Effective Lawmaking Behind the Scenes*

Mary Kroeger, University of North Carolina-Chapel Hill
Erinn Lauterbach, Villanova University
Kelsey Shoub, University of Massachusetts-Amherst
Craig Volden, University of Virginia
Alan E. Wiseman, Vanderbilt University

May 2024

Abstract

Behind-the-scenes lawmaking has become much more common in the U.S. Congress in recent years, with numerous bills embedded in must-pass legislation. Building on the work of Casas, Denny, and Wilkerson (2020), we offer a methodology to identify all bills that are substantially embedded in all laws in both the House and Senate over the past 30 years. We then create a revised version of Legislative Effectiveness Scores (Volden and Wiseman 2014) to examine whether such unorthodox lawmaking changes the nature of the individual characteristics, institutional positions, and behaviors associated with effective lawmaking. We find that today more bills become law through embedding in other measures than become law on a stand-alone basis, and that such patterns vary significantly across policy areas. However, we establish that the same individuals who are effective in moving forward their own legislation are effective behind-the-scenes, suggesting the robustness of prior findings on effective lawmaking.

---

* Prepared for presentation at the 2024 Center for Effective Lawmaking Research Conference, Charlottesville. Mary Kroeger is an Assistant Professor of Political Science at the University of North Carolina, Chapel Hill (mkroeger@email.unc.edu). Erinn Lauterbach is an Assistant Professor of Political Science at Villanova University (erinn.lauterbach@villanova.edu). Kelsey Shoub is an Assistant Professor of Political Science at the University of Massachusetts, Amherst (kshoub@umass.edu). Craig Volden is professor of public policy and politics at the University of Virginia (volden@virginia.edu). Alan E. Wiseman is Chair of the Department of Political Science at Vanderbilt University, where he is the Cornelius Vanderbilt Professor of Political Economy and Professor of Political Science and Law (alan.wiseman@vanderbilt.edu). Volden and Wiseman thank the U.S. Democracy Program of the Hewlett Foundation for continued support of the Center for Effective Lawmaking (www.thelawmakers.org).

Center for Effective Lawmaking Working Paper 2024-03

Effective Lawmaking Behind the Scenes

Across every two-year Congress, thousands of bills, over a wide range of policy areas, are introduced into the U.S. House of Representatives and the U.S. Senate. In the 117th Congress (2021-2023), for example, there were almost 9,700 public bills (H.R.) introduced into the House, and almost 5,400 public bills (S.) introduced into the Senate. Of these nearly 15,000 public bills, only a small fraction of them – 198 originating in the House and 160 originating in the Senate – were ultimately signed into law. Given this tiny success rate of 2-3%, it is tempting to argue that it's impossible to get anything through Congress, that Congress is broken (Mann and Ornstein 2016), and that random chance plays an outsized role in whether one bill sponsor will be more successful at advancing her agenda than another.

Of course, observers of Congress, whether they be scholars, journalists, or interested laypersons, have been quick to note how the lawmaking process is far from random – some members of the House and Senate are unambiguously more effective lawmakers than others. But what does it mean to be an "effective" lawmaker? The most conventional textbook treatment of the legislative process, lovingly captured in School House Rock's "How a Bill Becomes a Law," describes a sequence of events consisting of a member of Congress introducing a bill, seeking to advance that bill through the maze of committee deliberations and floor votes, and finally avoiding a presidential veto. Given this presentation of the lawmaking process, an effective lawmaker would be a member of the House or Senate who is successful at advancing her stand-alone sponsored bills over each of these potential hurdles. Indeed, one of the most widely accepted measures of lawmaking effectiveness, Volden and Wiseman's (2014, 2018) Legislative Effectiveness Score (LES), accounts for the sequential nature of the lawmaking process in each of the components that contribute to the LES metric.

Yet, this textbook approach to lawmaking – and thus to identifying effective lawmakers based on this assembly-line sequence – has recently been brought into question. Sinclair (2016) establishes that lawmaking today often follows a more "unorthodox" process. Curry (2015) documents the formulation of policies behind closed doors, leaving many legislators in the dark until they are forced to vote on a complex of hodgepodge bill language they have not had a chance to read. Casas, Denny, and Wilkerson (2020) show that such processes lead to bills "hitchhiking" on must-pass legislation, with Reynolds and Hanson (2023) capturing a similar pattern of bills riding along on omnibus spending packages.

A Representative or Senator who successfully appends their sponsored bills to legislative vehicles that ultimately become law is displaying a degree of lawmaking effectiveness. Indeed, Representatives and Senators are often quick to claim credit for having sponsored bills with language that ultimately became law, even if they did not directly sponsor the bill that made its way to the president's desk. To the extent that these sorts of activities are relatively common in Congress, they would ideally be accounted for, in some capacity, within any measure of lawmaking effectiveness. Metrics that do not account for behind-the-scenes lawmaking may not accurately capture who the most effective lawmakers truly are.

In this paper, we draw on data from the 103rd-117th Congresses (1993-2023) to advance a new methodology for measuring lawmaking effectiveness, which allows us to more fully capture legislative accomplishments throughout the lawmaking process. Specifically, we build upon the Casas, Denny, and Wilkerson (2020) approach to identify textual similarity between all introduced bills and all laws within each Congress. For each bill that is significantly embedded in another legislator's sponsored law, we then add lawmaking credit into the well-established Volden and Wiseman (2014, 2018) measurement model for Legislative Effectiveness Scores. In

doing so, we are able to give Representatives and Senators credit for "behind the scenes" lawmaking: that is, legislative negotiations and compromises that happen outside of the public view, which contributed to them seeing the content of their sponsored bills ultimately become law. Hence, we can assess the extent to which some legislators who might lack institutional positions or status (e.g., members of the minority party, less senior legislators), and/or legislators from historically marginalized groups (e.g., women, African Americans) might be more or less successful in their lawmaking efforts, by working behind the scenes in this manner.[1]

Scholarship to date has led to a number of insights into the traits and habits of highly effective lawmakers based on traditional textbook lawmaking practices (with their own bills advancing to become stand-alone laws). Effective lawmakers tend to hold positions institutional influence as committee chairs (Berry and Fowler 2018) or through majority-party status more generally (Volden and Wiseman 2014, chap. 3). They hire experienced staff (Crosson et al. 2020), rely on network connections (Montgomery and Nyhan 2017, Battaglini et al. 2020), build legislative support when in the minority party (Volden, Wiseman, and Wittmer 2013), seek bipartisan cosponsors (Harbridge-Yong et al. 2023), and work with well-funded interest groups (Heberlig and Larson 2022).

[1] Eatough and Preece (Forthcoming) offer an alternative approach to capturing different paths of lawmaking productivity in a unified metric. Specifically, their Lawmaking Productivity Metric (LawProM) brings together five equally weighted bins of legislative activity – bill sponsorships, original cosponsorships, later cosponsorships, amendment offerings, and bill sections embedded in others' laws. Scholars will likely debate the value of including each of these components – for example, some may view cosponsorship as evidence of credit-seeking more than effectiveness or may wish to give less weight to amendment activity. For our part, we believe that cosponsorship does not offer strong evidence of lawmaking effectiveness, and also that measures of effectiveness should take into consideration intermediate lawmaking steps such as action in committee, as well as accounting for differences in bill importance, which are absent in the LawProM approach. As such, we build upon the Legislative Effectiveness Scores as discussed below. Although adding amendment activity has been shown to have little effect on Legislative Effectiveness Scores (see Volden and Wiseman 2014, pp. 51-54), further explorations of amendments over time may offer fruitful new insights to this field of study.

We argue that the same traits and habits that make lawmakers effective through traditional processes are also helpful for lawmaking behind the scenes. Thus we hypothesize that effective lawmakers, as identified by Volden and Wiseman's Legislative Effectiveness Scores will be the ones who are most likely to *also* advance their proposals by embedding them in others' laws. As a result, although studying behind-the-scenes lawmaking is important in its own right, it will likely not significantly change our understandings of what lawmakers must do to become more effective.

Our findings demonstrate that embedding bills in other bills that ultimately become law has been a fairly standard practice over the past 30 years, and that this practice has become increasingly common over the past 10 years. Indeed, in recent Congresses, the number of embedded bills that become law is actually greater than the number of stand-alone laws. We also find that some policy issues are much more likely to advance through behind-the-scenes lawmaking than others, and that the policy issues of vehicles for embedded bills have increasingly focused on matters dealing with budget and defense policy in recent Congresses.

While lawmaking by advancing embedded bills has been increasingly common over time, our analysis also demonstrates that those factors that contribute to effective lawmaking as measured as Volden and Wiseman's Legislative Effectiveness Scores are remarkably similar to the determinants of effective lawmaking, as measured by our amended version of the LES that gives legislators credit for their embedded bills. Moreover, we also find that the correlation between these two metrics ranges from 0.89 to 0.98 in the House, and 0.90 to 0.97 in the Senate. In other words, those Representatives and Senators who are most successful at seeing their sponsored bills embedded in other measures are also those same legislators who are the most successful at seeing their stand-alone bills advance through the lawmaking process.

Taken together, this analysis provides us with important insights about the vehicles that are chosen to facilitate behind the scenes lawmaking in Congress, as well as which legislators engage with this approach to help to facilitate their lawmaking effectiveness.

Measuring Effective Lawmaking in Congress

Scholars have embraced a wide range of approaches to assess the lawmaking effectiveness of members of Congress. Several of these approaches (e.g., Anderson, Box-Steffensmeier, and Sinclair-Chapman 2003; Cox and Terry 2008) have built on the foundational work of Matthews (1960) and Frantzich (1979) who measured legislative effectiveness by counting the number (or hit-rate) of sponsored bills that passed their parent chambers of origin or became law. Although such methods are helpful in identifying how successful members of Congress might be in seeing their bills become law, they fail to account for the ways in which effort and lawmaking success is a cumulative process, whereby legislators can be influential in Congress, by seeing their bills advance through the intermediate stages in the legislative process, even if they fail to ultimately pass their chambers or become law.

Volden and Wiseman (2014, 2018) advance a Legislative Effectiveness Score (LES) to engage with some of these shortcomings with previous measures. More specifically, for each member of the House (or Senate) in each two-year Congress, the LES measures how many public bills (H.R. or S.) were introduced, how many of those bills received any sort of "Action in Committee" (AIC), how many of those bills received any "Action beyond Committee" (ABC), how many of those bills passed their home chamber (PASS), and how many of those bills ultimately became law (LAW). Bills that are the focus of significant media attention, as captured by whether they were covered in the *Congressional Quarterly Almanac* or related publications are deemed to be "substantive and significant," receiving greater weight in the metric.

Alternatively, those bills that were clearly commemorative in nature receive less weight; and all other public bills in the sample are denoted as "substantive" bills, and receive a weight in between commemorative and substantive and significant bills.

Drawing on these fifteen bill-level indicators (five steps in the lawmaking process, three categories of bill significance), Volden and Wiseman calculate the Legislative Effectiveness Score of Representative (or Senator) *i* in Congress *t* as follows:

$$LES_{it} = \left[\begin{array}{c} \frac{\alpha BILL_{it}^{C} + \beta BILL_{it}^{S} + \gamma BILL_{it}^{SS}}{\alpha \sum_{j=1}^{N} BILL_{it}^{C} + \beta \sum_{j=1}^{N} BILL_{it}^{S} + \gamma \sum_{j=1}^{N} BILL_{it}^{SS}} \\ + \frac{\alpha AIC_{it}^{C} + \beta AIC_{it}^{S} + \gamma AIC_{it}^{SS}}{\alpha \sum_{j=1}^{N} AIC_{it}^{C} + \beta \sum_{j=1}^{N} AIC_{it}^{S} + \gamma \sum_{j=1}^{N} AIC_{it}^{SS}} \\ + \frac{\alpha ABC_{it}^{C} + \beta ABC_{it}^{S} + \gamma ABC_{it}^{SS}}{\alpha \sum_{j=1}^{N} ABC_{it}^{C} + \beta \sum_{j=1}^{N} ABC_{it}^{S} + \gamma \sum_{j=1}^{N} ABC_{it}^{SS}} \\ + \frac{\alpha PASS_{it}^{C} + \beta PASS_{it}^{S} + \gamma PASS_{it}^{SS}}{\alpha \sum_{j=1}^{N} PASS_{it}^{C} + \beta \sum_{j=1}^{N} PASS_{it}^{S} + \gamma \sum_{j=1}^{N} PASS_{it}^{SS}} \\ + \frac{\alpha LAW_{it}^{C} + \beta LAW_{it}^{S} + \gamma LAW_{it}^{SS}}{\alpha \sum_{j=1}^{N} LAW_{it}^{C} + \beta \sum_{j=1}^{N} LAW_{it}^{S} + \gamma \sum_{j=1}^{N} LAW_{it}^{SS}} \end{array} \right] \left[\frac{N}{5} \right]$$

Within each of these five terms, consistent with the coding protocol described above, commemorative bills are weighted by $\alpha = 1$, substantive bills are weighted by $\beta = 5$, and substantive and significant bills are weighted by $\gamma = 10$. The normalization (N/5) across all N legislators in the chamber ensures that the average Legislative Effectiveness Score is equal to 1 for each chamber (House or Senate) in each legislative term. Hence, those legislators with a score greater than 1 are more effective than average, all else equal.

While the LES successfully captures the extent to which individual legislators are successful in advancing their sponsored agenda items in Congress, compared to all other members in the chamber, it fails to account for several factors that are relevant to the jobs of legislators. First, and most obviously, the LES does not account for how members of the House

or Senate might be effective in stopping bills from advancing further in the legislative process. Second, the LES does not account for other activities, such as constituent casework or communications or oversight or serving as an intermediary to the bureaucracy, each which might require a significant amount of legislators' attention. Given that the LES is meant to capture lawmaking activities, however, the fact that the LES sets aside these latter aspects of a Representative's or Senator's job is reasonable.

A third concern, however, which is highly relevant to our current effort is that the LES, as constructed above, only captures how bills that are sponsored by members advance though the legislative process in their initial forms. That is, legislators only get credit for seeing their sponsored measures advance through the legislative process if their names are attached to these bills as the primary sponsor. If, however, the text of a Representative's initially-sponsored bill is incorporated into a second Representative's bill, for example, and that second bill advances further in the in the lawmaking process (including, perhaps, being signed into law), the sponsor of that first bill receives no additional credit towards her LES for seeing legislation that she initially sponsored becoming law in another form.

Given the widely-perceived decline of "regular order" over the years, and the rise of unorthodox lawmaking (i.e., Sinclair 2016), it seems plausible that a sizeable portion of lawmaking activity involves legislators successfully "hitchhiking" their bills to other measures that advance further in the lawmaking process (i.e., Casas, Denny, and Wilkerson 2020). Given that the LES does not capture this sort of behind-the-scenes lawmaking, it is likewise plausible that the analyses of the LES, while yielding valuable insights about the correlates of lawmaking success, as defined as the ability to advance one's own sponsored agenda items through the

legislative process, are likewise missing some important nuances that would emerge from a more holistic engagement with the legislative process.

Drawing on data from the 103rd-113th Congresses, Casas, Denny, and Wilkerson (2020) employ a new methodology to analyze the text of all sponsored bills to identify all cases where complete bills were incorporated as subsections into other bills that ultimately became law. By identifying the incidence of legislative hitchhiking in this way, the authors are able to analyze who is most successful at seeing their bills incorporated into other measures. Moreover, the authors also demonstrate how the correlates of lawmaking success, once one accounts for hitchhikers, vary in comparison to defining lawmaking success solely as a function of seeing one's sponsored bills become law.

Our approach here builds on Sinclair's conceptual foundations, in that we wholeheartedly embrace the notion that a sizeable amount of lawmaking likely occurs behind the scenes, where legislators seek to insert portions (or the entirety) of their own bills into other vehicles that will ultimately become law. Our approach likewise builds on Casas et al.'s methodological innovations in recognizing the importance of understanding incorporated text from different legislative instruments into the lawmaking process; but we deviate from Casas et al. in important ways. First, rather than creating an entirely new class of "hitchhikers" to be studied independently, our methodology builds directly on the formulation of the LES as described above, in that we consider all public bills at all five major lawmaking stages and across the three categories of substantive significance.[2] Moreover, and potentially most importantly, in

[2] Casas, Denny, and Wilkerson (2020) discard commemorative legislation from their analysis entirely, and they treat all other legislation the same, with regard to substantive significance. Eatough and Preece (forthcoming) also disregard differences in bill significance and treat the group of hitchhiker bills as equally influential as standalone bills within each Congress, regardless of whether there are many fewer or many more standalone laws than hitchhiker laws.

considering all public bills, we also include appropriations bills, which are often the focus of significant hitchhiking activity (Reynolds and Hanson 2023); whereas Casas et al. discard them from their sample "because they are quasi-compulsory" (2020, 8).

The inclusion of these bills (and sections of bills) ensures that we are able to capture the largest body of legislative activity for which members might seek to embed their sponsored bills into other vehicles that are likely to become law. More broadly speaking, our approach allows us to generate a more refined version of the Legislative Effectiveness Score (which we colloquially refer to as "LES 2.0") that accounts for the considerations raised by Casas et al. in their important work, while likewise allowing us to facilitate an apples-to-apples comparison with the findings that emerge from analyses of the more conventionally calculated LES.[3]

Data and Methods

Here we directly build on and expand both the prior work done by Volden and Wiseman (2014, 2018) and Casas, Denny, and Wilkerson (2020) turning to the 103rd (1993-1994) through the 117th (2021-2022) Congresses to generate new legislative effectiveness scores that account for "hitchhiker" language. To that end, we began by scraping the text of every version of each bill housed by the Government Printing Office for this period. Following Casas, Denny, and Wilkerson (2020), we process the text using their cleaning code to remove headers, procedural statements that may vary across bill versions, number, capitalization, punctuation, and importantly removes entire sections of bill text including Findings, Definitions, Appropriations, and Table of Content sections. Given inherent differences – and similarities – across versions of

[3] Eatough and Preece (forthcoming) also advance important innovations by analyzing lawmaking effectiveness by employing text-as-data analytic methods to create the "LawProM" metric. Their measure also includes other aspects of the legislative process, such as cosponsorship activity, which we deem to be less important in capturing lawmaking effectiveness, and which limits the scope of comparability across the different metrics.

bills, these cleaning steps are essential for making comparisons across bills and bill versions. Intuitively, they strip the bill text down to its substance by removing procedural language and required formatting.

Once cleaned, our first step in identifying and measuring language that is added or subtracted across bills and across bill versions is calculating textual similarity. Prior work has tended to do so through three different metrics. First, Casas, Denny, and Wilkerson (2020) builds on the approach introduced by Wilkerson, Smith, and Stramp (2015) to trace the flow of policy ideas, using the Smith-Waterman algorithm and a number of resulting similarity scores. While this method is attractive because of the detailed information it retains about word ordering and also brings in training datasets, it is highly computationally intensive. In the context of comparing all bills to all other bills, this is not feasible. Second, Eatough and Preece (forthcoming) turn to calculating a Jaccard Similarity, which uses both bill sections as the dominator, and shift their focus on the comparison of sections of bills to each other. Third, work on the diffusion of state level policies or bills from interest groups uses the ratio of matches (Kroeger WP) or cosine similarity metrics (e.g., Jansa, Hansen, Gray 2019). Here we use the ratio of matches approach, because this combination of numerator and dominator gives us a score of how much subsequent bills are using prior bill text.

More specifically, within each Congress, we conduct pairwise comparisons between all versions of bills and of all other bills in that Congress.[4] We focus on the following version-to-version pairs: IS to ENR; IH to ENR. These versions are introduced in the House (IH) or Senate (IS) and enrolled (ENR) upon passing both House and Senate in identical form. Thus, we are looking to capture the amount that any introduced bill is incorporated into the final version of

[4] Data for the 112th Congress were unavailable for analysis at the time of this writing, but will be included in future drafts.

any other bill that became law. To make these comparisons, we go Congress by Congress to compare each bill to each other bill and bill version using the "textreuse" package in R.

For a specific bill in a given Congress, we follow Casas, Denny, and Wilkerson (2020) by dividing the text of the bill into 5-word shingles, which splits the text of each bill into smaller chunks, forming the basis of comparison between documents. Starting with the first word of the document, the function rolls through each sequential set of 5-words until the end of the document. For example, if the document is "lifting the restrictions on crude oil exports encouraged additional domestic," it would be split into the following six 5-word shingles:

1. lifting the restrictions on crude
2. the restrictions on crude oil
3. restrictions on crude oil exports
4. on crude oil exports encouraged
5. crude oil exports encouraged additional
6. oil exports encouraged additional domestic

After each bill version is split in this way, the shingled bills are compared to generate a score of the similarity between the documents. We calculate the ratio of matches, with the numerator as the number of shingles in the introduced bill that are also in the law, and the denominator is the total number of shingles in the introduced bill. This score is a directional method of calculating similarity, essentially capturing the fraction of each bill's language found in each law.

After reviewing a comprehensive set of bill-law pairs with similarity scores greater than 20%, we limit the cutoff of bill pairs to more closely examine those over 50%. Dropping below 50% resulted in adding mostly false positives, such as all post office namings being included.

This list of all bill-law pairs with scores over 50% was then winnowed down through a multi-stage process to a final list of embedded bills used to assign additional credit to the original sponsors of such hitchhiking bills. Specifically, we required a similarity score of 60% or higher for bills with less than 10,000 wors and 70% or higher for bills with less than 1,000 words (again to eliminate broad categories of false positives). We then dropped bills that would have led to double credit for a lawmaker (embedding their bill in another one of the same sponsor's bills that became law, as well as cases where the embedded bill became law on its own). We also removed bills that were other-chamber companion bills to avoid double-credit in such situations, and limited to one bill-law pairing any instances in which a bill's language was embedded in multiple laws. Additionally, we removed instances in which the bill was introduced after the soon-to-be law was sent to the President. Finally, we hand-checked each remaining pair to ensure that legislative intent remained largely intact.[5]

The remaining list of hitchhiker bills embedded in other laws represents cases where the original sponsor should receive credit as an effective lawmaker behind the scenes. Specifically, for each instance in which these bills were not already credited to the lawmaker's tally of receiving "Action beyond Committee" (ABC), "Passing" (PASS), or "Becoming Law" (LAW) in the LES formula above, such credit was added and a new LES 2.0 was calculated (again normalized to a mean value of one).

Using these data, we now proceed in three steps to answer our overarching questions. First, how have the patterns of bills embedded in other legislative vehicles changed over time? Second, what are the characteristics of legislators who are effective behind-the-scenes

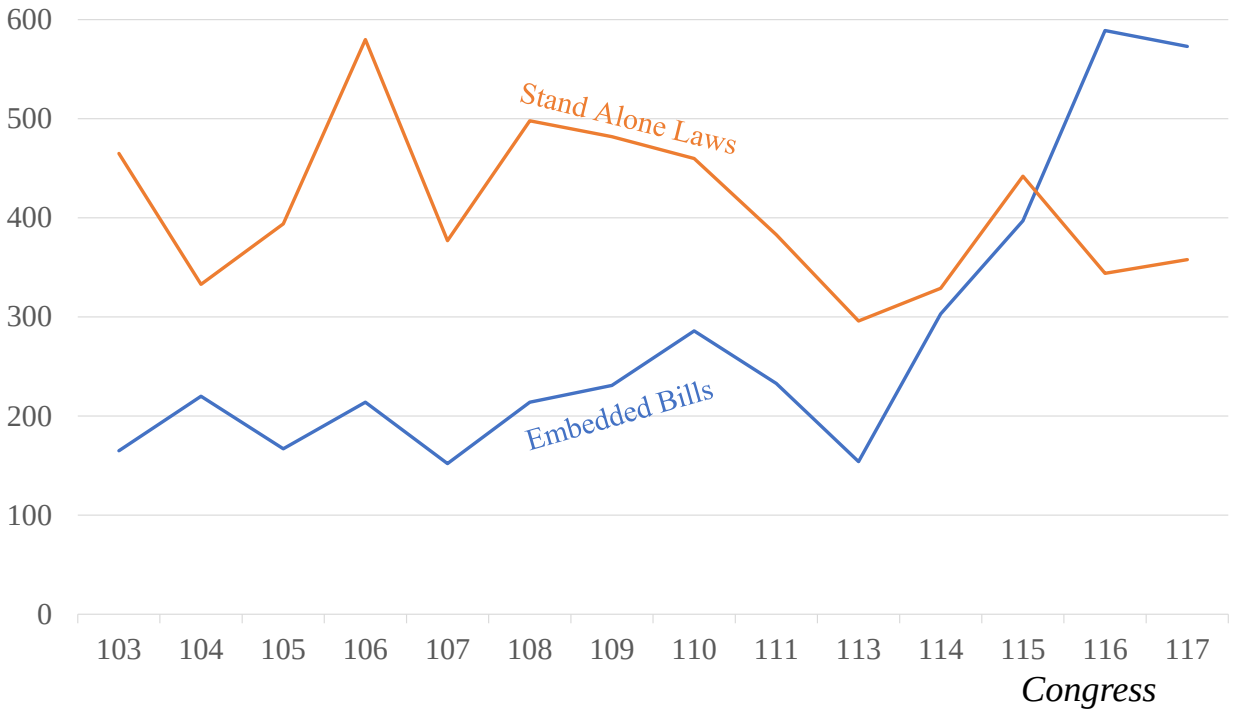
[5] Sometimes language drafted for one bill is recycled by legislative drafters and occasionally overlapping language is used for the exact oppositive purpose of the original sponsor's intent. In other instances, much of the language is identical but the underlying substance is lost, such as when a specific ship is or is not added to a fleet, a specific product is or is not subject to a tariff, and so on.

lawmakers? And, third, how much must we revise our understanding of who effective lawmakers are and what they do, upon incorporating embedded bills into Legislative Effectiveness Scores?

Embedded Bills and their Lawmaking Vehicles

How often do members of Congress sponsor bills that are embedded in other bills that become law, in comparison to the number of stand-alone laws that are passed? To engage with this question, we turn to Figure 1, in which we plot out the number of stand-alone laws (i.e,. new Public Laws) that are created by each Congress, as well as the number of bills that are ultimately embedded in other bills that become laws (according to our methodology above) across our entire time series (103rd-117th Congresses).

Figure 1: Number of Stand-Alone Laws and Embedded Bills by Congress



In looking at the figure, several points emerge. First, the practice of embedding one's bills into other bills that are ultimately signed into law has been a common practice for the past 30 years, with a sizeable portion of the lawmaking agenda being composed of sponsored bills that successfully hitchhike onto other bills that make their way to the President's desk. Second, for most of the time series, up until the 114th Congress, the number of stand-alone laws and the number of embedded bills moved in largely the same directions from Congress to Congress. With a few exceptions (e.g., the 104th and 105th Congresses), when the number of embedded bills increased, the number of stand-alone laws increased, as well. (And a similar relationship obtained when the number of embedded bills decreased.) In more recent Congresses, however, as seen in the 116th Congress in particular, these quantities have not moved in the same direction.

Third, we see that while the number of embedded bills fluctuated a bit from Congress to Congress, this number stayed mostly between 150-250 for much of the time series. Beginning with the 113th Congress, however, the number of embedded bills began to consistently increase over the next several Congresses, so that by the 116th Congress there were actually more bills being embedded into laws (589) than the number of stand-alone laws being created (344). These findings suggest that as political polarization across the parties has increase (e.g., McCarty, Poole, and Rosenthal 2006; Theriault 2008), legislators have found other ways to advance their policy initiatives into law, which is less publicly visible than the normal path that they might take to achieve their goals.

Having identified the upward trend of Members seeing their embedded bills become parts of laws over time, we next want to explore which vehicles are members attaching their bills (or portions of their bills) to in order to see them advance further in the lawmaking process? In other words, which types of bills serve as the main vehicles for potential hitchhikers that are looking

for a ride to the president's desk? To engage with this question, in Table 1 we identify the top ten vehicles, as defined by the number of embedded bills attached to them, across the 103rd-117th Congress. As we can see, most of the "top 10" vehicles attract 60-80 other bills to them in the course of the legislative process; but a few of them attract more than 100 other bills, with the number one vehicle, the Consolidated Appropriations Act of 2023 in the 117th Congress, carrying along 231 embedded bills. It's also worth noting that three of the top 10 vehicles were appropriations measures, which comprised nearly 50% (465/1001) of all of the embedded bills among the top 10 vehicles. The fact that three of the top 10 vehicles were appropriations bills points to the importance of including appropriations measures in our analyses if we seek to understand the determinants and consequences of legislators seeking to advance their bills by working behind the scenes. Three National Defense Authorization Acts (NDAA) are also found on the top-ten list, which also features laws dealing with transportation, health care, and public lands.

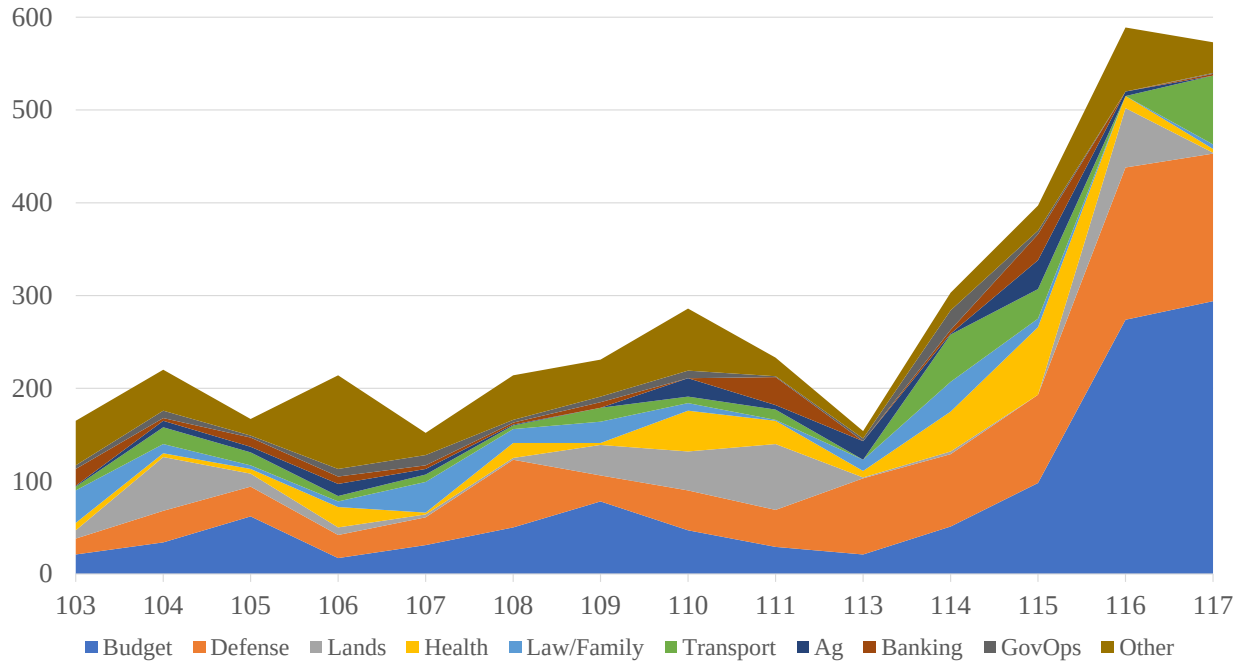
Table 1: Top Ten Vehicles for Embedded Bills

Congress	Vehicle	Bills Embedded
117	Consolidated Appropriations Act of 2023	231
116	Consolidated Appropriations Act of 2021	163
117	James M. Inhofe NDAA of 2023	109
116	William M. (Mac) Thornberry NDAA of 2021	86
117	Infrastructure Investments and Jobs Act	74
115	Support for Patients and Communities Act	71
116	Further Consolidated Appropriations Act of 2020	71
111	Omnibus Public Land Management Act of 2009	69
113	Carl Levin and Howard P. "Buck" McKeon NDAA of 2015	64
116	John Dingell Conservation, Management, and Recreation Act	63

In Figure 2 we show the number of embedded bills broken down by the policy areas of the vehicles into which they are embedded – such as "budget" for the omnibus appropriations

acts or "defense" for the NDAA.[6] As we can see from the Figure, there has clearly been a notable increase in the number of embedded bills that are attached to legislation engaging with budgetary policy and/or defense policy in recent congresses; and beginning in the 113th Congress, in particular. As a point of comparison, in the 103rd Congress, we see that 38 of the 165 (23%) embedded bills were appended to budget (21) or defense (17) bills that became law. In contrast, by the 117th Congress, 453 of the 573 (79%) embedded bills were appended to budget (294) or defense (159) bills that became law.

Figure 2: Issues of Vehicles for Embedded Bills, by Congress



Note: The figure shows how many embedded bills are included within the policy area of the main legislative vehicles in each Congress. It shows the rising use of omnibus appropriations measures and the NDAA as key legislative vehicles, as well as occasional packages of farm bills, lands bills, and others.

[6] For the purposes of analysis, bills that were introduced into the 103rd-111th Congresses were coded into one of 19 issue areas based on the Congressional Bills Project coding following the Comparative Agendas Project (CAP) of Baumgartner and Jones (2010). For later Congresses, bills were coded into different policy areas based on the policy categorization employed by Congress.gov, which assigns bills into one of 32 different policy areas. We then mapped the Congress.gov coding onto the appropriate CAP categories.

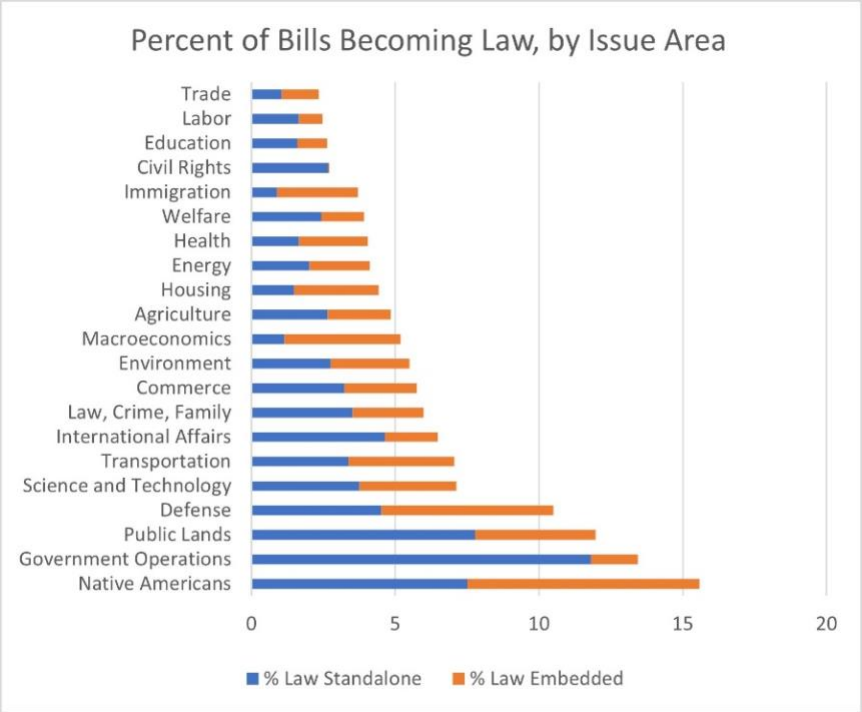
While it is clearly the case that budget legislation (which includes many appropriation measures) has become an increasingly important vehicle for members to try to get their legislation attached to, it is also true that appropriations or defense measure are not the only vehicles with which members have hitched rides for their bills. Figure 2 also points to how many other policy areas, including public lands, health, agriculture, and government operations, have often yielded important vehicles that have carried numerous embedded bills into law.

Finally, another way to explore the data is to identify which policy issues are more or less likely to find their ways into law by being embedded to other bills. Interestingly, the subject matter of the embedded bill and its legislative vehicle only matched one another half of the time across our data (1970 matches out of 3898 embedded bills), indicating the opportunity to embed a wide range of issues into other laws. In Figure 3 we identify the percent of sponsored bills that ultimately become law across each of 21 different issue areas. And within each issue area, we identify the percentage of those bills that become law as stand-alone laws (i.e., the originally sponsored bill ultimately makes its way to the president's desk), versus the percentage of bills that become law by being embedded in other legislative vehicles.

Across all bills and all policy areas, 3.9% of bills became law in a stand-alone manner and another 2.7% became law as hitchhikers. However, the data presented in Figure 3 demonstrate that there is a wide range of variance across issues areas regarding which types of policies are more likely to find their ways into law as parts of other bills, rather than following the more conventional legislative process. Bills in some issue areas, such as those dealing with Native Americans policy, are (essentially) equally likely to become law as stand-alone bills as they are at being tacked onto other bills as part of a larger package that makes its way to the president's desk (and both forms face less gridlock than most other policy areas). Alternatively,

bills in some issue areas, such as those dealing with Macroeconomics (including the budget), are more likely than not to become law after being embedded in other bills. Bills in other issues, however, are notably more likely to become public law as stand-alone bills, rather than being embedded in other legislation. Bills engaging with Government Operations, Public Lands, and International Affairs, for example, fall into this latter category. And at the extreme end of the spectrum, across the 103rd-117th Congress, we see that there are no bills that engage with Civil Rights policy that became law by being embedded in another bill.

Figure 3: The Percentage of Bills Becoming Law via Orthodox and Unorthodox Means



Note: The figure shows the cumulative rate at which bills in each policy area became law across the 103rd to 117th Congresses, as well as the relative proportion of those successes arising as stand-alone laws and as embedded in other laws.

While unorthodox lawmaking has become more common in recent years, its effects vary tremendously across public policy areas. Scholars and practitioners focused on issues like

immigration, health, or housing, for instance, would benefit from closely examining behind-the-scenes lawmaking. In contrast, those focused on civil rights or international affairs might question why the unorthodox path is less well-trodden in their areas of interest.

Who Engages the Most in Behind-the-Scenes Lawmaking?

Given how commonplace behind-the-scenes lawmaking has become – especially in more recent Congresses – one wonders which members of the House and Senate are most successful at embedding their bills into other vehicles that become law? We begin to engage with this question by estimating a series of negative binomial regression models, where the dependent variable is the number of bills that a legislator successfully embeds in other vehicles that ultimately become law in each Congress. In estimating these models, we explore a wide range of institutional variables and personal characteristics have been consistently demonstrated to be correlated with lawmaking effectiveness in other scholarship (e.g., Volden and Wiseman 2014, 2018). If our conjecture is correct – that behaviors promoting effective lawmaking on stand-alone measures also help with behind-the-scenes lawmaking – then we should see many of these same variables mattering here.

More specifically, we control for whether the legislator is a member of the majority party, whether she holds a committee or subcommittee chair, how many terms she has served in Congress, and whether she previously served in a state legislature (and the underlying legislative professionalism of that state legislature). We also control for whether she held positions of institutional leadership, such as being a majority or minority party leader (including serving as Speaker of the House), as well as whether she was a member of a "power" committee in her

chamber.[7] Finally, we control for several personal background variables, including whether the legislator was female, African American, and/or Latino, the size of her state's congressional delegation, and her vote share in the previous election (and that valued squared). The results from these regression analyses are presented in Table 2, where models 2.1 and 2.2 estimate data from the U.S. House, and models 2.3 and 2.4 estimate data from the U.S. Senate, between the 103rd-117th Congresses.[8]

In Model 2.1 we see that many of the factors that we would normally expect to be associated with a Representative's ability to advance her sponsored bills through the legislative process from introduction until (ultimately) becoming law are also related to her ability to embed her bills into other vehicles that ultimately become law. Specifically, members of the majority party, committee chairs, subcommittee chairs, and more senior members of the House are all more successful at embedding their bills than members of the minority party, rank-and-file Representatives (i.e., non-chairs), and more junior members. We also see that female Representatives are more successful at lawmaking behind the scenes, in that they see greater numbers of their bills embedded in other vehicles (that become law) than their male counterparts. This too is consistent with earlier findings regarding lawmaking effectiveness (e.g., Anzia and Berry 2011; Volden, Wiseman, and Wittmer 2013). Based on the Distance from Median variable, it appears that moderates are more effective at moving their bills forward in larger packages than are extremists, consistent with theory (e.g., Black 1948) and with empirical findings in Congress from earlier eras (Chiou and Goplerud forthcoming).

[7] Following Volden and Wiseman (2014, 2018), we define "power" committees to be Appropriations, Ways and Means, and Rules for the House, and Appropriations, Armed Services, Finance, and Rules and Administration for the Senate.

[8] Summary statistics for all variables can be found in Appendix Table 1.

Table 2: Determinants of Success in Embedding Laws, 103-117th Congresses

DV: Number of Laws Embedded	Model 2.1 House	Model 2.2 House	Model 2.3 Senate	Model 2.4 Senate
Lagged LES		0.140***		0.259***
		(0.019)		(0.050)
Majority	0.214**	0.259**	0.072	0.388**
	(0.101)	(0.110)	(0.166)	(0.180)
Committee Chair	0.563***	0.330**	0.435***	0.257***
	(0.121)	(0.133)	(0.116)	(0.115)
Subcommittee Chair	0.204***	0.101	0.111	-0.109
	(0.078)	(0.081)	(0.142)	(0.152)
Seniority	0.025**	0.005	0.010	-0.006
	(0.010)	(0.010)	(0.013)	(0.013)
State Leg.	-0.123	-0.125	-0.002	0.129
	(0.115)	(0.121)	(0.213)	(0.200)
State Leg. × Leg. Prof.	0.109	0.034	0.671	0.273
	(0.329)	(0.347)	(0.791)	(0.729)
Majority Leader	0.076	0.029	0.033	0.020
	(0.156)	(0.150)	(0.160)	(0.145)
Minority Leader	-0.287	-0.305	0.042	0.038
	(0.213)	(0.211)	(0.187)	(0.177)
Speaker	-0.556	-0.404		
	(0.945)	(0.946)		
Power Committee	0.045	0.075	0.567***	0.491***
	(0.074)	(0.074)	(0.108)	(0.116)
Distance from Median	-0.803***	-0.566**	-0.180	0.119
	(0.219)	(0.234)	(0.325)	(0.328)
Female	0.180**	0.178**	0.202	0.266*
	(0.075)	(0.081)	(0.143)	(0.141)
African American	-0.000	-0.012	0.367	0.309**
	(0.127)	(0.136)	(0.239)	(0.140)
Latino	0.069	0.030	0.805*	0.355
	(0.166)	(0.157)	(0.360)	(0.282)
Size of Delegation	-0.006	-0.002	0.001	-0.0007
	(0.003)	(0.003)	(0.005)	(0.004)
Vote Pct	-0.035*	-0.046**	-0.019	-0.023
	(0.020)	(0.023)	(0.043)	(0.043)
Vote Pct Squared	0.0002	0.0003*	0.00002	0.00006
	(0.0001)	(0.0001)	(0.0003)	(0.0003)
Constant	0.526	0.804	0.238	0.120
	(0.716)	(0.851)	(1.395)	(1.410)
N	6056	5108	1397	1239
χ^2	254.36	311.36	122.28	138.79

Notes: Dependent Variable is the number of bills that Lawmaker *i*'s embeds in bills that become law in Congress *t*. Negative-binomial regression estimation, robust standard errors in parentheses, observations clustered by member. **p < 0.10* (two-tailed), ***p < 0.05* (two-tailed), ****p < 0.01* (two-tailed).

It also appears that more electorally secure members (as measured by their vote percentage in the previous election) embed fewer of their bills into other vehicles than do less secure members. Perhaps this result follows from less electorally secure members working especially hard to secure legislative victories, to help to provide them with credit-claiming opportunities for when they engage with their constituents (i.e., Fenno 1978). Other than these factors, no other institutional or personal characteristics of Representatives appear to be meaningfully correlated a Representative's success in embedding her bills in other vehicles that become law. It is not that case that African-American or Latino legislators, for example, are notably better or worse than others at this form of lawmaking.

To more directly explore whether classically considered effective lawmakers are also effective behind the scenes, in Model 2.2 we also include a variable to capture each legislator's Legislative Effectiveness Score from the previous congressional term (*Lagged LES*) based on stand-alone bills. The coefficient on *Lagged LES* is positive and highly significant. In other words, those Representatives who are most successful at advancing their stand-alone bills through the legislative process (as captured by their LES in the previous Congress) are also those Representatives who are most successful at getting their sponsored bills appended to other vehicles that ultimately become law. Beyond this consideration, the correlates of a Representative's ability to embed her bills in other successful vehicles remain impactful. Members of the majority party, committee chairs, more ideologically moderate members, and female members are all more successful at embedding their legislation on its way to the president's desk.

Turning to Models 2.3 and 2.4, we see that many of these same relationships hold for the Senate. Controlling for a Senator's lagged Legislative Effectiveness Score from the previous

Congress, Senators in the majority party, and those who hold committee chairs are the most successful at embedding their bills in other vehicles that become law. We also see that Senators on "power" committees are also among the most successful at embedding their bills, which is reasonable, given that these Senators are presumably in a privileged position (given their committee membership) to append measures to bills engaging with budgetary matters. We also see that once we control for a senator's lagged LES, female Senators and African-American Senators are also more successful at seeing their bills embedded in other vehicles.[9]

Finally, consistent with the House and with our broader argument, we see that the coefficient on *Lagged LES* is positive and statistically significant. Moreover, the magnitude of the coefficient is quite substantial; for example, a one-standard-deviation increase in one's LES in the previous Congress is equivalent to gaining a committee chair position, in terms of the degree to which they are both better able to embed their bills into successful legislative vehicles. More broadly, the positive and statistically significant coefficient on *Lagged LES* points to, once again, how those legislators who are most successful at advancing their stand-alone bills through the legislative process are also among the most successful at embedding their bills into other vehicles that ultimately become law.

New Insights for Lawmaking Effectiveness?

Given that there is clearly a positive relationship in both the House and the Senate between being successful at advancing one's stand-alone sponsored bills (as measured via the conventionally calculated LES) and embedding one's bills in other vehicles that become law, how much do members' Legislative Effectiveness Scores change upon accounting for success

[9] It is worth noting that this latter finding is being driven by an extremely low number of African-American Senators in this time series.

with embedding bills? Recall from our earlier description of the calculation of the Legislative Effectiveness Score that the LES is generated by measuring how many of a Representative's (or Senator's) sponsored bills advance through five stages of the legislative process. Given that we are now able to identify which bills are embedded in other vehicles that go on to become law, we can account for this lawmaking activity by altering our calculation of the LES in a very specific way that is consistent with the spirit of the original formulation.

Specifically, for each sponsored bill that a lawmaker successfully embeds in another bill that ultimately becomes law, we give that legislator credit for that sponsored bill receiving action beyond committee, passing their home chamber, and becoming law, even if the original sponsored bill did not advance through these steps as a stand-alone measure. For any stage that the stand-alone bill reached on its own, there is no need to add further credit, as we do not wish to double-count legislative achievements. But, for example, if a Representative introduces a bill that does not advance beyond referral to committee (as recorded in the public record on Congress.gov), but that bill ultimately appears as part of a larger bill that becomes law, we give that legislator additional credit for the later stages, even though (strictly speaking) the original sponsored bill never made it out of committee. In adding the number of successful embedded bills to each Representative's numerator in the ABC, PASS, and LAW terms of the LES formula, we also add the sum of *all* embedded bills reaching these stages to the relevant denominator terms of the LES formula, to ensure comparable comparisons across all lawmakers.

A consideration of some recent examples points to the ways in which calculating the Legislative Effectiveness Score this way (which we denote as LES 2.0) might alter the relative cardinal and ordinal rankings of lawmaking effectiveness of members of the House and Senate. More specifically, in Table 3a we identify the "top 10" most effective lawmakers in the

Democratic and the Republican parties in the 117th Congress according to their Legislative Effectiveness Scores (LES) based solely on stand-alone bills, while Table 3b presents the "top 10" most effective lawmakers in each party, based on their LES 2.0 scores that include behind-the-scenes lawmaking.

Table 3a: Top 10 Most Effective Lawmakers in the House in the 117th Congress (LES)

Democrats		Republicans	
Name	LES	Name	LES
Rosa DeLauro (CT-3)	10.282	Don Young (AK-AL)	3.887
Gerald Connolly (VA-11)	8.924	John Katko (NY-24)	3.387
Carolyn Maloney (NY-12)	7.997	Mike Bost (IL-12)	3.371
Peter DeFazio (OR-4)	7.142	Michael McCaul (TX-10)	3.168
Hakeem Jeffries (NY-8)	6.576	Sam Graves (MO-6)	2.328
Jerrold Nadler (NY-10)	5.963	Mike Johnson (LA-4)	1.994
Joe Neguse (CO-2)	5.598	Lisa McClain (MI-10)	1.924
Mark Takano (CA-41)	5.209	Ann Wagner (MO-2)	1.845
John Yarmuth (KY-3)	4.739	French Hill (AR-2)	1.758
Mike Levin (CA-49)	4.627	Young Kim (CA-39)	1.715

Note: The table lists the top ten Democrats and Republicans from the 117th House, according to their Legislative Effectiveness Scores based solely on stand-alone bills.

Table 4b: Top 10 Most Effective Lawmakers in the House in the 117th Congress (LES 2.0)

Democrats		Republicans	
Name	LES 2.0	Name	LES 2.0
Gerald Connolly (VA-11)	7.142	Don Bacon (NE-2)	6.137
Carolyn Maloney (NY-12)	6.802	Don Young (AK-AL)	4.336
Joe Neguse (CO-2)	6.376	Brad Wenstrup (OH-2)	3.045
Rosa DeLauro (CT-3)	5.653	John Katko (NY-24)	2.972
Jason Crow (CO-6)	4.520	Mike Bost (IL-12)	2.872
Mark Takano (CA-41)	4.419	Michael McCaul (TX-10)	2.661
Peter DeFazio (OR-4)	4.383	Gus Bilirakis (FL-12)	2.461
Hakeem Jeffries (NY-8)	4.181	David Joyce (OH-14)	2.013
Eleanor Norton (DC-AL)	4.168	John Curtis (UT-3)	1.613
Jerrold Nadler (NY-10)	4.070	Ann Wagner (MO-2)	1.590

Note: The table lists the top ten Democrats and Republicans from the 117th House, according to their LES 2.0, accounting for embedded bills as well as stand-alone bills. These lists show significant overlap with those from Table 3a.

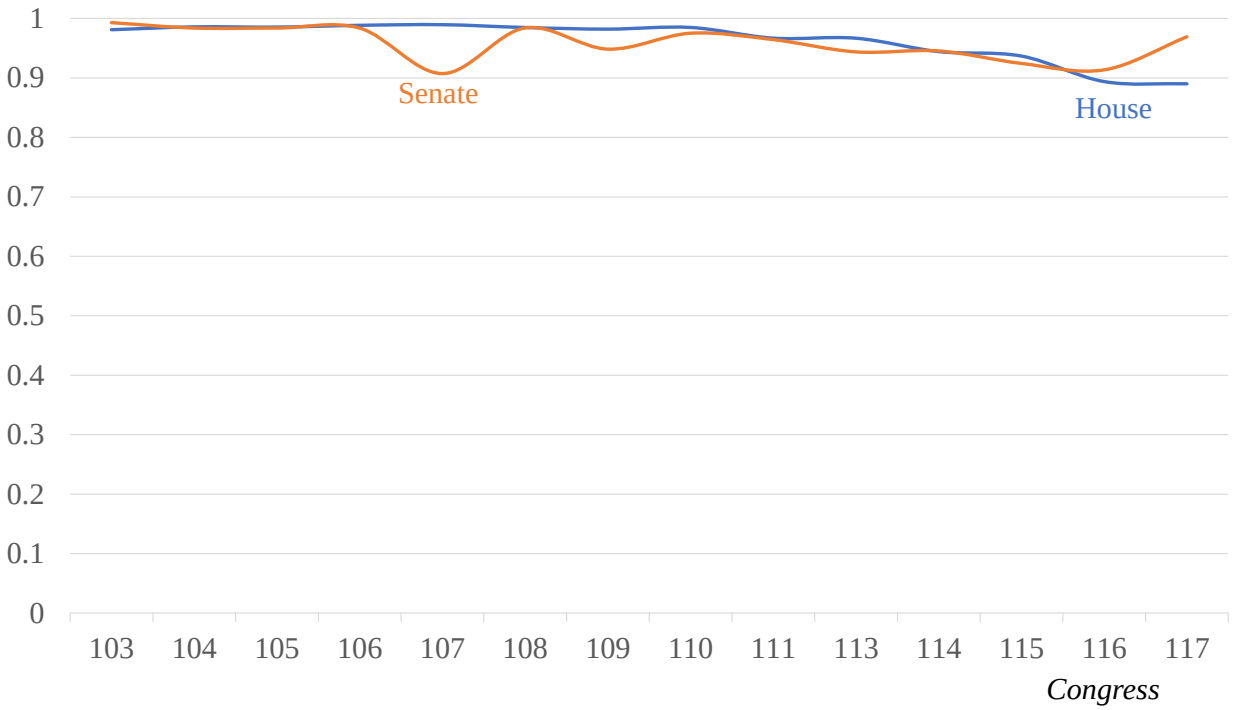
In comparing across the tables, several interesting observations emerge. First, and perhaps unsurprisingly given the findings in Models 2.2 and 2.4, we see that there is quite a bit of consistency between who are most effective lawmakers according to either metric, especially among members of the Democratic (Majority) Party in the House. While there is some movement within the top-10, with regard to ordinal rankings, most of highest performing Democrats according the their Legislative Effectiveness Scores continue to be among the highest performing Democrats when we account for Representatives' success at embedding their bills into other vehicles (as measured via their LES 2.0 scores). Indeed, all of the top eight performers on LES are on the top-ten list using LES 2.0.

On the minority party (Republican) side of the aisle, we do see more variance across the metrics. The most effective lawmaker when we account for success in advancing embedded bills, for example, is Representative Don Bacon (NE-2), who is not even among the top-10, according to the standard formulation of his LES. The reason for Representative Bacon's effectiveness, as measured by the LES 2.0, is that he succeeded in having 16 of his sponsored bills be incorporated into the *James M. Inhofe National Defense Authorization Act for Fiscal Year 2023*. Hence, despite having only two of his sponsored bills pass the House as stand-alone measures, he is easily identified as the most effective Republican lawmaker in House, once we account for his success at embedding his bills in other vehicles. Putting aside this notable outlier, however, it is still the case that there is a good deal of consistency among the top performers in the Republican Party across both the LES and LES 2.0 metrics.

We engage with this point more directly in Figure 4, in which we plot out the correlation between the conventionally calculated LES "Classic" and LES 2.0, by Congress, for the House and the Senate. As we can see in the figure, the correlation across these metrics is not only

positive, but also extremely high, ranging between 0.89 and 0.99, depending on the Congress and the chamber. In the most recently completed Congress (the 117th Congress), for example, the correlation between the classic LES and LES 2.0 was 0.89 and 0.97 for the House and the Senate, respectively. Hence, even though behind-the-scenes lawmaking has become increasingly commonplace in more recent Congresses (as illustrated in Figure 1), its impact on the overall LES metric is quite limited. In large part this is because those members who are effective lawmakers is seen in the advancement of their own sponsored bills are also effective in working behind the scenes.

Figure 4: Correlation of LES and LES 2.0, by Congress



That said, it is worth exploring at a more systematic level how legislators' personal characteristics and institutional positions in the legislature are correlated with their lawmaking effectiveness – specifically, do the correlates of lawmaking effectiveness vary depending on

whether lawmaking effectiveness is measured with the conventionally calculated LES, or with LES 2.0? To explore this question, we replicate the empirical model that was first presented in Volden, Wiseman, and Wittmer (2013), in which the authors identified the conditions under which female members of the House were more effective lawmakers than their male counterparts, and the analysis in Volden and Wiseman (2018) in exploring lawmaking effectiveness in the U.S. Senate.

In Model 4.1 in Table 4, we replicate the specification in Volden, Wiseman, Wittmer (2013), where the dependent variable is Representative *i*'s LES in Congress *t*, and we control for each of the Representative's institutional and personal characteristics from that earlier analysis. Given that Volden, Wiseman, and Wittmer analyzed data from the 93rd-110th Congress, whereas we analyze data from the 103-117th Congresses, it is plausible that different findings will emerge across these different eras. That said, we see that most of the substantive findings from that earlier work hold when analyzing these more recent data. More specifically, the coefficient on *Minority Female* in positive and statistically significant. In other words, consistent with Volden, Wiseman, and Wittmer (2013), female Representatives in the minority party are more effective lawmakers than their male counterparts (but there is not substantive difference in the lawmaking effectiveness of men and women in the majority party).

Table 4: Lawmaking Effectiveness in the 103rd-117th Congresses

Dependent Variable:	Model 4.1 House LES	Model 4.2 House LES 2.0	Model 4.3 Senate LES	Model 4.4 Senate LES 2.0
Minority Female	0.115***	0.113***	0.124	0.165*
	(0.041)	(0.041)	(0.098)	(0.095)
Majority Female	-0.065	-0.061	-0.094	-0.081
	(0.075)	(0.066)	(0.105)	(0.097)
Majority	0.511***	0.471***	0.141	0.144
	(0.065)	(0.062)	(0.105)	(0.099)
Committee Chair	2.828***	2.461***	1.053***	0.926***
	(0.257)	(0.235)	(0.124)	(0.112)
Subcommittee Chair	0.568***	0.513***	0.222**	0.184*
	(0.069)	(0.064)	(0.099)	(0.097)
Seniority	0.053***	0.046***	0.012	0.012
	(0.009)	(0.009)	(0.009)	(0.009)
State Leg. Experience	-0.077	-0.070	-0.175	-0.146
	(0.066)	(0.064)	(0.159)	(0.144)
State Leg. × Leg. Prof.	0.366*	0.313*	0.892	0.769
	(0.193)	(0.190)	(0.768)	(0.650)
Majority Leader	0.436***	0.345**	-0.031	-0.039
	(0.152)	(0.137)	(0.150)	(0.134)
Minority Leader	-0.120*	-0.119**	-0.092	-0.091
	(0.062)	(0.060)	(0.081)	(0.080)
Speaker	-0.956***	-0.892***		
	(0.186)	(0.215)		
Power Committee	-0.216***	-0.183***	0.103*	0.147***
	(0.058)	(0.055)	(0.052)	(0.048)
Distance from Median	-0.208	-0.259*	-0.230	-0.297**
	(0.160)	(0.152)	(0.151)	(0.139)
African American	-0.099	-0.110*	-0.155	-0.097
	(0.070)	(0.064)	(0.136)	(0.130)
Latino	-0.082	-0.082	0.405*	0.382*
	(0.071)	(0.068)	(0.224)	(0.195)
Size of Delegation	-0.003	-0.002	0.008*	0.007*
	(0.002)	(0.002)	(0.004)	(0.004)
Vote Pct	-0.001	-0.0007	0.023	0.015
	(0.011)	(0.010)	(0.024)	(0.023)
Vote Pct Squared	-0.00002	-0.00002	-0.0002	-0.0001
	(0.0001)	(0.00007)	(0.0002)	(0.0002)
Constant	0.482	0.587	-0.269	0.067
	(0.390)	(0.367)	(0.808)	(0.768)
N	6056	6056	1397	1397
R^2	0.39	0.37	0.32	0.33

Notes: Dependent Variable used in Models 4.1 and 4.3 is Lawmaker *i*'s *Legislative Effectiveness Score* in Congress *t*. Dependent Variable used in Models 4.2 and 4.4 is Lawmaker *i*'s *Legislative Effectiveness Score 2.0* in Congress *t*. Ordinary least squares estimation, robust standard errors in parentheses, observations clustered by member.
*$p < 0.10$ (two-tailed), **$p < 0.05$ (two-tailed), ***$p < 0.01$ (two-tailed).

Turning to the other variables, we see that most of the earlier findings from Volden, Wiseman and Wittmer (2013) continue to hold. Members of the majority party, committee chairs, subcommittee chairs, and more senior members of the House are more effective lawmakers. Majority party leaders, with the exception of the Speaker of the House, are more effective lawmakers, while minority party leaders and rank-and-file members of the "power" committees are less-effective lawmakers. One result that deviates from earlier analyses, however, is that we see that African-American Representatives are no more nor less effective lawmakers than their non-African-American counterparts, whereas Volden, Wiseman, and Wittmer (2013) and Volden and Wiseman (2014) found that African-American members were notably less successful in advancing their sponsored bills through the legislative process. More recent work by Volden and Wiseman (forthcoming), however, points to how there has been a notable shift in the scope of legislative success among African Americans in the House in recent Congresses, beginning in the 111th Congress, especially. Hence, the statistically insignificant coefficient on *African American* in Model 4.1 likely reflects this notable change in the scope of legislative success among African American members of the House in recent Congresses.

In Model 4.2 we see how these findings hold once we account for the scope of Representatives' success in embedding their bills into our calculation of the LES. Remember that work by Casas et al. (2020) and Eatough and Preece (forthcoming) would suggest that once one accounts for behind-the-scenes lawmaking activities, we are likely to see certain groups of legislators emerging to be more effective than we previously thought. In Model 4.2, however, we see that the correlates of lawmaking effectiveness (as measured with the LES 2.0) are quite consistent with the findings in Model 4.1. In several cases, such as the coefficients on *Minority Female* and *Majority Female*, the point estimates are almost identical across the models.

To the extent that there are consistent patterns of differences across the models, it appears to be the case that majority-party lawmakers (including chairs and leaders) and senior lawmakers are slightly less effective than previously believed. But these differences are fairly marginal, with coefficients remaining about 90% of their earlier sizes. The coefficient on Distance from Median, however, is 25% larger in Model 4.2 than in Model 4.1, and attains some degree of statistical significance ($p < 0.10$, two-tailed). This is in line with moderates being successful behind the scenes, as shown in Table 2.

Turning to Models 4.3 and 4.4, we replicate Volden and Wiseman's (2018) analysis of the Senate where the dependent variable is Senator *i*'s LES and LES 2.0 in Congress *t*, respectively. We see that the results reported in Model 4.3 are directionally consistent with the findings in Table 1 of Volden and Wiseman (2018), although some of the coefficients fail to obtain the same degree of statistical significance as was reported in Volden and Wiseman (2018). Whether these null findings follow from us analyzing a slightly different time period or a smaller sample size is worthy of further consideration. That said, and more relevant to our current exercise, we see that the results reported in Model 4.4, when measuring a Senator's lawmaking effectiveness with her LES 2.0 score, are substantively similar to what we obtain in our analysis of a Senator's LES in Model 4.3.

Those factors that are correlated with a Senator's success at advancing sponsored bills through the legislative process from introduction until (perhaps) becoming a stand-alone law are the same factors – and have nearly the same impact – as are those that are correlated with a Senator's lawmaking effectiveness when we account for success at embedding bills in other legislative vehicles that become law. Consistent with Eatough and Preece (forthcoming), minority-party women are more effective when accounting for behind-the-scenes lawmaking,

and that effect achieves heightened statistical significance ($p < 0.10$, two-tailed) in Model 4.4. Similar to the House findings, the effects of chairs and majority-party legislators are slightly diminished and moderates are somewhat more effective. On the whole, however, legislators who are effective at working behind the scenes are also effective at working in the light of day, and vice versa.

Conclusion

We build upon earlier scholarship to offer a new methodology for detecting the bills with their language significantly incorporated into other bills that have become law. Doing so, we find that behind-the-scenes lawmaking has significantly grown in the U.S. Congress over the past thirty years, to the point that there are now more bills that become law through behind-the-scenes lawmaking than as stand-alone laws passed through traditional channels. We show that the most regular vehicles for this type of activity are omnibus budget bills and the National Defense Authorization Acts, likely due to their must-pass status. But we find that other measures, such as those focused on agriculture, health, or public lands, are also used from time-to-time for behind-the-scenes lawmaking. Moreover, the subject areas of hitchhiker bills and their legislative vehicles only match one another about half of the time, suggesting possibilities of behind-the-scenes strategies to tackle thorny policy issues such as immigration via largely unrelated legislative vehicles.

We then explore which lawmakers are the most active and effective in working behind the scenes in Congress. We find that those who are effective in advancing legislation through traditional means are also the most effective at embedding their bill language in other legislative vehicles that become law. We construct a new set of Legislative Effectiveness Scores to give full credit for the expanded legislative success afforded by behind-the-scenes lawmaking. Upon

doing so, we find the new metric to be highly correlated with the prior version of the LES and that the same factors explaining lawmaking effectiveness through stand-alone measures explain the broader set of effective lawmaking practices. On the whole, these results lend strong support to the robustness of the burgeoning set of findings on lawmaking effectiveness over recent years.

While providing some comfort that scholarship has not been significantly off-base in this area, the results here do raise some significant future directions for scholars to explore. First, given the differences across policy areas in the degree to which stand-alone and embedded bills find lawmaking success, those interested in specific policy areas should likely pay more attention to behind-the-scenes lawmaking. Areas like health, housing, and immigration have recently seen more laws adopted via hitchhiking than on their own. Future work exploring whether issue-level Legislative Effectiveness Scores (e.g., Volden and Wiseman 2011, Heberlig and Larson 2022) are likewise largely unchanged upon inclusion of embedded bills is merited.

Second, the legislative vehicles that carry forward the most embedded bills may offer differential opportunities for particular groups of lawmakers to engage in behind-the-scenes lawmaking. Those on the key committees working on major packages may have an inside track in having their proposals embedded. Majority-party lawmakers may find embedding legislation in omnibus reconciliation packages particularly attractive under unified government due to their ability to avoid Senate filibusters. And other measures seem to embed both parties' proposals on a balanced and bipartisan basis to secure broad support for passage. Future scholarship on these processes and on opportunities for effective lawmaking and for overcoming policy gridlock may be fruitful.

Third, the text analysis approaches we use and are building upon offer a variety of additional possibilities to gain further insights into the lawmaking process. Where in the

lawmaking process is bill language most often embedded – in floor amendments, through committee markups, or through behind-the-scenes House-Senate compromises? When is language actually subtracted from bills, and does such subtraction remove objectionable language that would otherwise hinder a bill's progress? And, what fraction of final adopted bill language arrives through something of a black box, with no ability at present for scholars to trace its origins? As such, if credit and blame cannot be clearly assigned through matching elected politicians and policy choices, to what extent does behind-the-scenes lawmaking undermine democratic accountability?

References

Anderson, William D., Janet M. Box-Steffensmeier, and Valeria Sinclair-Chapman. 2003. "The Keys to Legislative Success in the U.S. House of Representatives." *Legislative Studies Quarterly*. 28(3): 357-386.

Anzia, Sarah F., and Christopher R. Berry. 2011. "The Jackie (and Jill) Robinson Effect: Why Do Congresswomen Outperform Congressmen?" *American Journal of Political Science* 55(3): 478-493.

Battaglini, Marco, Valerio Leone Sciabolazza, and Eleonora Patacchini. 2020. "Effectiveness of Connected Legislators." *American Journal of Political Science* 64(4): 739-756.

Baumgartner, Frank R., and Bryan D. Jones. 2010. *Agendas and Instability in American Politics, 2nd Edition*. Chicago: University of Chicago Press.

Berry, Christopher R., and Anthony Fowler. 2018. "Congressional Committees, Legislative Influence, and the Hegemony of Chairs." *Journal of Public Economics*. 158(1): 1-11.

Black, Duncan. 1948. "On the Rationale of Group Decision-Making." *Journal of Political Economy*. 56(1): 23-34.

Casas, Andreu, Matthew J. Denny, and John Wilkerson. 2020. "More Effective Than We Thought: Accounting for Legislative Hitchhikers Reveals a More Inclusive and Productive Lawmaking Process." *American Journal of Political Science* 64(1): 5-18.

Chiou, Fang-Yi, and Max Goplerud. Forthcoming. "Effective Lawmaking Across Congressional Eras." *Journal of Politics*.

Cox, Gary W., and William C. Terry. 2008. Legislative Productivity in the 93rd-105th Congresses." *Legislative Studies Quarterly*. 33(4): 603-618.

Crosson, Jesse M., Geoffrey M. Lorenz, Craig Volden, and Alan E. Wiseman. 2020. "How Experienced Legislative Staff Contribute to Effective Lawmaking." In Drutman, Lee, Kevin Kosar, and Timothy LaPira (eds.) *Congress Overwhelmed: The Decline in Congressional Capacity and the Prospects for Reform*. Chicago: University of Chicago Press. 2020.

Curry, James M. 2015. *Legislating in the Dark: Information and Power in the House of Representatives*. Chicago: University of Chicago Press.

Eatough, Mandi, and Jessica Robinson Preece. Forthcoming. "Crediting Invisible Work: Congress and the Lawmaking Productivity Metric." *American Political Science Review*.

Fenno, Richard F., Jr. 1978. *Home Style: House Members in Their Districts*. Boston: Little, Brown and Company.

Frantzich, Stephen. 1979. “Who Makes Our Laws? The Legislative Effectiveness of Members of the U.S. Congress.” *Legislative Studies Quarterly* 4(3): 409-428.

Harbridge-Yong, Laurel, Craig Volden, and Alan E. Wiseman. 2023. “The Bipartisan Path to Effective Lawmaking.” *Journal of Politics* 85(3): 1048-1063.

Heberlig, Eric S., and Bruce A. Larson. 2022. “The Strategic Allocation of PAC Funds to Effective Legislators.” *Interest Groups & Advocacy*. 11(4): 466-492.

Jansa, Joshua M., Hansen, Eric R., and Virginia H. Gray. 2019. “Copy and Paste Lawmaking: Legislative Professionalism and Policy Reinvention in the States.” *American Politics Research.* 47(4): 739-767.

Kroeger, Mary. Working Book Manuscript. *Outsourcing Legislation: How Non-Legislators Write U.S. State Law.*

Mann, Thomas E., and Norman J. Ornstein. 2016. *It’s Even Worse Than it Looks: How the American Constitutional System Collided with the New Politics of Extremism*. New York: Basic Books.

Matthews, Donald R. 1960. *U.S. Senators and Their World*. Chapel Hill: University of North Carolina Press.

McCarty, Nolan, Keith T. Poole, and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches*. Cambridge, MA: MIT Press.

Montgomery, Jacob M., and Brendan Nyhan. 2017. “The Effects of Congressional Staff Networks in the U.S. House of Representatives.” *Journal of Politics*. 79(3): 745-761.

Reynolds, Molly E., and Peter C. Hanson. 2023. “Just How Unorthodox? Assessing Lawmaking on Omnibus Spending Bills. *The Forum*. 21(2): 213-238.

Sinclair, Barbara L. 2016. *Unorthodox Lawmaking: New Legislative Processes in the U.S. Congress*. Washington, DC: CQ Press.

Theriault, Sean M. 2008. *Party Polarization in Congress*. New York: Cambridge University Press.

Volden, Craig, and Alan E. Wiseman. 2011. “Breaking Gridlock: The Determinants of Health Policy Change in Congress.” *Journal of Health Politics, Policy, and Law*. 36(2): 227-264.

Volden, Craig, and Alan E. Wiseman. 2014. *Legislative Effectiveness in the United States Congress*. New York: Cambridge University Press.

Volden, Craig, and Alan E. Wiseman. 2018. “Legislative Effectiveness in the United States Senate.” *Journal of Politics* 80(2): 731-749.

Volden, Craig, and Alan E. Wiseman. Forthcoming. “The Nexus of Lawmaking Effectiveness in Congress in Polarized Times.” In Dodd, Lawrence, Bruce I. Oppenheimer, C. Lawrence Evans, and Ruth Bloch Rubin (Eds.). *Congress Reconsidered, 13th Edition*.

Volden, Craig, Alan E. Wiseman, and Dana E. Wittmer. 2013. “When Are Women More Effective Lawmakers than Men?” *American Journal of Political Science* 57(2): 326-341.

Wilkerson, John, Smith, David, and Nicholas Stramp. 2015. “Tracing the Flow of Policy Ideas in Legislatures: A Text Reuse Approach.” *American Journal of Political Science* 59(4): 943-956.

Appendix Table 1a: Descriptive Statistics for House

Variable	Description	Mean	Std. Dev.
Embedded Bills	Total number of Embedded Bills	0.395	0.808
LES	Legislative Effectiveness Score, described in text	1.000	1.409
LES 2.0	Legislative Effectiveness Score 2.0, described in text	1.000	1.291
Majority Party	1 = Majority Party Member; 0 = otherwise	0.536	0.498
Committee Chair	1 = Committee chair; 0 = otherwise	0.048	0.214
Subcommittee Chair	1 = Subcommittee chair; 0 = otherwise	0.212	0.409
Majority-Party Leadership	1 = Majority Party Leader as identified in *Almanac of American Politics*; 0 = otherwise	0.023	0.149
Minority-Party Leadership	1 = Minority Party Leader as identified in *Almanac of American Politics*; 0 = otherwise	0.022	0.146
Speaker	1 = Speaker of the House; 0 = otherwise	0.002	0.049
Power Committee	1 = if Representative sits on Appropriations, Ways & Means, or Rules committee; 0 = otherwise	0.251	0.434
State Legislative Experience	1 = Served in state legislature; 0 = otherwise	0.505	0.500
State Legislature × Professionalism	State legislative service times professionalism of state legislature upon entering Congress	0.150	0.189
Distance from Median	Absolute distance from Representative's first-dimension DW-NOMINATE Score to that of floor median	0.395	0.236
Majority-Party Women	1 = Woman in majority party; 0 = otherwise	0.084	0.277
Minority-Party Women	1 = Woman in minority party; 0 = otherwise	0.088	0.283
Women	1 = Woman; 0 = otherwise	0.171	0.377
Seniority	Count of number of 2-year Congresses that Representative served in	5.355	4.217
African American	1 = Representative is African American; 0 = otherwise	0.100	0.300
Latino	1 = Representative is Latino/a; 0 = otherwise	0.061	0.240
Delegation Size	Size of Representative's Congressional Delegation	18.943	15.344
Vote Share	Percent vote share in most recent election	66.987	13.018
Vote Share^2	Square of Vote Share variable	4657.516	1926.326

Sources: *Almanac of American Politics*, various years; Volden and Wiseman (2014); Volden and Wiseman (2018); www.thelawmakers.org; www.voteview.com unless otherwise noted.

Appendix Table 1b: Descriptive Statistics for Senate

Variable	Description	Mean	Std. Dev.
Embedded Bills	Total number of Embedded Bills	1.001	1.452
LES	Legislative Effectiveness Score, described in text	1.000	0.962
LES 2.0	Legislative Effectiveness Score 2.0, described in text	1.000	0.874
Majority Party	1 = Majority Party Member; 0 = otherwise	0.538	0.499
Committee Chair	1 = Committee chair; 0 = otherwise	0.174	0.379
Subcommittee Chair	1 = Subcommittee chair; 0 = otherwise	6.437	4.927
Majority-Party Leadership	1 = Majority Party Leader as identified in *Almanac of American Politics*; 0 = otherwise	0.060	0.238
Minority-Party Leadership	1 = Minority Party Leader as identified in *Almanac of American Politics*; 0 = otherwise	0.056	0.230
Power Committee	1 = if Senator sits on Appropriations, Armed Services, Finance, or Rules & Administration committee; 0 = otherwise	0.755	0.430
State Legislative Experience	1 = Served in state legislature; 0 = otherwise	0.417	0.493
State Legislature × Professionalism	State legislative service times professionalism of state legislature upon entering Congress	0.083	0.119
Distance from Median	Absolute distance from Senator's first-dimension DW-NOMINATE Score to that of floor median	0.356	0.203
Majority-Party Women	1 = Woman in majority party; 0 = otherwise	0.079	0.269
Minority-Party Women	1 = Woman in minority party; 0 = otherwise	0.077	0.266
Women	1 = Woman; 0 = otherwise	0.155	0.362
Seniority	Count of number of 2-year Congresses that Senator served in	6.437	4.927
African American	1 = Senator is African American; 0 = otherwise	0.014	0.118
Latino	1 = Senator is Latino/a; 0 = otherwise	0.015	0.121
Delegation Size	Size of Senator's Congressional Delegation	8.728	9.516
Vote Share	Percent vote share in most recent election	59.382	8.905
Vote Share^2	Square of Vote Share variable	3604.966	1164.889

Sources: *Almanac of American Politics*, various years; Volden and Wiseman (2014); Volden and Wiseman (2018); www.thelawmakers.org; www.voteview.com unless otherwise noted.