0.0002)	(0.0002)
Seniority	0.084**	0.093***
	(0.026)	(0.027)
Majority	0.600***	0.610***
	(0.088)	(0.088)
Majority Leader	−0.502*	−0.484*
	(0.205)	(0.211)
Minority Leader	−0.190	−0.171
	(0.158)	(0.160)
Committee Chair	2.780***	2.703***
	(0.553)	(0.551)
Subcommittee Chair	0.924***	0.904***
	(0.175)	(0.175)
Power committee	−0.248*	−0.238*
	(0.099)	(0.098)
Female	0.090	0.070
	(0.100)	(0.100)
African American	−0.028	−0.069
	(0.093)	(0.095)
Constant	−0.372	−1.486
	(1.111)	(1.225)
Observations	434	432
R^2	0.518	0.522
Adjusted R^2	0.504	0.506
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 15: 107th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.010	0.009
	(0.056)	(0.066)
Primary Vote share		0.001
		(0.030)
Primary Vote share squared		0.00003
		(0.0002)
General Vote share	0.066*	0.060
	(0.031)	(0.031)
General Vote share squared	−0.0004*	−0.0004*
	(0.0002)	(0.0002)
Seniority	0.087***	0.078**
	(0.025)	(0.026)
Majority	0.721***	0.748***
	(0.144)	(0.148)
Majority Leader	0.042	0.077
	(0.568)	(0.572)
Minority Leader	−0.199	−0.213
	(0.215)	(0.221)
Committee Chair	3.317***	3.317***
	(0.861)	(0.867)
Subcommittee Chair	0.476*	0.459*
	(0.192)	(0.194)
Power committee	−0.247	−0.274
	(0.145)	(0.148)
Female	0.036	0.021
	(0.094)	(0.093)
African American	−0.097	−0.070
	(0.084)	(0.083)
Constant	−2.350*	−2.522
	(1.172)	(1.429)
Observations	425	424
R^2	0.425	0.428
Adjusted R^2	0.408	0.408
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 16: 108th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.015	0.012
	(0.052)	(0.063)
Primary Vote share		−0.055
		(0.035)
Primary Vote share squared		0.0004
		(0.0002)
General Vote share	0.026	0.034
	(0.040)	(0.036)
General Vote share squared	−0.0002	−0.0002
	(0.0003)	(0.0002)
Seniority	0.079***	0.075**
	(0.024)	(0.025)
Majority	0.739***	0.718***
	(0.140)	(0.134)
Majority Leader	0.679	0.757
	(0.581)	(0.583)
Minority Leader	−0.040	−0.053
	(0.128)	(0.136)
Committee Chair	3.257***	3.297***
	(0.876)	(0.883)
Subcommittee Chair	0.325	0.377
	(0.211)	(0.207)
Power committee	−0.277	−0.260
	(0.150)	(0.149)
Female	0.017	0.051
	(0.094)	(0.097)
African American	−0.012	0.013
	(0.089)	(0.092)
Constant	−0.786	0.704
	(1.487)	(1.856)
Observations	423	423
R^2	0.410	0.416
Adjusted R^2	0.393	0.396
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 17: 109th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.024	−0.011
	(0.038)	(0.041)
Primary Vote share		−0.001
		(0.016)
Primary Vote share squared		0.00004
		(0.0001)
General Vote share	0.050	0.046
	(0.041)	(0.041)
General Vote share squared	−0.0003	−0.0003
	(0.0003)	(0.0003)
Seniority	0.072**	0.066*
	(0.026)	(0.027)
Majority	0.704***	0.724***
	(0.149)	(0.152)
Majority Leader	0.311	0.288
	(0.283)	(0.284)
Minority Leader	−0.137	−0.149
	(0.127)	(0.131)
Committee Chair	3.491***	3.474***
	(0.848)	(0.848)
Subcommittee Chair	0.233	0.221
	(0.221)	(0.224)
Power committee	−0.357*	−0.373*
	(0.157)	(0.159)
Female	0.158	0.157
	(0.090)	(0.090)
African American	−0.035	−0.004
	(0.090)	(0.096)
Constant	−1.636	−1.681
	(1.588)	(1.583)
Observations	424	424
R^2	0.415	0.416
Adjusted R^2	0.398	0.396
Note:	*p<0.05; **p<0.01; ***p<0.001	

Appendix 18: 110th Congress

	Dependent variable:	
	Legislative Effectiveness Score	
	(1)	(2)
Cumulative primary challenges	−0.016	−0.006
	(0.038)	(0.038)
Primary Vote share		−0.018
		(0.018)
Primary Vote share squared		0.0001
		(0.0001)
General Vote share	−0.004	−0.004
	(0.039)	(0.039)
General Vote share squared	−0.00000	−0.00001
	(0.0003)	(0.0003)
Seniority	0.091**	0.088**
	(0.030)	(0.029)
Majority	0.607***	0.616***
	(0.118)	(0.122)
Majority Leader	0.241	0.233
	(0.236)	(0.245)
Minority Leader	−0.146	−0.144
	(0.127)	(0.127)
Committee Chair	3.440***	3.447***
	(0.791)	(0.794)
Subcommittee Chair	0.267	0.264
	(0.169)	(0.171)
Power committee	−0.297	−0.301
	(0.155)	(0.155)
Female	−0.056	−0.061
	(0.144)	(0.146)
African American	0.078	0.090
	(0.393)	(0.397)
Constant	0.310	0.806
	(1.316)	(1.633)
Observations	424	424
R^2	0.469	0.469
Adjusted R^2	0.453	0.451
Note:	*p<0.05; **p<0.01; ***p<0.001	