The Primary Path for Turning Legislative Effectiveness into Electoral Success

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Abstract

Effective lawmakers are the workhorses of the U.S. Congress, yet we know little about the electoral payoffs of their efforts. Are effective lawmakers better at warding off challengers in the next election? Do they win at a greater rate? To answer these questions, we draw on original data on congressional primary elections from 1980 to 2016, allowing us to focus on elections that lack partisan cues, and where voters tend to be highly knowledgeable about politics. We find that incumbents receive an electoral boost in congressional primaries from their legislative work in Congress. Ineffective lawmakers are more likely to face quality challengers, and they lose their primaries at a greater rate than do more effective lawmakers. These differences diminish in the complex informational environment of a primary with multiple challengers. These findings provide important insights into the conditions under which voters hold their elected representatives accountable for their legislative successes and failures.

Introduction

In 1990 Wayne Gilchrest was elected to represent Maryland's 1st congressional district in the U.S. House of Representatives with nearly 57 percent of the vote. He served in the House until 2008, when he lost his bid for reelection in the Republican Party primary. Throughout his time in the House, Gilchrest was known as an ideological moderate who was not afraid to buck the party line, especially on certain prominent issues, such as environmental policy and LGBT rights. Across Gilchrest's 18 years of service, he made a point of sponsoring substantive legislation on issues that he cared about, with a specific focus on environmental policy. In fact, all of the legislation that Gilchrest introduced throughout his time in the House was on substantive issues, rather than commemorative matters; in his 18 years in Congress he never sponsored a commemorative bill.

Although Gilchrest was a frequent sponsor of legislation, his ability to move his bills through the legislative process was uneven. He had notable successes in the areas of wildlife protection and nature conservation in 1998 through 2004. However, in his final two Congresses Gilchrest introduced notably fewer bills, and none of his bills became law. Gilchrest's inability to shepherd legislation through these later Congresses, coupled with his moderate positions and single-track focus on environmental legislation, likely influenced the entry decisions of potential challengers. In 2008, Gilchrest faced four Republican primary challengers—two of whom had previously served in the Maryland state legislature. On the Democratic side, four candidates competed for their party's nomination. Gilchrest ultimately lost the Republican primary to State Senator Andy Harris by nearly 10 percentage points.[1]

Political scientists have long focused on the electoral connection between legislators

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[1] Harris then lost in the general election to Democrat Frank Kratovil.

and their constituents (Mayhew 1974). Much of the literature on congressional behavior is based on the premise that members make decisions that increase (or, at least, do not decrease) their chances of reelection, or else they suffer consequences at the ballot box (Canes-Wrone et al. 2002). In light of the potential electoral consequences of their behavior, scholars have argued that legislators spend much of their time in the district claiming credit for their accomplishments and developing a *homestyle*, which includes explaining their legislative behavior in Washington (Fenno 1978). While many studies explore how representatives vote with their district interests, and how they point to the virtues of their Washington-based accomplishments, it is less clear whether there is any meaningful electoral benefit from being actively engaged with the legislative process (Payne 1980). More bluntly stated, do highly effective lawmakers reap the rewards of their legislative prowess and achievements at the ballot box?

Previous research finds little evidence that the lawmaking effectiveness of members of the U.S. House boosts their electoral success. Butler et al. (2019) report that the average vote shares for reelected members who perform better than expected in their lawmaking effectiveness is 70.3 percent, compared to 69.6 percent for members who perform below expectations—a statistically and substantively insignificant difference. One plausible reason for this null finding is that the average American voter has little knowledge about the legislative effectiveness of her representative in Congress. However, Butler et al. (2019) find that, when provided with objective information about their representatives' performance, voters express greater approval for effective lawmakers and lower approval for ineffective lawmakers. The ability of constituents to hold their elected officials accountable based on their legislative performance thus appears to be related, in part, to the amount of information that they have at their disposal when making their voting

decisions.

We argue that such informational constraints are only part of the story. In addition to lacking knowledge about legislative performance, voters may treat lawmaking effectiveness as less salient when other factors, such as partisanship, dominate their decision calculus. Many voters plausibly care more about whether a candidate will reflect their policy preferences (and whether they are of the same party) than whether they will be effective lawmakers.

For a representative's lawmaking effectiveness to meaningfully influence her electoral fate, then, voters would need to be relatively well-informed about the legislator's activities; and other factors (such as partisanship) must not be particularly salient to their decisions. To explore such a possibility, we leverage the unique structure of the nomination process in the U.S.—specifically, the incidence of congressional primary elections—to reconsider the relationship between legislative effectiveness and electoral outcomes.[2] Even if the accountability link is weak in the general election, it may be alive and well at the primary stage; to the extent that primary voters are more interested in, and knowledgeable about, politics than are general election voters (Norrander 2015; Sides et al. 2020), and due to primaries taking place *within* rather than *across* political parties.

Our findings suggest that legislative activity in Congress does, in fact, yield rewards to incumbents in their primary elections. We show, first, that representatives who are effective lawmakers face fewer quality challengers in their primaries than incumbents who are less effective lawmakers. This finding suggests that quality candidates are less likely to challenge incumbents who can credibly advertise and claim credit for their policy accomplishments. Second, we find that effectiveness is positively associated with the

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[2]For a full review and analysis of primaries in the U.S., see Hirano and Snyder (2019).

incidence of primary election victory, even after accounting for a wide array of electoral factors that contribute to (or detract from) primary vote shares.

However, we also establish that the accountability link is influenced by the broader informational environment in which the primary election takes place. In particular, the positive relationship between a representative's legislative effectiveness and the prospects of her primary election victory diminishes in more complex electoral environments, such as when the number of primary candidates increases. This finding suggests that primary voters are best positioned to focus on particular incumbent qualities, such as lawmaking effectiveness, when they are not overwhelmed by other information like details about numerous challengers.

The results point to the importance of studying the role and impact of primaries, as a mechanism of democratic accountability in the American political system. The differences between the primary and general election environments have become increasingly transparent in the contemporary political landscape. As the number of swing districts has continued to decline in recent election cycles, the locus of competition in many districts has shifted from the general election to the primary (e.g., Hirano and Snyder 2019). Hence, the primary election may be at least as (if not more) important for incumbents as the general, given that the general election outcome is all but predetermined in many cases. Whereas more than two-thirds of incumbents ran unopposed in their primaries in the 1980s and '90s, in recent years about half of all primaries are contested; and our results are even stronger in recent primaries.

Our findings suggest that, even though legislative effectiveness may not play a central role in determining an incumbent's general election viability, it is important for primary competition and outcomes. Among the more engaged and informed members of the

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primary electorate, there is a clear accountability relationship between representatives' lawmaking activities in Congress and their electoral fortunes. Although primary election defeat remains a relatively rare event, one way for cautious incumbents who are "running scared" (e.g., Jacobson 1987) to shore up their reelection chances is to invest effort to become more effective lawmakers. The scope and consequences of this relationship speak directly to questions about the efficacy of representation in the United States.

Theoretical Considerations

A wide range of studies has focused on the aggregate productivity of Congress and the propensity for legislative gridlock (Brady and Volden 1998; Chiou and Rothenberg 2003; Krehbiel 1998; Mayhew 1991). Scholars and political observers alike have become increasingly concerned about legislative stalemate in recent years, as salient policy issues have remained unaddressed in repeated Congresses (Binder 1999). At a more micro-level, scholars have likewise turned their attention to the study of the determinants and consequences of the legislative productivity of individual legislators in Congress (Anderson et al. 2003; Cox and Terry 2008; Franzitch 1979). Most recently, Volden and Wiseman (2014) have developed a measure of individual lawmaker effectiveness, denoted as the Legislative Effectiveness Score (LES), and they have identified a wide range of personal and institutional considerations that are correlated with a representative's (and senator's) legislative effectiveness.

Consistent with conventional wisdom, they find that members of the majority party, committee chairs, and more senior legislators are more successful at shepherding their bills through the lawmaking process than are their counterparts. They also find that female legislators in the minority party are better able to keep their sponsored bills alive through later stages of the legislative process, in comparison to their male minority-party

peers (Volden et al. 2013). They likewise point to an interesting non-linear relationship between a representative's legislative effectiveness and her prior electoral margin of victory, such that relatively safe and relatively vulnerable legislators have lower Legislative Effectiveness Scores than legislators who are elected with moderately safe (but not overwhelmingly safe) margins. Barber and Schmidt (2018) extend this work to find that greater electoral security in the prior primary election is positively related to subsequent legislative effectiveness. While these results offer interesting insights into the relationship between electoral security and legislative agendas (and success), they do not speak directly to the question of how (if at all) lawmaking effectiveness maps onto subsequent electoral outcomes.

We seek to engage with this question directly, by exploring the relationship between an incumbent's legislative effectiveness and her electoral success in primary elections. We focus on primaries, rather than general elections, because we expect incumbent performance to affect the behavior of potential challengers and primary voters in a way that might be absent in general elections. First, potential challengers are able to learn about incumbents' abilities, and they are motivated to act upon that knowledge. Given that highly effective lawmakers are often quite influential, allowing them to draw attention to their legislative accomplishments and possibly to raise campaign contributions more easily, we expect that high-quality challengers (i.e., Jacobson 1989) will be hesitant to enter races against these types of incumbents.[3] Rather, a more strategic high-quality candidate will likely choose to run for office only after the effective incumbent retires or

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[3]To further support this claim, we also analyze data from the Candidate Emergence Study to examine the perceptions of quality potential candidates (Maestas et al. 2006). Consistent with our argument, potential candidates who perceive the incumbent to have strong legislative accomplishments report lower expectations of winning the primary, and less interest in running for the House (see Table A.14). These survey findings, shown in the Supplemental Appendix, complement the results from actual elections analyzed throughout the manuscript.

the legislative district lines are redrawn.[4] More broadly speaking, we expect that more effective lawmakers would face fewer quality challengers in their primaries than would less effective lawmakers, motivating our first research hypothesis.

Legislative Effectiveness and Quality Challenger Hypothesis: Incumbents exhibiting greater legislative effectiveness will face fewer quality challengers in their primary elections than incumbents who are less effective lawmakers.

Second, it is well documented that primary voters are more interested in, and knowledgeable about, politics (Norrander 1989, 2015). In a comparison of primary and general election voters across four recent election cycles, Sides et al. (2020) find that primary voters report higher levels of interest in politics than both general election voters and the broader party. They report that about three-fourths of Democratic and Republican primary voters say that they are very interested in politics, compared to about 55 percent of general election voters.[5] Given that an incumbent's party affiliation cannot be employed by primary voters in order to inform their evaluations of candidates during the primary stage, it seems plausible that these voters will turn to other considerations with which to evaluate candidates.

One potentially salient piece of information is an incumbent's relative effectiveness as a lawmaker. Indeed, a lawmaker's effectiveness has been shown to be highly correlated with positions of institutional influence, which are likewise correlated with increased fundraising capabilities (Fouirnaies 2018; Fouirnaies and Hall 2018), and perhaps with more media

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[4]A long line of research demonstrates that incumbent success is driven in large part by "scaring off" high-quality challengers. See, for example, Ashworth and Bueno de Mesquita (2008); Banks and Kiewiet (1989); Bianco (1984); Bond et al. (1985); Carson et al. (2007); Carson and Roberts (2013); Gordon et al. (2007); Jacobson and Kernell (1983); Jacobson (1989); Stone et al. (2004).

[5]While we do not have district-level data on the level of information that primary voters have about the effectiveness of their representatives, we are testing an observable implication of why, given the differences among the electorate and information environment at the primary stage (in comparison to the general election), we would expect legislative effectiveness to matter for competition.

attention. Thus, more effective lawmakers may be in a position to advertise their accomplishments in a way that resonates with primary voters, more so than what might naturally occur with a general electorate.

On this point, one can easily point to numerous examples of incumbent Members of Congress highlighting their lawmaking effectiveness as one reason that they should be returned to office. For example, Rep. Don Young (R-AK), one of the most highly effective lawmakers according to Volden and Wiseman (2014), often draws attention to his high legislative effectiveness in his campaign materials, and those claims have been verified by objective fact-checkers.[6] His effectiveness also factors into newspaper endorsements.[7] He has likewise noted his lawmaking effectiveness when trying to dissuade would-be challengers from running against him in Republican primaries.[8] Dating back to one of his most contentious Republican primaries in 2008, when then-Governor Sarah Palin endorsed Republican challenger and Lieutenant Governor Sean Parnell, Young pointed to his effectiveness in Congress as a reason to return him to office.[9] And following his 2012 primary victory, one of his supporters highlighted Young's effectiveness as a reason to vote for him, noting that "He's been there a long time. He knows the ins and outs [of Congress]."[10] All of this is to say that lawmaking effectiveness is a quality that Congressman Young (and numerous other Representatives) emphasize to voters directly and through the media.

That said, one might ask: why would voters care about the relative lawmaking effectiveness of their representatives at all? As alluded to above, although general election voters seem to exhibit little knowledge about the effectiveness of their members, once

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[6]https://www.alaskasnewssource.com/2020/10/15/fact-checker-don-youngs-most-effective-campaign-ad

[7]https://www.juneauempire.com/opinion/empire-editorial-the-empire-ticket/

[8]https://www.anchoragepress.com/news/the-man-who-would-dare-to-primary-don-young/article_3b88b250-9695-11e8-a46e-07da6406bc54.html

[9]Associated Press. 2008. "Young Files for Re-election." May 29.

[10]Thiessen, Mark, Associated Press. 2012. "Rep. Don Young wins GOP Primary for the U.S. House Seat." August 29.

these same voters are presented with objective and credible information about lawmaking effectiveness, they evaluate effective candidates and officeholders more favorably (Butler et al. 2019). Hence, lawmaker effectiveness could plausibly serve as a valence characteristic of candidates (Groseclose 2001; Wiseman 2006), such that increases in an incumbent's legislative effectiveness would make her generally more attractive to voters, independent of her party affiliation or her particular policy stances. These valence characteristics might be especially important during primary elections. As Hirano and Snyder (2019, 2) note, primaries "provide an electoral arena that encourages voters to weigh the relative qualifications of the candidates running, rather than partisan or ideological divisions, when deciding how to vote." While the vast majority of incumbents who run for reelection win, there may be differences at the margins between more and less effective members; and these margins are likely of great concern to members who "run scared" in nearly every election cycle (Mann 1977; King 1997).

In addition, while effective lawmaking may remain an abstract concept to some voters, it is actually often related to real benefits that accrue to a representative's constituents. Returning to Rep. Don Young, Volden and Wiseman (2014) note how some of the most highly effective lawmakers develop their legislative portfolios around district needs; and they point to Young as an illustrative example of this "habit." Young has been the most consistently effective lawmaker in the U.S. House of Representatives over the past fifty years, always exceeding expectations for lawmaking, relative to those with comparable seniority or committee chair status. He introduces more than two dozen Alaska-focused pieces of legislation in an average Congress, typically with multiple successful enactments per Congress. Such lawmaking feats have been coupled with a string of electoral successes, making Young the longest-serving member of the House. Primary voters know him quite

well and value his lawmaking accomplishments; the experiences of Young (and countless others like Young) motivate our second research hypothesis:

Legislative Effectiveness and Electoral Success Hypothesis: *Incumbents exhibiting greater legislative effectiveness will improve their chances of electoral victory.*

However, the accountability link posited above is likely to be conditional on effectiveness information reaching primary voters without being swamped by too many other considerations. For a candidate to benefit electorally from her legislative effectiveness, voters must have a clear sense of her legislative achievements, even when incumbents seek to claim credit for accomplishments over which they had no true influence (Grimmer et al. 2015). To the extent that accountability is even possible, one would expect that candidates will be more successful at leveraging their particular attributes (such as their relative legislative effectiveness) in environments that either emphasize such attributes or minimize the number of alternative considerations.

In cases where there are multiple candidates in an election, all of whom are competing for scarce voter attention and media exposure, the particular characteristics of any individual candidate (including the incumbent) are likely to be underappreciated by voters and swamped by other information. Multiple challengers will each seek to draw attention to their potential qualifications for office, such as their ideological positions and purity, their previous work experiences, their ability and willingness to represent their constituents appropriately, and a wide range of other valence characteristics, which might be candidate-specific. As the number of candidates increases, the scope and variance of information that is presented to voters rapidly increases, as well; and this inability to distinguish oneself from the pack might be particularly pronounced in primary elections, where voters do not naturally employ a candidate's party affiliation as a heuristic in their

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evaluations.

In other words, while we posit that lawmaking effectiveness is a valence characteristic that could benefit an incumbent electorally, a greater number of candidates will likely correspond to an electoral environment where voters are presented with a greater number of valence characteristics, which could diminish the relative electoral value of any one of them, including lawmaking effectiveness. Moreover, the presence of numerous candidates in a primary election might, if anything, send a signal to voters that an incumbent is a low-quality representative and lawmaker, which is why several other candidates have chosen to challenge her. This logic motivates our third and final research hypothesis:

Candidate Competition and Legislative Effectiveness Hypothesis: *The electoral value of an incumbent's legislative effectiveness decreases as the number of primary challengers increases.*

In sum, we expect that lawmaker effectiveness is among the considerations that are relevant to primary voters and potential candidates alike, in addition to factors such as incumbent ideology, their voting behaviors, and group-based characteristics among the primary electorate (Henderson et al. 2020).

Data

In order to explore whether there is an electoral payoff from being an effective lawmaker, we draw on a new dataset of members of the U.S. House of Representatives who sought reelection between 1980 and 2016. More specifically, we collected data on primary election outcomes from the America Votes series and the Federal Election Commission; and data on challenger quality (i.e., whether she previously held elected office) were collected for all primaries during this time period by Porter and Treul (2019) and Thomsen (2021). We merged these data with Volden and Wiseman's (2014) Legislative Effective-

ness Scores (LES) from the 96th-114th Congresses (1979-2015) to explore the relationship between a representative's LES and her subsequent primary election challenges and outcomes. The LES is a comprehensive measure combining fifteen metrics of the bills each member sponsors, how far they move through the lawmaking process, and their relative substantive significance.

Because Legislative Effectiveness Scores are correlated with a lawmaker's seniority, majority-party status, and whether or not she chairs a committee or subcommittee, one might fear that our analysis would be based on spurious relationships if voters reward incumbents based on their name recognition (due to seniority) or their positions in the chamber.[11] As such, we here rely instead on each incumbent's *LES Relative to Expectations*. Put simply, within each Congress we estimate a linear regression with LES as the dependent variable and seniority, party status, and chair status as independent variables. If a lawmaker's LES is less than 50% of the resulting predicted value, we characterize her as Below Expectations. If she is 50% or more above her benchmark, we characterize her as Exceeding Expectations. And we characterize those in the middle, near their predicted values, as Meeting Expectations. We denote these categories as *LES Relative to Expectations* taking values of 1 (below), 2 (meets) or 3 (exceeds).[12]

One advantage of these data is that they likely map reasonably well onto the impressions that voters (and potential challengers) have about incumbents' lawmaking performances. That is, potential challengers can plausibly assess whether an incumbent is above or below average, with regards to lawmaking effectiveness, even if they do not possess a granular knowledge of every aspect of incumbent behavior, and how that behavior maps

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[11]Additionally, Hirano and Snyder (2019, 245) speculate that the distribution of the LES in its raw form may not allow researchers to adequately identify unusually ineffective lawmakers. Our approach helps overcome this limitation.

[12]For robustness, we explore the results using the raw LES, as well as breaking apart *LES Relative to Expectations* into its component parts, and we reference these findings throughout the paper below.

onto lawmaking productivity. That said, it is still worth noting that these measures of legislative effectiveness are not without limitations. First, these effectiveness scores do not capture how successful a representative is at obstructing the lawmaking process, which many voters may prefer over the production of laws. Second, they are not tailored to the specific issues of greatest value to primary voters in each representative's individual district, but instead capture an overall sense of lawmaking effectiveness. Third, they set aside other considerations, such as a representative's effectiveness in communicating with constituents, in bringing targeted funds to the district, or in engaging in oversight activities. To the extent that the metric used here is noisy or incomplete along these lines, it may be thought of as presenting a hard test for the hypotheses being examined.

In total, our dataset includes more than 7,400 instances of congressional incumbents seeking reelection during this period.[13] To calculate the number of quality challengers, we use Jacobson's (1989) binary measure of whether the candidate previously held an elected public office. For robustness purposes, we also examine a measure of whether the challenger raised at least 15 percent of preprimary receipts (Thomsen 2021).[14] In the analysis that follows, we also control for a variety of factors that are likely to influence election outcomes and the incidence of candidate entry. Specifically, we use Jacobson and Carson's (2016) district presidential vote share data to measure *District Partisanship*. We subtract the presidential vote share for the incumbent's party nationally from the

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[13]We do not include races with more than one incumbent, thus excluding 94 incumbents from the analysis. In addition, retiring members are not included in the analysis, as our central concern is whether legislative effectiveness improves the electoral prospects of members who seek reelection. However, we also examined differences in legislative effectiveness among retiring and non-retiring members. Consistent with the argument that members of Congress may focus on lawmaking effectiveness for electoral purposes, retiring members are less effective, on average, than members seeking reelection ($p < 0.05$).

[14]The 15 percent threshold was chosen because quality candidates who run against an incumbent raise 15 percent of preprimary receipts, on average. This measure provides an additional way to capture viability, and it may be especially helpful in years when traditional political experience is viewed as less desirable to voters (Porter and Treul 2019).

presidential vote share for the incumbent's party in the district, so that higher values correspond to greater partisan advantage. We include Bonica's (2014) measure of the incumbent's ideology, with *Ideologue* capturing Democratic liberalism and Republican conservatism, as these individuals are expected to be more likely to avoid significant challenges and win the primary (Brady et al. 2007; Hall and Snyder 2015; Thomsen 2020). We also account for a representative's gender, membership on a power committee (i.e., Appropriations, Rules, and Ways and Means), and role as a party leader, as these variables have been shown to be correlated with a representative's legislative effectiveness, and they may also influence her electoral fortunes.[15] Finally, we control for whether the state legislature in the incumbent's state has term limits, which might influence the supply of likely challengers.

We take several steps to address the potentially endogenous relationship between law-making effectiveness and electoral success. First, we take advantage of temporal ordering by looking at effectiveness in the Congress leading up to the election. This is the exact opposite of the approach of scholars who have studied whether those from safe seats are more effective in the Congress after they are elected (Barber and Schmidt 2018; Volden and Wiseman 2014). Second, one may be concerned that the same legislators are consistently effective in the electoral and lawmaking arenas, making it difficult to disentangle these effects. Along those lines, it is important to note that Volden and Wiseman (2014) find that the most effective lawmakers are not the safest, but rather those who are neither too safe nor too vulnerable. Third, to further separate the roles of electoral and legislative success, we include the incumbent's share of the vote in the previous primary

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[15]We do not include a representative's seniority, majority-party status, and whether she held a committee or subcommittee chair in the models due to their inclusion in constructing *LES Relative to Expectations*, but we explore further independent effects of these considerations in the Appendix. All findings are robust to including these variables (see Appendix Tables A.2, A.3, A.4, A.8, and A.9).

election (*Lagged Primary Vote*). By including this variable, we seek to essentially control for the extent to which lawmaking effectiveness might be driven by an incumbent's prior electoral success, or by perceptions of her future vulnerability.

In all of the models, we include year fixed effects (to account for any particular anti-incumbent sentiment or other temporal considerations).[16] Definitions of these variables and all control variables, as well as data sources and summary statistics, can be found in Appendix Table A.1.

Results

Turning to our first hypothesis (the *Legislative Effectiveness and Quality Challenger Hypothesis*), we present the results from a series of zero-inflated Poisson regression analyses in Table 1.[17] The dependent variable captures the number of own-party quality challengers in the incumbent's primary (in Models 1.1-1.3) and the number of own-party challengers who raised at least 15 percent of preprimary receipts (Model 1.4). The data in Models 1.1 and 1.2 include all primary races, while the data in Models 1.3 and 1.4 exclude primaries that are unopposed. In each specification, the crucial variable of interest is *LES Relative to Expectations*, which captures the incumbent's effectiveness in the Congress leading up to the election. Consistent with the *Legislative Effectiveness and Quality Challenger Hypothesis*, we expect that the coefficient on *LES Relative to Expectations* will be negative and statistically significant, implying that effective incumbents scare off quality challengers.

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[16] All results reported throughout the manuscript are robust to excluding these fixed effects. Robustness checks explore the time-series, cross-sectional nature of these data more completely, with fixed effects by year and random effects across incumbents (see Appendix Tables A.6 and A.11). We also find support for the main hypotheses to be robust across eras (see Appendix Tables A.7 and A.12), with even stronger results in more recent elections.

[17] The zero-inflated Poisson models take into consideration the large number of zero-value observations in the count data. The results reported here are robust to considering other model structures, such as negative binomial count models (see Appendix Table A.5).

Table 1: Effective Incumbents Scare Off Own-Party Quality Challengers

	(1.1) Quality Challengers All Races	(1.2) Quality Challengers All Races	(1.3) Quality Challengers Opposed	(1.4) Viable Challengers Opposed
LES Relative to Expectations	-0.184**		-0.138*	-0.189**
	(0.073)		(0.066)	(0.064)
Meets Expectations		-0.325**		
		(0.114)		
Exceeds Expectations		-0.317*		
		(0.141)		
Lagged Primary Vote	-1.323**	-1.340**	-0.452*	-0.931**
	(0.216)	(0.216)	(0.236)	(0.214)
District Partisanship	0.038**	0.038**	0.023**	0.024**
	(0.004)	(0.004)	(0.004)	(0.003)
Ideologue	-0.746**	-0.751**	-0.498**	-0.238*
	(0.158)	(0.158)	(0.162)	(0.142)
Female	-0.118	-0.109	-0.124	-0.278*
	(0.178)	(0.178)	(0.161)	(0.155)
Power Committee	-0.259*	-0.255*	-0.241*	-0.450**
	(0.125)	(0.125)	(0.118)	(0.148)
Party Leader	-0.404	-0.404	-0.521*	-1.597**
	(0.287)	(0.285)	(0.291)	(0.507)
State Legislative Term Limits	0.008	0.010	-0.135	-0.142
	(0.144)	(0.146)	(0.139)	(0.133)
Constant	-0.306	-0.440	-0.678*	-0.068
	(0.373)	(0.347)	(0.386)	(0.231)
Number of Observations	7,456	7,456	2,331	2,331
Log likelihood	-1,764.51	-1,763.19	-1,297.44	-1,184.52
LR Chi-squared	396.08	395.79	148.54	194.25

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from zero-inflated Poisson regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. For Models 1.1-1.3, the dependent variable is the number of own-party quality challengers in the incumbent's primary. For Model 1.4, the dependent variable is the number of own-party challengers who raised at least 15 percent of preprimary receipts. The data in Models 1.1 and 1.2 are drawn from all races. The data in Models 1.3 and 1.4 exclude unopposed races. The results show that incumbents who outperform their otherwise similar peers at lawmaking face fewer own-party experienced and financially viable challengers.

As hypothesized, we see that more effective lawmakers face fewer quality challengers in the primary than do their less effective counterparts. In all races (Model 1.1), a shift from Below Expectations to Exceeding Expectations is associated with facing one-third fewer quality challengers; if unopposed primaries are excluded (Model 1.3), a similar shift decreases the expected number of quality challengers from 0.25 to 0.19.[18]

Turning to the control variables, incumbents who received a higher vote share in the previous primary election face fewer quality challengers, consistent with benefiting from their popularity. Consistent with Hirano and Snyder (2019), we also see that the rise of same-party quality challengers is more likely in districts that favor the incumbent's party (thus signaling that a primary victory is more likely to lead to a general election victory). Relatedly, we also see fewer quality challengers emerge against more liberal Democratic and conservative Republican incumbents (*Ideologue*). Another noteworthy finding that emerges from the analysis is that incumbents who are members of the party leadership, or who serve on one of the House's power committees, are less likely to face same-party quality challengers.[19] All of these results match our expectations, given the extant literature, and thus lend credence to the overall estimation strategy employed here.

To further illustrate the magnitude of our main findings, we present predicted probabilities in Figure 1 from Model 1.2, which includes separate indicators for whether the incumbent Meets Expectations or Exceeds Expectations, and from Model 1.4, which looks at viable challengers based on fundraising receipts.[20] The range on the y-axis is higher

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[18]These predicted value calculations are based on holding binary control variables at their mode and all other control variables at their means.

[19]Further considerations of likely influential positions in Congress could be based on members being in the majority party, more senior, or serving as committee chairs. Because these considerations are already accounted for in constructing the *LES Relative to Expectations* variable, we exclude them from our main analysis. Nevertheless, we explore them in detail in our Supplemental Appendices, finding that their inclusion or exclusion from our analysis does not substantively change the scope of support for the hypotheses explored throughout the paper.

[20]Control variables are held at their mode (for dichotomous variables) or their means (for other vari-

Figure 1: Effective Lawmakers Face Fewer Quality Primary Challengers

(a) Quality Challengers, All Races

(b) Viable Challengers, Opposed Races
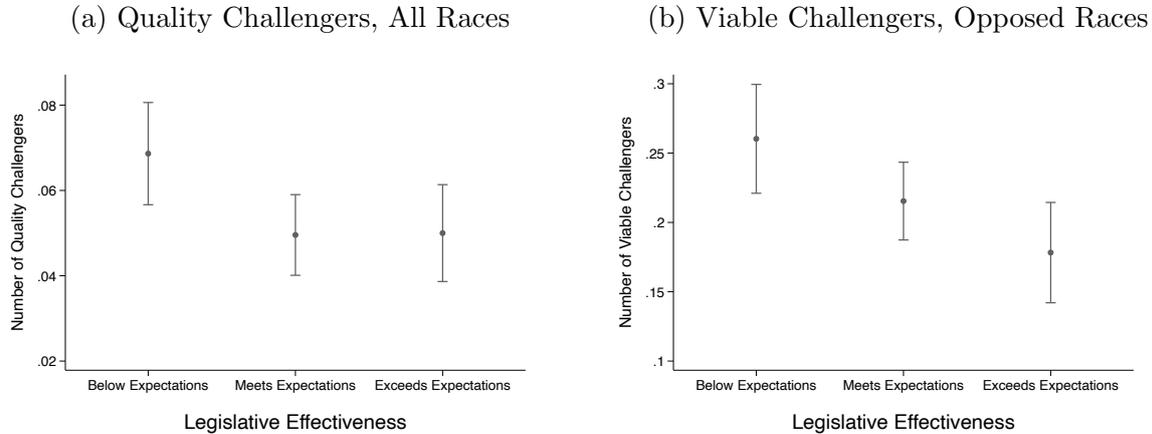
Note: The left graph shows the decrease in the number of experienced challengers for more effective legislators (values calculated from Model 1.2). The right graph shows the decrease in the number of challengers who raised at least 15 percent of all preprimary receipts (values calculated from Model 1.4). The range on the y-axis is higher in the right graph because the model excludes unopposed races. Both graphs show fewer quality challengers for incumbents with higher lawmaking effectiveness.

in the right graph because the model excludes unopposed races. The number of quality or viable challengers in the primary is shown on the y-axis along with 95% confidence intervals, and the three categories of the *LES Relative to Expectations* variable are on the x-axis. In the left graph, we can see that a rise in quality challengers occurs for those whose LES is Below Expectations (such as Wayne Gilchrest in the example above), relative to those who Meet or Exceed Expectations. Consistent with the findings reported in Table 1, these latter predicted values (at 0.05) fall outside of the 95% confidence interval for the Below Expectations group (centered around 0.07).

The results from examining the number of challengers who raise more than 15 percent of preprimary receipts show the same pattern. Legislators in contested primaries whose LES is Below Expectations face 0.26 viable candidates, on average, compared to 0.18

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ables) in generating these values.

for those whose LES Exceeds Expectations (such as Don Young).[21] Put another way, effective lawmakers face a viable challenger in 1 of 6 primary reelection battles, whereas those below expectations face viable challengers in 1 of 4 races. As Rep. Gilchrest found in his ninth reelection bid, even one such instance can end a legislative career.

Indeed, the entrance of a quality challenger is highly consequential in determining electoral success. Over our time period, a full 99.7% of incumbents with no quality challenger won their primary. This rate dropped to 89% for those facing quality challengers, which occurs for nearly twenty percent of the opposed incumbents in our sample, and to 75% when more than one quality challenger emerged. Similarly, 99.9% of incumbents with no challenger who raised at least 15 percent of preprimary receipts won their primary, compared to 86% and 65% of incumbents who won the primary when they faced at least one or more than one candidate, respectively, who raised at least 15 percent of preprimary receipts. Thus a substantial determinant of primary election victory is the nature of the challenge presented; and lawmaking effectiveness is significantly correlated with whether or not such a challenge arises.

Beyond this important indirect effect on election victory, we explore a more direct effect in our *Legislative Effectiveness and Electoral Success Hypothesis*. To test this hypothesis, we estimate a series of logistic regressions with the dependent variable capturing whether an incumbent won her primary. Our results from this analysis are presented in Table 2, where Models 2.1 through 2.3 analyze data from all primaries, and Model 2.4 analyzes data only from contested primaries. Models 2.2 and 2.3 explore alternative measures of legislative effectiveness to the standard *LES Relative to Expectations* variable found in

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[21]We also considered the possibility of whether those incumbents who face quality challengers (or those who lose their primary) engage in fewer lawmaking activities in the remainder of the term, and therefore appear less effective. Among other explorations, we excluded primary losers from the analyses, and the results in Table 1 remained the same.

Table 2: Effective Lawmakers Are More Likely to Win their Primaries

	(2.1) Win Primary All Races	(2.2) Win Primary All Races	(2.3) Win Primary All Races	(2.4) Win Primary Opposed
LES Relative to Expectations	0.357*			0.340*
	(0.193)			(0.190)
Meets Expectations		0.550*		
		(0.293)		
Exceeds Expectations		0.605		
		(0.381)		
Legislative Effectiveness Score			0.362**	
			(0.149)	
Faced Quality Challenger	-3.187**	-3.189**	-3.212**	-2.055**
	(0.306)	(0.305)	(0.311)	(0.283)
Lagged Primary Vote	1.375**	1.386**	1.182*	1.085*
	(0.582)	(0.578)	(0.586)	(0.594)
District Partisanship	-0.015	-0.015	-0.016	-0.009
	(0.010)	(0.010)	(0.010)	(0.010)
Ideologue	0.859**	0.873**	0.917**	0.775*
	(0.349)	(0.348)	(0.337)	(0.354)
Female	0.135	0.111	0.189	0.167
	(0.427)	(0.433)	(0.425)	(0.419)
Power Committee	0.523	0.522	0.507	0.507
	(0.338)	(0.339)	(0.339)	(0.335)
Party Leader	-0.091	-0.069	-0.059	0.042
	(0.741)	(0.742)	(0.749)	(0.735)
State Legislative Term Limits	-0.208	-0.206	-0.228	-0.101
	(0.313)	(0.313)	(0.314)	(0.315)
Constant	3.244**	3.554**	3.681**	2.256**
	(0.758)	(0.706)	(0.701)	(0.758)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-286.93	-286.57	-284.76	-259.05
LR Chi-squared	332.19	335.55	329.82	149.89

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from logistic regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. The dependent variable captures whether the incumbent won the primary. Results show that incumbents who are more effective as lawmakers are more likely to win their primaries.

the other two models.[22]

As we can see across all specifications, a representative's legislative effectiveness in the Congress leading up to the election is positively associated with winning her primary election.[23] For example, based on Model 2.1, compared to lawmakers who are Below Expectations in effectiveness, those who Exceed Expectations double their odds of winning their primary.[24]

It is also clear from Table 2 that another main factor that influences an incumbent's reelection chances in the primary is the entry of quality challengers. Thus effective lawmakers seem to gain a further benefit—decreasing the likelihood of quality challengers as shown in Table 1, and also directly winning at a greater rate upon controlling for the existence of such challengers. As per our introductory example, Rep. Gilchrest's decline in lawmaking effectiveness may have made his seat particularly vulnerable, an inviting one for multiple quality challengers, and ultimately too difficult to defend. Based on Model 2.4, when Gilchrest was highly effective and was facing only low-quality challengers, he (and others like him) enjoyed a 99.2% reelection rate. Upon facing a quality challenger, this rate drops to 94.1% for lawmakers Exceeding Expectations in effectiveness and to 89.1% for incumbents performing Below Expectations, all else equal.

With respect to the other control variables, consistent with previous research (Brady et al. 2007; Hall and Snyder 2015; Thomsen 2020), ideologues seem to win at a higher rate. Similar to the results above, incumbents who won the previous primary by a larger

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[22]Further robustness of the main results reported here can be found in the models in the Supplemental Appendix, which account for primary losses being rare events, and for the cross-sectional time-series nature of the data.

[23]We do not expect these relationships to emerge in the general election due to lower levels of political interest and knowledge among general election voters, and due to the heightened effect of partisan cues. In additional analyses not reported here, we find no association between legislative effectiveness and general election success.

[24]The relevant calculation from Model 2.1 is $e^{(2)(0.357)} = 2.04$, or a doubling of the odds of winning the primary, all else equal.

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margin are more likely to win their next primary, as well. The remaining control variables lack statistical significance in this specification, seemingly only exerting their influence via scaring off challengers, as was shown in Table 1.

Taken together, the results of Tables 1 and 2 lend support to the argument that legislative effectiveness yields electoral benefits in primaries. However, as discussed above, there is reason to believe that other features of the electoral environment may influence lawmakers' (including effective lawmakers') prospects, as well. Turning to the *Candidate Competition and Legislative Effectiveness Hypothesis*, we seek to identify whether the electoral payoffs of legislative effectiveness diminish in an overloaded informational environment, such as when the number of candidates in the primary election increases. To engage with this hypothesis, we present the analyses from a series of logistic regressions in Table 3 that are analogous to those in Table 2, with the addition of interactions between our various effectiveness measures and the *Number of Challengers*. Consistent with our third hypothesis, we expect that the coefficient on this interaction will be negative and statistically significant, which would suggest that the marginal electoral benefit of a representative's lawmaking effectiveness decreases as more candidates enter the race. Additional candidates contribute to a more complex informational environment where the qualities of each candidate (including the incumbent) are less clear and salient.

Turning to our results, we see that across all four models, there is clearly a positive relationship between an incumbent's effectiveness and the probability that she wins the primary, but the electoral benefit of a representative's *LES Relative to Expectations* diminishes as the number of primary candidates in the race increases (Models 3.1 and 3.4). Similar negative interactions emerge when breaking the effective measure into its component parts (Model 3.2) and when substituting in the raw *Legislative Effectiveness*

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Table 3: Electoral Benefits of Effectiveness Decline in Crowded Races

	(3.1) Win Primary All Races	(3.2) Win Primary All Races	(3.3) Win Primary All Races	(3.4) Win Primary Opposed
LES Relative to Expectations	0.655**			0.643*
	(0.274)			(0.283)
Number of Challengers	-0.135	-0.460*	-0.512**	-0.016
	(0.358)	(0.224)	(0.184)	(0.202)
LES Relative to Expectations	-0.309*			-0.219*
× Number of Challengers	(0.164)			(0.128)
Meets Expectations		0.663*		
		(0.403)		
Exceeds Expectations		1.388**		
		(0.529)		
Meets Expectations		-0.226		
× Number of Challengers		(0.249)		
Exceeds Expectations		-0.703**		
× Number of Challengers		(0.283)		
Legislative Effectiveness Score			0.658**	
			(0.253)	
Legislative Effectiveness Score			-0.155*	
× Number of Challengers			(0.072)	
Lagged Primary Vote	1.578**	1.624**	1.435*	1.270*
	(0.651)	(0.636)	(0.635)	(0.625)
District Partisanship	-0.018*	-0.018*	-0.019*	-0.011
	(0.010)	(0.010)	(0.010)	(0.010)
Ideologue	1.066**	1.082**	1.170**	0.907**
	(0.345)	(0.341)	(0.341)	(0.353)
Female	-0.038	-0.076	0.038	0.066
	(0.438)	(0.441)	(0.442)	(0.421)
Power Committee	0.537	0.536	0.486	0.524
	(0.363)	(0.361)	(0.347)	(0.349)
Party Leader	-0.052	-0.055	-0.027	0.131
	(0.721)	(0.719)	(0.714)	(0.731)
State Legislative Term Limits	0.056	0.055	-0.025	0.069
	(0.328)	(0.324)	(0.331)	(0.312)
Constant	2.670**	3.274**	3.401**	1.660*
	(1.022)	(0.892)	(0.884)	(0.859)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-314.11	-313.65	-313.66	-278.43
LR Chi-squared	186.18	195.09	181.15	96.85

Note: *p<0.05, **p<0.01, one-tailed tests. Results from logistic regressions for 1980-2016; the dependent variable is whether the incumbent won the primary. Standard errors are clustered by member. Results illustrate the conditional benefits of effective lawmaking on primary victory, with electoral benefits decreasing as the number of challengers increases.

Score (Model 3.3).[25] These findings are consistent with the argument that a larger field of primary challengers essentially blurs the signal that voters receive about an incumbent's lawmaking effectiveness, making it less valuable as a primary election resource.

To illustrate these findings further, in Table 4 we present the predicted probabilities of primary defeat at different values of legislative effectiveness when there are one, two, and three primary challengers. These values are based on Model 3.4.[26] Moving down the table, we can see once again that the chance of a primary defeat increases with more challengers (here irrespective of challenger quality). However, moving left to right, a further effect is evident. In the case of one challenger, lawmaking effectiveness cuts the chance of defeat to less than half of its former value. In contrast, in a primary with three primary challengers, the benefit of effectiveness disappears.[27] Thus it appears that crowded fields tend to diminish the value of effective lawmaking, perhaps muddying the informational waters or adding other salient considerations into voters' calculations.

Table 4: Probability of Defeat, by Effectiveness Relative to Expectations

	Below Expectations	Meets Expectations	Exceeds Expectations
1 Primary Challenger	2.79%	1.84%	1.21%
2 Primary Challengers	3.51%	2.87%	2.35%
3 Primary Challengers	4.39%	4.45%	4.51%

Note: Results show that the largest electoral security benefits from effective lawmaking accrue to incumbents facing a low number of primary challengers.

To summarize, in Table 1 we established that more effective lawmakers are less likely to face quality challengers in the first place, and in Table 3, we found that fewer challengers

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[25]Further robustness analyses in Appendix Table A.13 account for primary election results being rare events.

[26]To generate these values, control variables are held at their mode (for dichotomous variables) or their means (for other variables).

[27]Among contested primaries, about 70% involve one challenger, 20% involve two challengers, and 10% involve three or more.

allows the effective lawmaking signal to shine through more clearly to voters. Thus effective lawmakers earn a triple level of enhanced security in primaries, arising from (1) diminishing the number of quality challengers they face, (2) producing a less complex electoral environment in which information about lawmaking effectiveness can more easily reach voters, and also (3) winning at a greater rate, even upon controlling for these other benefits (Table 2).

Support for our three hypotheses is robust to a variety of further analyses. For example, all findings are robust to inclusion of additional control variables that are linked to legislative effectiveness and to primary election outcomes, including legislators' seniority, majority party status, and position as committee or subcommittee chairs. Moreover, the results are robust to alternative modeling structures, such as taking into account that a sizable fraction of primaries contain no quality challengers, or accounting for the cross-sectional time-series nature of the data structure. Finally, examining subsets of the data shows the results to be fairly consistent across the earlier and later time periods under examination, with somewhat stronger results in recent decades. The results of these robustness analyses are offered in detail in the Appendix tables.

Conclusion

Prior research suggests that voters do not hold their representatives accountable for their lawmaking effectiveness. The extant literature, however, has focused on general election results, in which voters do not typically possess much credible information about incumbents' effectiveness, and in which their decisions may be swayed by other salient considerations, such as candidates' partisanship. We argue that accountability can manifest itself much more clearly when these two factors are limited or eliminated altogether. More specifically, we focus on primary elections, which are characterized by more informed

and interested voters, and where partisan considerations are less relevant than in general elections.

In focusing our analysis on primaries, we find strong evidence of effective lawmakers outperforming ineffective lawmakers in the electoral arena: incumbents who were more effective lawmakers in the Congress leading up to the election are less likely to face quality challengers in their primaries, and they win their primaries at a significantly higher rate than do less effective lawmakers. Moreover, we uncover an additional condition under which this electoral benefit is especially strong. In primaries with fewer challengers, effective lawmaking plays a greater role in voters' decisions.

Together, these findings contribute to a broader picture of the conditions under which voters hold their representatives accountable for their effectiveness (or ineffectiveness) as lawmakers. Crucially, the information environment must be conducive to transmitting signals about legislative effectiveness to voters in a clear way. This information environment is more likely to exist when there are knowledgeable primary voters considering a two-candidate race than when there is a crowded field (or among general election voters, who rely most heavily on partisan cues in making their decisions).

The research findings presented here offer implications that extend well beyond the analysis of primary elections. Whether incumbent legislators are rewarded for their lawmaking effectiveness seems to be fundamentally linked to more basic considerations of whether constituents know how effective their representatives are, or whether effectiveness information is crowded out or trumped by other factors, such as partisanship. At the same time, the findings here demonstrate the value of focusing on primary elections to help uncover such conditions.

These findings also raise a series of further questions for future work. First, beyond

an electoral benefit from a legislator's overall lawmaking effectiveness, is there a heightened benefit for legislators who are particularly successful in advancing bills on the set of issues that are most salient to their constituents? Second, for voters who prefer obstruction of opponents' legislation rather than new lawmaking, how can incumbents credibly make a case for effectiveness in that realm? Third, what are the specific mechanisms through which information about lawmaking effectiveness (or any other incumbent trait) is meaningfully conveyed to voters? Is campaign literature sufficient, or must there be an independent source of confirmation, such as a newspaper endorsement? On the whole, primary elections offer a promising arena in which to explore these important questions.

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A   Appendix

Table A.1: Descriptive Statistics

Variable (Definition & Source)	Mean	Std. Dev.
LES Relative to Expectations[a]: 1 = below expectations, 2 = meets expectations, 3 = exceeds expectations, from the Congress leading up to reelection.	1.85	0.77
Number of Quality Primary Challengers[b,d]: Number of challengers with prior electoral success.	0.07	0.31
Number of Viable Primary Challengers[d]: Number of challengers who raised > 15 percent of preprimary receipts.	0.06	0.27
Lagged Primary Vote[d]: Incumbent's share of the primary vote in previous primary election.	0.88	0.20
District Partisanship[e]: District presidential vote for the incumbent's party minus national presidential vote.	8.83	11.68
Ideologue[c]: Degree of ideological extremism (Democratic liberalism and Republican conservatism).	0.63	0.37
Female[d]: 1 = incumbent is a woman.	0.11	0.32
Power Committee[a]: 1 = incumbent sits on Appropriations, Rules, or Ways and Means.	0.25	0.43
Party Leader[a]: 1 = incumbent is in a party leadership position.	0.04	0.20
State Legislative Term Limits[d]: 1 = state legislature in the incumbent's state has term limits.	0.25	0.43
Number of Same-Party Primary Challengers[b,d]: Number of same-party primary challengers, regardless of quality.	0.44	0.91
Seniority[a]: Terms of incumbent seniority.	5.13	4.02
Majority Party[a]: 1 = incumbent is in majority party.	0.57	0.50
Chair[a]: 1 = incumbent is a committee or subcommittee chair.	0.27	0.44
Primary win[b,d]: 1 = incumbent won the primary.	0.99	0.10

The variables were created by the authors from the following data sources: [a]Volden and Wiseman (2014) data at www.thelawmakers.org. [b]Porter and Treul (2019). [c]Bonica (2014). [d]Thomsen (2021). [e]Jacobson and Carson (2016).

Table A.2: Challenger Findings With Proxies for Effectiveness, No Effectiveness Measures

	(A2.1) Quality Challengers All Races	(A2.2) Quality Challengers Opposed	(A2.3) Viable Challengers Opposed
Seniority	0.039**	0.031**	0.043**
	(0.014)	(0.013)	(0.013)
Majority Party	0.028	0.036	0.028
	(0.133)	(0.126)	(0.124)
Chair	0.026	-0.233	-0.346**
	(0.148)	(0.142)	(0.143)
Power Committee	-0.311**	-0.309**	-0.553**
	(0.128)	(0.121)	(0.140)
Lagged Primary Vote	-1.580**	-0.554*	-1.057**
	(0.257)	(0.250)	(0.231)
District Partisanship	0.037**	0.022**	0.023**
	(0.004)	(0.004)	(0.004)
Ideologue	-0.639**	-0.431**	-0.157
	(0.166)	(0.167)	(0.149)
Female	-0.063	-0.117	-0.281*
	(0.178)	(0.162)	(0.160)
Party Leader	-0.447	-0.622*	-1.756**
	(0.287)	(0.302)	(0.526)
State Legislative Term Limits	-0.024	-0.143	-0.153
	(0.140)	(0.136)	(0.134)
Constant	-0.667*	-0.944**	-0.379
	(0.359)	(0.364)	(0.233)
Number of Observations	7,456	2,331	2,331
Log likelihood	-1,762.44	-1,295.94	-1,181.32
LR Chi-squared	369.58	136.99	196.87

Note: *p<0.05, **p<0.01, one tailed tests. Results are from zero-inflated Poisson regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. For Models A2.1 and A2.2, the dependent variable is the number of own-party quality challengers in the incumbent's primary. For Model A2.3, the dependent variable is the number of own-party challengers who raised at least 15 percent of preprimary receipts. The data in Model A2.1 are drawn from all races. The data in Models A2.2 and A2.3 exclude unopposed races. Results show that, among seniority, majority party status, and committee chairs—proxies that voters might use as substitutes for lawmaking effectiveness—only being a committee chair lowers the likelihood of facing quality primary challengers, and only in the subset of contested races. Senior legislators appear to attract more quality challengers, perhaps due to potential challengers' growing impatience in waiting for senior members of Congress to retire.

Table A.3: Challenger Findings Robust to Including Seniority, Majority Party, and Chair Variables

	(A3.1) Quality Challengers All Races	(A3.2) Quality Challengers All Races	(A3.3) Quality Challengers Opposed	(A3.4) Viable Challengers Opposed
LES Relative to Expectations	-0.187**		-0.133*	-0.184**
	(0.073)		(0.066)	(0.063)
Meets Expectations		-0.350**		
		(0.115)		
Exceeds Expectations		-0.316*		
		(0.140)		
Seniority	0.039**	0.040**	0.031*	0.042**
	(0.014)	(0.014)	(0.014)	(0.013)
Majority Party	0.016	0.025	0.021	0.003
	(0.133)	(0.133)	(0.127)	(0.123)
Chair	0.056	0.067	-0.204	-0.302*
	(0.149)	(0.149)	(0.144)	(0.141)
Lagged Primary Vote	-1.563**	-1.587**	-0.552*	-1.052**
	(0.259)	(0.259)	(0.250)	(0.231)
District Partisanship	0.036**	0.036**	0.022**	0.022**
	(0.004)	(0.004)	(0.004)	(0.004)
Ideologue	-0.629**	-0.631**	-0.424**	-0.149
	(0.165)	(0.166)	(0.166)	(0.149)
Female	-0.062	-0.049	-0.108	-0.265*
	(0.178)	(0.178)	(0.161)	(0.159)
Power Committee	-0.334**	-0.333**	-0.312**	-0.549**
	(0.129)	(0.129)	(0.121)	(0.140)
Party Leader	-0.447	-0.448	-0.616*	-1.752**
	(0.290)	(0.290)	(0.304)	(0.524)
State Legislative Term Limits	-0.016	-0.012	-0.138	-0.147
	(0.142)	(0.142)	(0.137)	(0.135)
Constant	-0.339	-0.479	-0.702*	-0.057
	(0.395)	(0.370)	(0.397)	(0.252)
Number of Observations	7,456	7,456	2,331	2,331
Log likelihood	-1,758.19	-1,756.45	-1,293.58	-1,176.95
LR Chi-squared	403.80	406.01	151.25	213.01

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from zero-inflated Poisson regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. For Models A3.1-A3.3, the dependent variable is the number of own-party quality challengers in the incumbent's primary. For Model A3.4, the dependent variable is the number of own-party challengers who raised at least 15 percent of preprimary receipts. The data in Models A3.1 and A3.2 are drawn from all races. The data in Models A3.3 and A3.4 exclude unopposed races. The results show support for the *Legislative Effectiveness and Quality Challenger Hypothesis* to be robust to including *Seniority, Majority Party,* and *Chair* variables.

Table A.4: Challenger Findings With Further Exploration of Seniority Effects

	(A4.1) Quality Challengers All Races	(A4.2) Quality Challengers All Races	(A4.3) Quality Challengers Opposed	(A4.4) Quality Challengers Opposed
LES Relative to Expectations	-0.185**	-0.187**	-0.142*	-0.132*
	(0.074)	(0.073)	(0.066)	(0.067)
Seniority	0.049	0.039*	-0.016	0.029*
	(0.043)	(0.017)	(0.042)	(0.014)
Seniority Squared	-0.001		0.002	
	(0.002)		(0.002)	
State Legislative Term Limits		-0.004		-0.185
		(0.199)		(0.201)
State Legislative Term Limits × Seniority		-0.002		0.007
		(0.024)		(0.027)
Majority Party	0.023	0.017	-0.013	0.020
	(0.135)	(0.133)	(0.131)	(0.127)
Chair	0.042	0.055	-0.139	-0.199
	(0.155)	(0.151)	(0.150)	(0.142)
Lagged Primary Vote	-1.587**	-1.563**	-0.456	-0.554*
	(0.297)	(0.259)	(0.283)	(0.250)
District Partisanship	0.036**	0.036**	0.022**	0.022**
	(0.004)	(0.004)	(0.004)	(0.004)
Ideologue	-0.623**	-0.628**	-0.446**	-0.425**
	(0.166)	(0.166)	(0.165)	(0.166)
Female	-0.065	-0.062	-0.097	-0.106
	(0.178)	(0.178)	(0.161)	(0.160)
Power Committee	-0.340**	-0.335**	-0.286**	-0.310**
	(0.129)	(0.129)	(0.120)	(0.120)
Party Leader	-0.457	-0.448	-0.569*	-0.618*
	(0.292)	(0.290)	(0.302)	(0.305)
Constant	-0.351	-0.343	-0.631	-0.690*
	(0.398)	(0.397)	(0.396)	(0.397)
Number of Observations	7,456	7,456	2,331	2,331
Log likelihood	-1,758.13	-1,758.18	-1,292.40	-1,293.52
LR Chi-squared	403.51	402.87	157.78	159.26

Note: *p<0.05, **p<0.01, one-tailed tests. Model structures mimic those of Models A3.1 and A3.3, while further exploring the positive *Seniority* effect from these earlier models. The results show no link to quality challengers based on *Seniority Squared* nor on an interaction with state term limits. Rather, the positive coefficient may simply have arisen due to growing impatience among quality challengers over waiting for senior members of Congress to retire.

Table A.5: Challenger Findings Robust to Negative Binomial Model Structure

	(A5.1) Quality Challengers All Races	(A5.2) Quality Challengers All Races	(A5.3) Quality Challengers Opposed	(A5.4) Viable Challengers Opposed
LES Relative to Expectations	-0.170**		-0.132*	-0.189**
	(0.073)		(0.065)	(0.064)
Meets Expectations		-0.296**		
		(0.118)		
Exceeds Expectations		-0.298*		
		(0.141)		
Lagged Primary Vote	-1.406**	-1.412**	-0.451*	-0.931**
	(0.224)	(0.223)	(0.235)	(0.214)
District Partisanship	0.039**	0.039**	0.023**	0.024**
	(0.004)	(0.004)	(0.004)	(0.003)
Ideologue	-0.800**	-0.804**	-0.503**	-0.238*
	(0.155)	(0.155)	(0.160)	(0.142)
Female	-0.101	-0.092	-0.115	-0.278*
	(0.180)	(0.180)	(0.160)	(0.155)
Power Committee	-0.251*	-0.247*	-0.244*	-0.450**
	(0.127)	(0.127)	(0.119)	(0.148)
Party Leader	-0.392	-0.392	-0.513*	-1.597**
	(0.291)	(0.290)	(0.294)	(0.507)
State Legislative Term Limits	-0.031	-0.030	-0.149	-0.142
	(0.137)	(0.138)	(0.134)	(0.133)
Constant	-1.352**	-1.488**	-0.979**	-0.068
	(0.328)	(0.307)	(0.343)	(0.231)
Number of Observations	7,456	7,456	2,331	2,331
Log likelihood	-1,756.52	-1,755.56	-1,294.35	-1,184.52
LR Chi-squared	315.31	316.58	139.78	194.26

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from negative binomial regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. For Models A5.1-A5.3, the dependent variable is the number of own-party quality challengers in the incumbent's primary. For Model A5.4, the dependent variable is the number of own-party challengers who raised at least 15 percent of preprimary receipts. The data in Models A5.1 and A5.2 are drawn from all races. The data in Models A5.3 and A5.4 exclude unopposed races. The results show additional support for the *Legislative Effectiveness and Quality Challenger Hypothesis* under this alternative modeling structure.

Table A.6: Challenger Findings Robust to Time-Series Cross-Sectional Model Structure

	(A6.1) Quality Challengers All Races	(A6.2) Quality Challengers All Races	(A6.3) Quality Challengers Opposed	(A6.4) Viable Challengers Opposed
LES Relative to Expectations	-0.011*		-0.031*	-0.042**
	(0.005)		(0.014)	(0.013)
Meets Expectations		-0.018*		
		(0.009)		
Exceeds Expectations		-0.021*		
		(0.010)		
Lagged Primary Vote	-0.057*	-0.057*	-0.100	-0.167**
	(0.025)	(0.025)	(0.063)	(0.057)
District Partisanship	0.003**	0.003**	0.006**	0.006**
	(0.001)	(0.001)	(0.001)	(0.001)
Ideologue	-0.073**	-0.073**	-0.124**	-0.069*
	(0.018)	(0.018)	(0.042)	(0.034)
Female	-0.006	-0.005	-0.032	-0.070**
	(0.016)	(0.016)	(0.035)	(0.029)
Power Committee	-0.012	-0.011	-0.044*	-0.082**
	(0.009)	(0.009)	(0.023)	(0.022)
Party Leader	-0.028*	-0.028*	-0.079*	-0.121**
	(0.016)	(0.016)	(0.039)	(0.027)
State Legislative Term Limits	-0.003	-0.003	-0.035	-0.022
	(0.012)	(0.012)	(0.029)	(0.025)
Constant	0.140**	0.130**	0.355**	0.544**
	(0.034)	(0.033)	(0.089)	(0.072)
Number of Observations	7,456	7,456	2,331	2,331
Wald Chi-squared	117.57	117.93	95.12	122.35

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from cross-sectional time-series linear regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. For Models A6.1-A6.3, the dependent variable is the number of own-party quality challengers in the incumbent's primary. For Model A6.4, the dependent variable is the number of own-party challengers who raised at least 15 percent of receipts. The data in Models A6.1 and A6.2 are drawn from all races. The data in Models A6.3 and A6.4 exclude unopposed races. The results show additional support for the *Legislative Effectiveness and Quality Challenger Hypothesis* under this alternative modeling structure.

Table A.7: Challenger Findings Robust Across Eras

	(A7.1) Quality Challengers 1980-1994	(A7.2) Quality Challengers 1996-2016
LES Relative to Expectations	-0.192	-0.191*
	(0.118)	(0.091)
Lagged Primary Vote	-1.520**	-1.190**
	(0.319)	(0.296)
District Partisanship	0.038**	0.040**
	(0.006)	(0.006)
Ideologue	-0.705**	-0.759**
	(0.222)	(0.223)
Female	-0.210	-0.119
	(0.400)	(0.200)
Power Committee	0.006	-0.475**
	(0.191)	(0.171)
Party Leader	0.347	-0.974*
	(0.311)	(0.454)
State Legislative Term Limits	-0.228	0.067
	(0.275)	(0.159)
Constant	-0.396	-0.165
	(0.492)	(0.492)
Number of Observations	3,123	4,333
Log likelihood	-708.27	-1,050.10
LR Chi-squared	214.57	171.11

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from zero-inflated Poisson regressions from 1980-1994 (Model A7.1) and 1996-2016 (Model A7.2), with year fixed effects. Standard errors are clustered by member. The dependent variable is the number of own-party quality challengers in the incumbent's primary. The results show support for the *Legislative Effectiveness and Quality Challenger Hypothesis* to be robust across eras, from those characterized by continual Democratic control of the House to the current era of close partisan divisions, ideological polarization, and more highly contested primaries.

Table A.8: Primary Win Findings With Proxies for Effectiveness, No Effectiveness Measures

	(A8.1) Win Primary All Races	(A8.2) Win Primary Opposed
Seniority	0.001	0.003
	(0.033)	(0.033)
Majority Party	0.192	0.206
	(0.363)	(0.365)
Chair	0.012	0.141
	(0.429)	(0.419)
Faced Quality Challenger	-3.192**	-2.051**
	(0.316)	(0.286)
Lagged Primary Vote	1.437*	1.070*
	(0.659)	(0.646)
District Partisanship	-0.016	-0.010
	(0.011)	(0.011)
Ideologue	0.896**	0.823**
	(0.352)	(0.352)
Female	0.144	0.193
	(0.420)	(0.413)
Power Committee	0.461	0.462
	(0.354)	(0.350)
Party Leader	-0.067	0.073
	(0.744)	(0.743)
State Legislative Term Limits	-0.194	-0.080
	(0.314)	(0.318)
Constant	3.653**	2.615**
	(0.789)	(0.772)
Number of Observations	7,456	2,331
Log likelihood	-288.77	-260.37
LR Chi-squared	333.60	148.52

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from logistic regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. The dependent variable captures whether the incumbent won the primary. The data in Model A8.1 are drawn from all races, and the data in Model A8.2 exclude unopposed races. Results show that, among seniority, majority party status, and committee chairs—proxies that voters might use as substitutes for lawmaking effectiveness—none has any significant effect on primary election victories. These findings suggest that voters weigh lawmaking effectiveness rather than these other considerations when casting their primary ballots.

Table A.9: Primary Win Findings With Proxies for Effectiveness, With Effectiveness Measures

	(A9.1) Win Primary All Races	(A9.2) Win Primary All Races	(A9.3) Win Primary All Races	(A9.4) Win Primary Opposed
LES Relative to Expectations	0.364*			0.340*
	(0.198)			(0.195)
Meets Expectations		0.549*		
		(0.303)		
Exceeds Expectations		0.626		
		(0.390)		
Legislative Effectiveness Score			0.483**	
			(0.195)	
Seniority	-0.001	-0.002	-0.036	0.002
	(0.033)	(0.033)	(0.034)	(0.033)
Majority Party	0.245	0.230	0.023	0.264
	(0.369)	(0.372)	(0.372)	(0.369)
Chair	-0.057	-0.070	-0.350	0.067
	(0.436)	(0.435)	(0.441)	(0.426)
Faced Quality Challenger	-3.187**	-3.186**	-3.177**	-2.050**
	(0.314)	(0.312)	(0.318)	(0.285)
Lagged Primary Vote	1.451*	1.473*	1.431*	1.102*
	(0.657)	(0.656)	(0.665)	(0.646)
District Partisanship	-0.015	-0.015	-0.014	-0.009
	(0.010)	(0.010)	(0.011)	(0.010)
Ideologue	0.890**	0.896**	0.833**	0.821*
	(0.356)	(0.356)	(0.356)	(0.356)
Female	0.161	0.133	0.168	0.202
	(0.431)	(0.438)	(0.425)	(0.423)
Power Committee	0.511	0.514	0.587	0.491
	(0.353)	(0.355)	(0.364)	(0.348)
Party Leader	-0.081	-0.061	-0.032	0.050
	(0.739)	(0.740)	(0.750)	(0.737)
State Legislative Term Limits	-0.202	-0.201	-0.232	-0.093
	(0.315)	(0.316)	(0.317)	(0.318)
Constant	2.999**	3.331**	3.594**	1.980*
	(0.868)	(0.807)	(0.803)	(0.861)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-286.62	-286.29	-283.49	-258.48
LR Chi-squared	331.22	336.64	334.75	149.43

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from logistic regressions from 1980-2016, with year fixed effects. Standard errors are clustered by member. The dependent variable captures whether the incumbent won the primary. The data in Models A9.1-A9.3 are drawn from all races, and the data in Model A9.4 exclude unopposed races. The results show support for the *Legislative Effectiveness and Electoral Success Hypothesis* to be robust to including *Seniority*, *Majority Party*, and *Chair* variables.

Table A.10: Primary Win Findings Robust to Rare Events Logistic Regression Model Structure

	(A10.1) Win Primary All Races	(A10.2) Win Primary All Races	(A10.3) Win Primary All Races	(A10.4) Win Primary Opposed
LES Relative to Expectations	0.342*			0.323*
	(0.175)			(0.174)
Meets Expectations		0.529*		
		(0.283)		
Exceeds Expectations		0.562		
		(0.353)		
Legislative Effectiveness Score			0.318*	
			(0.157)	
Faced Quality Challenger	-3.120**	-3.118**	-3.144**	-1.994**
	(0.268)	(0.268)	(0.269)	(0.263)
Lagged Primary Vote	1.346**	1.355**	1.164*	1.059*
	(0.525)	(0.523)	(0.528)	(0.534)
District Partisanship	-0.014	-0.014	-0.015	-0.008
	(0.010)	(0.010)	(0.010)	(0.010)
Ideologue	0.841**	0.854**	0.895**	0.756*
	(0.347)	(0.346)	(0.342)	(0.349)
Female	0.089	0.064	0.139	0.119
	(0.393)	(0.394)	(0.394)	(0.389)
Power Committee	0.484	0.483	0.466	0.467
	(0.343)	(0.343)	(0.344)	(0.340)
Party Leader	-0.281	-0.258	-0.245	-0.148
	(0.677)	(0.679)	(0.680)	(0.674)
State Legislative Term Limits	-0.211	-0.210	-0.230	-0.106
	(0.303)	(0.303)	(0.305)	(0.305)
Constant	3.132**	3.426**	3.560**	2.152**
	(0.688)	(0.637)	(0.631)	(0.691)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-263.15	-262.13	-260.88	-235.35
LR Chi-squared	213.28	212.84	216.12	98.50

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from penalized maximum likelihood regressions accounting for sparse and rare events (firthlogit) from 1980-2016, with year fixed effects. Standard errors are in parentheses. The dependent variable captures whether the incumbent won the primary. The data in Models A10.1-A10.3 are drawn from all races, and the data in Model A10.4 exclude unopposed races. The results show additional support for the *Legislative Effectiveness and Electoral Success Hypothesis* under this alternative modeling structure.

Table A.11: Primary Win Findings Robust to Time-Series Cross-Sectional Logit Model Structure

	(A11.1) Win Primary All Races	(A11.2) Win Primary All Races	(A11.3) Win Primary All Races	(A11.4) Win Primary Opposed
LES Relative to Expectations	0.368*			0.360*
	(0.197)			(0.204)
Meets Expectations		0.589*		
		(0.325)		
Exceeds Expectations		0.623		
		(0.400)		
Legislative Effectiveness Score			0.375*	
			(0.170)	
Faced Quality Challenger	-3.436**	-3.445**	-3.436**	-2.301**
	(0.369)	(0.372)	(0.364)	(0.379)
Lagged Primary Vote	1.589**	1.598**	1.389*	1.307*
	(0.610)	(0.609)	(0.610)	(0.653)
District Partisanship	-0.019	-0.019	-0.020*	-0.012
	(0.012)	(0.012)	(0.012)	(0.012)
Ideologue	1.030**	1.044**	1.081**	0.970*
	(0.423)	(0.422)	(0.415)	(0.461)
Female	0.265	0.239	0.325	0.317
	(0.494)	(0.495)	(0.489)	(0.513)
Power Committee	0.555	0.551	0.532	0.557
	(0.401)	(0.402)	(0.397)	(0.414)
Party Leader	-0.030	-0.003	-0.010	0.114
	(0.837)	(0.841)	(0.831)	(0.857)
State Legislative Term Limits	-0.175	-0.168	-0.200	-0.021
	(0.356)	(0.356)	(0.354)	(0.374)
Constant	3.717**	4.042**	4.111**	2.737**
	(0.886)	(0.845)	(0.821)	(0.927)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-285.92	-285.54	-283.86	-258.20
LR Chi-squared	100.74	100.03	104.19	46.35

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from cross-sectional time-series logistic regressions from 1980-2016, with year fixed effects. Standard errors are in parentheses. The dependent variable captures whether the incumbent won the primary. The data in Models A11.1-A11.3 are drawn from all races, and the data in Model A11.4 exclude unopposed races. The results show additional support for the *Legislative Effectiveness and Electoral Success Hypothesis* under this alternative modeling structure.

Table A.12: Primary Win Results Across Eras

	(A12.1) Win Primary 1980-1994	(A12.2) Win Primary 1996-2016
LES Relative to Expectations	0.259	0.495*
	(0.273)	(0.281)
Faced Quality Challenger	-2.928**	-3.440**
	(0.439)	(0.423)
Lagged Primary Vote	0.784	1.975**
	(0.950)	(0.755)
District Partisanship	-0.020	-0.010
	(0.014)	(0.015)
Ideologue	0.567	1.386**
	(0.501)	(0.532)
Female	0.083	0.148
	(0.768)	(0.555)
Power Committee	0.185	0.948*
	(0.433)	(0.542)
Party Leader	0.162	-0.434
	(0.932)	(1.090)
State Legislative Term Limits	-0.380	-0.158
	(0.521)	(0.402)
Constant	3.878**	2.971**
	(1.010)	(1.031)
Number of Observations	3,123	4,333
Log likelihood	-137.82	-146.19
LR Chi-squared	175.30	184.02

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from logistic regressions from 1980-1994 (Model A12.1) and 1996-2016 (Model A12.2), with year fixed effects. Standard errors are clustered by member. The dependent variable captures whether the incumbent won the primary. Results show a larger (and statistically significant) effect of *LES Relative to Expectations* on primary election victory in recent decades.

Table A.13: Declining Impact of LES in Crowded Primaries Robust to Rare Events Logistic Regression Model Structure

	(A13.1) Win Primary All Races	(A13.2) Win Primary All Races	(A13.3) Win Primary All Races	(A13.4) Win Primary Opposed
LES Relative to Expectations	0.637**			0.642**
	(0.244)			(0.275)
Number of Challengers	-0.121	-0.442**	-0.496**	0.013
	(0.163)	(0.086)	(0.076)	(0.149)
LES Relative to Expectations	-0.304**			-0.226*
× Number of Challengers	(0.101)			(0.111)
Meets Expectations		0.641*		
		(0.362)		
Exceeds Expectations		1.304**		
		(0.551)		
Meets Expectations		-0.218		
× Number of Challengers		(0.146)		
Exceeds Expectations		-0.684**		
× Number of Challengers		(0.229)		
Legislative Effectiveness Score			0.598**	
			(0.251)	
Legislative Effectiveness Score			-0.147**	
× Number of Challengers			(0.060)	
Lagged Primary Vote	1.569**	1.614**	1.436**	1.271**
	(0.546)	(0.545)	(0.545)	(0.546)
District Partisanship	-0.018*	-0.018*	-0.019*	-0.011
	(0.010)	(0.010)	(0.010)	(0.010)
Ideologue	1.058**	1.073**	1.164**	0.889**
	(0.342)	(0.342)	(0.335)	(0.345)
Female	-0.086	-0.127	-0.010	0.021
	(0.394)	(0.392)	(0.395)	(0.387)
Power Committee	0.507	0.505	0.455	0.487
	(0.345)	(0.344)	(0.343)	(0.337)
Party Leader	-0.248	-0.250	-0.225	-0.062
	(0.659)	(0.660)	(0.660)	(0.661)
State Legislative Term Limits	0.051	0.052	-0.028	0.058
	(0.307)	(0.306)	(0.307)	(0.301)
Constant	2.524**	3.104**	3.244**	1.485*
	(0.743)	(0.661)	(0.657)	(0.737)
Number of Observations	7,456	7,456	7,456	2,331
Log likelihood	-286.73	-284.44	-285.44	-250.83
LR Chi-squared	154.17	157.22	151.89	69.84

Note: *p<0.05, **p<0.01, one-tailed tests. Results are from penalized maximum likelihood regressions accounting for sparse and rare events (firthlogit) from 1980-2016, with year fixed effects. Standard errors are in parentheses. The dependent variable captures whether the incumbent won the primary. The data in Models A13.1-13.3 are drawn from all races, and the data in Model A13.4 exclude unopposed races. The results show additional support for the *Candidate Competition and Legislative Effectiveness Hypothesis* under this alternative modeling structure.

Perceptions of Quality Potential Candidates

We also examined data from the 1998 wave of the Candidate Emergence Study (Maestas et al. 2006), using survey responses from state legislators and named potential candidates who held previous elected office. This sample reflects the traditional definition of quality candidates, consistent with that used in our analyses. Because our interest is in incumbents' ability to ward off primary challenges, we exclude potential candidates in districts where an incumbent was not running in 1998, and potential candidates in districts where the incumbent was in the opposite party. There are approximately 600 potential candidates with previous political experience in the sample, but the number decreases to approximately 550 when additional covariates are included.

These data capture the perceptions of potential candidates, which allows us to engage with the relationship between lawmaking effectiveness and electoral security from a different, but complementary, angle. We examined a host of variables in the CES data that map onto the argument detailed above. In particular, we looked at potential candidates' perceptions of the incumbent's support from voters in his or her own party, the incumbent's name recognition in the district, the likelihood that the incumbent will face a strong primary challenger in 1998, and the likelihood that the incumbent will win the primary election in 1998.[28] We use potential candidates' perceptions of the incumbent's legislative accomplishments to capture lawmaking effectiveness. One caveat to note is that we are unable to assess the accuracy of these perceptions, although the sample consists of current and former officeholders, whom we expect to be well-informed. The incumbent's perceived lawmaking effectiveness is on a 7-point scale, with higher values corresponding to stronger legislative accomplishments. We also divided lawmaking effectiveness into

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[28] All election-related questions are with respect to 1998, as the odds of running in the future are expected to be associated with an incumbent's lawmaking effectiveness at that time.

those who perceive the incumbent's accomplishments as somewhat strong or higher (5 and above), and fair or below.

We first looked at differences in how these experienced potential candidates rate high- and low-performing incumbents' support from same-party voters, their likelihood of facing a strong challenger in the primary, and their likelihood of winning the primary. All values are on a 7-point scale. Consistent with our argument above, potential candidates perceive incumbents with stronger legislative accomplishments to have higher levels of support from voters in their own party (6.4 vs. 5.5; $p < 0.01$), and higher levels of name recognition than incumbents with weaker records (6.5 vs. 5.8; $p < 0.01$). Similarly, they perceive incumbents with stronger legislative accomplishments to be less likely to face a strong primary challenger in 1998 (1.8 vs. 2.3; $p < 0.01$) and more likely to win the primary election in 1998 (6.9 vs. 6.7; $p < 0.01$).

We also examined the potential candidate's own perceived likelihood of winning the primary in 1998, and her likelihood of running in 1998. Our main variable of interest is the perceived legislative accomplishments of the incumbent. We include a variety of additional variables, including favorable district partisanship, whether the potential candidate was contacted by community leaders and interest groups, the potential candidate's ability to raise money, as well as her openness to taking risks, gender, age, and party. The results in Table A.14 are consistent with the patterns in the CES data highlighted above. Potential candidates who perceive the incumbent to have strong legislative accomplishments say they are less likely to win the primary if they ran, and they are less likely to run for the U.S. House than potential candidates who view the incumbent's legislative accomplishments as less strong. These perceptions from quality potential candidates complement the data from actual elections in the main paper, in line with our main hypotheses.

Table A.14: Experienced Potential Candidates Report Lower Likelihood of Winning the Primary and Running for the House When Incumbent Has Strong Legislative Accomplishments

	(A14.1) Likelihood of Winning	(A14.2) Likelihood of Winning	(A14.3) Likelihood of Running	(A14.4) Likelihood of Running
Incumbent's Legislative	-0.116**	-0.160**	-0.045*	-0.048*
Accomplishments	(0.044)	(0.047)	(0.026)	(0.028)
Favorable Partisanship		-0.303*		0.057
		(0.164)		(0.097)
Contacted by Local Leaders		0.414*		-0.042
		(0.187)		(0.116)
Contacted by Interest Groups		0.031		0.084
		(0.239)		(0.149)
Woman		-0.090		-0.147
		(0.173)		(0.104)
Age		0.170**		0.098**
		(0.059)		(0.035)
Risk Taking		0.105		-0.134
		(0.213)		(0.128)
Ability to Raise Money		0.201**		0.015
		(0.053)		(0.032)
Democrat		-0.029		-0.062
		(0.143)		(0.086)
Constant	2.689**	1.393**	1.587**	1.196**
	(0.226)	(0.404)	(0.134)	(0.242)
Number of Observations	613	548	628	555

Note: *p<0.05, **p<0.01, one-tailed tests. Data are from the 1998 wave of the Candidate Emergence Study (Maestas et al. 2006). Results are from OLS regressions. Standard errors are in parentheses. The dependent variable is the potential candidate's perceived likelihood of winning the primary in 1998 if she ran and her likelihood of running for the House in 1998. These analyses exclude potential candidates in districts where an incumbent was not running in 1998 and those where the incumbent is in the opposite party. The results provide additional support for our broader argument, from the perspective of quality potential candidates.