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Signals from the Hill: Policy Content Scores as a Measure of Legislative Constraint

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Abstract

Legislators employ policy tools to ensure downstream actors comply with their policy goals. While existing scholarship has identified a multitude of tools that legislators can use to constrain downstream actors when drafting legislation, we currently lack a systematic way to measure their use. Given the extensive role that these actors play in the policymaking process, this limits our understanding of how Congress shapes our laws. I develop a new method to assess and measure variation in the content of legislation in the U.S. House of Representatives. I use this approach to code 13,770 bills that were introduced between 2005-2012 and create bill level policy content scores. I argue that these scores can be used to shed light on important questions related to institutions, elite behavior, and lawmaking. Finally, I demonstrate the utility of these scores through an application of the measure to examine two competing hypotheses about policymaking in committees.

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1 Introduction

Writing and passing legislation is a critically important first step in policymaking. As Kingdon (1984) notes, "the content of the ideas themselves, far from being mere smokescreens or rationalizations, are integral parts of decisionmaking in and around government" (131). In other words, how legislation is written, and specifically the policy tools used when drafting policy, play an integral role in the policymaking process and are central to our understanding of how Congress fulfills its Constitutional duty as the sole legislating authority.

The textbook Congress depicts a system by which legislators pass a law and the executive branch interprets, implements, and in some cases, enforces it. Furthermore, execution is dependent on other actors beyond agencies, including state and local officials, private companies, the courts, and individual citizens. What Congress does, then, is write the blueprint which sets the rules of the road for how the policymaking process will continue, shaping the behavior of downstream actors and determining, at least in part, a legislature's ability to achieve its policy goals (Huber and Shipan 2002).

One example of how policy tools affect policy outcomes is illustrated in the Voting Rights Act of 1965 (VRA). In order to achieve its overarching goal to end racial discrimination in voting and ensure enfranchisement for all Americans, the VRA employs a wide range of tactics meant to target specific issues that citizens encounter (Whitaker 2015). Sections 203 and 4(f)(4), for example, prescribe language assistance requirements for certain covered jurisdictions in the U.S. Within these provisions Congress delegates implementation to state and local election authorities and enforcement is triggered most often when noncompliance is reported or federal election observers are present. Section 5, however, contains language that automatically triggers preclearance, in certain jurisdictions, from the Department of Justice before any changes to electoral laws can be implemented.[1]

These sections employ different policy tools and affect the behavior of downstream actors in different ways. Scholars find that the language assistance provisions are unevenly interpreted and implemented (Marschall and Rutherford 2016). The preclearance written into Section 5, on the other hand, ensure almost completely compliance by downstream political actors. Covered jurisdictions

1. Prior to the Supreme Court decision in *Shelby County* v. *Holder*, 2013.

cannot as easily get away with violating the VRA because compliance is not contingent on the vigilance of citizens. The consequences of these policy decisions written into the VRA stretch beyond the borders of covered jurisdictions. Election laws affect who votes, who gets elected, and the subsequent policy that gets made (Hopkins 2011; Schuit and Rogowski 2017). The impact is felt nation-wide.

Despite the importance of these policy tools in helping to shape the behavior of downstream actors, political scientists have yet to develop a method for assessing a broad range of policy tools across both time and issue area. Consequently, many important questions related to policymaking in a separation-of-powers system and representation remain unstudied.

There are currently two main ways that political scientists discuss and identify the content of legislation– bill length and topic.[2] Within research on delegation and discretion, the most common proxy for content is length (i.e., word counts, Huber and Shipan 2002; number of pages Maltzman and Shipan 2008). This type of measure is appealing for a number of reasons including that it can be broadly applied and the underlying logic, that more words equals less discretion, is easy to follow.

This simplicity, however, also limits the types of questions we can answer regarding bill content. Take, for example, two legislators who each introduce a bill on sexual assault in the military. Legislator A writes a bill using 1,000 words that creates an advisory group, lays out its structure, and mandates a study of, and report on, the prevalence of the issue. Legislator B's bill, on the other hand, sets up reporting and adjudication processes for victims, punishments for the guilty, and requires data collection and biannual reporting of complaints, prosecutions, and outcomes– also using 1,000 words. These bills set out drastically different requirements for downstream political actors, yet when using a measure of word counts alone, both bills score equally. Unless we assess the policy tools used, these substantive differences are missed.

The second common proxy for bill content is bill topic/issue. When using bill topic as a proxy for content, scholars often place legislation into two or more issue categories and use them to look for

2. While these are most common, there is a growing literature in this area. For instance, Wittmer and Bouché (2013) assess the content, not topic, of human trafficking laws. See also Farhang and Yaver (2016) for regulatory commands, and Carpenter et al. (2012) for use of deadlines. Finally, there is a growing literature on policy dispersal (e.g., Wilkerson, Smith, and Stramp 2015) and ideological orientation (Caughey and Warshaw 2016) which use bill text to measure policy content, but with fundamentally different research goals.

patterns that associate the issues with bill (co)sponsorships by legislators with the characteristics of interest (e.g., Bratton and Haynie 1999). While this research has made great strides in illuminating patterns in legislator behavior and agenda setting (i.e., what issues legislators *prioritize*), we are still left with questions pertaining to the *policy solutions* (or *policy preferences*) present within those bills. Turning back to the hypothetical example, topic still does not identify the policy differences between the bills. Even if we use topic codes that identify bills related to issues of military sexual assault specifically, both bills still fit that criterion. Again, it is only through a more fine-grained assessment of policy tool usage that we can uncover the differences between these bills.

Given these limitations, I develop and test a measure of content by identifying and recording the presence (or absence) of over thirty different policy tools that legislators write into the bills they introduce. Research shows that legislators employ three categories of tool types: punishments, incentives, and oversight, in order to shape the behavior of downstream actors (e.g., McCubbins 1985; McCubbins, Noll, and Weingast 1987, 1989). Using bills introduced in the U.S. House of Representatives, I create a dataset that tallies a count of what I refer to collectively as "policy content," illuminating the diversity of policy tools contained in each bill. Policy content scores (PCS), then, provide insight into how MCs can write legislation in a way that induces and forces downstream political actors to comply with the legislator's intent.[3] As I detail in this paper, by using this measure we can start to differentiate between bills based on the policy tools they employ yielding new research opportunities.

In the next section I review the long-standing literatures related to statutory control and policy design. I then propose a coding scheme for systematically identifying the policy tools that members employ in the bills they write and implement this approach to code 13,770 bills introduced in the House between 2005-2012. With this new data I create bill level PCS and validate the measure. Finally, I highlight multiple ways that this measure can be used to test important questions in political science and illustrate on application of the measure by testing two competing hypotheses regarding the

3. Although MCs are not typically writing the legislation they introduce, scholars have long acknowledged that the behaviors we observe (e.g., roll-call votes, co-sponsorship) come from the members' 'enterprise' (Butler, Karpowitz, and Pope 2012; Salisbury and Shepsle 1981).

relationship between policymaking and committee membership. I provide evidence that lawmaking and oversight are complementary functions of congressional committees.

2 Tools of Legislative Control

Congressional scholars studying lawmaking often focus on how legislators use their power to overcome principal-agent problems and thwart bureaucratic drift. The basic claim asserts, that even though some level of delegation to the executive is almost always necessary (McCann and Shipan, forthcoming), MCs can, when necessary, and with varying degrees of success, keep downstream actors from straying too far from the legislature's original intent. One way to exert control is to try to shape the behavior of downstream political actors *ex ante*– (i.e., *before* they act; McCubbins, Noll, and Weingast 1987, 1989).

Scholars may agree on the point in the policymaking process at which *ex ante* controls are invoked, but not always what they are or how to categorize them. In general, what most scholars describe are types of policy tools (often called procedures) that MCs write into legislation that place triggers, hurdles, and/or roadblocks in the path of other political actors (usually bureaucrats) in order to structure their decision-making processes. These tools are meant to steer bureaucrats in the direction of the legislators' preferences and, in case that does not work, allow time for them or other watchdogs to find and fix any bureaucratic drift that may be happening.

Scholars find that MCs can attempt *ex ante* controls by writing detailed policy prescriptions (Huber and Shipan 2002), including deadlines (Carpenter et al. 2012), stipulating how administrative agencies are organized and structured (Wood and Bohte 2004), by creating federal advisory committees (Howlett 2010), and by attaching strings like limitation riders (MacDonald 2010) to policy before it becomes law. Other types of controls discussed include administrative procedures or statutory provisions (Bawn 1997) like deck-stacking (McCubbins, Noll, and Weingast 1987, 1989) and mandating public notifications and participation requirements (Balla 1998). Legislation can also contain regulatory incentive based instruments like taxes or grants (Grabosky 1995; Vedung 1998). Sanctions can be used (or threatened) including removal from office (Shotts and Wiseman 2010) or prosecution, budget cuts, or public humiliation through the use of oversight and monitoring. In less extreme cases, legislators can work to

undermine the career objectives of downstream political actors, preventing them from achieving their goals. Additionally, MCs can, with great effort, sanction downstream actors by legislating around their actions (McCubbins, Noll, and Weingast 1987).

Ex post controls are almost always seen as a mechanism of oversight, but oversight is not always discussed as an explicitly *ex post* control. Although, McCubbins, Noll, and Weingast (1987) refer to oversight as *ex post*, other scholars leave open the possibility for oversight to happen at least while bureaucrats are acting (Aberbach 2001), or even at any stage of the policy making process (Foreman 1988; McCubbins and Schwartz 1984). Importantly, even when discussing oversight as a strictly *ex post* control, scholars also recognize that triggers for oversight, like fire alarms, can be written into the legislation (Bawn 1995; McCubbins and Schwartz 1984) and thus oversight tools can also be *ex ante* in some way.[4]

No matter how they are categorized, labeled, or what umbrella of research they fall under, empirical observations of tool usage and theories of statutory control are limited. Most systematic analyses of tools are isolated to research on a specific issue area, program, or policy tool (Howlett 2010; Salamon 2002), rather than looking at combined patterns of policy tool use in a broad, policy neutral way (but see Epstein and O'Halloran 1999).

Collectively, the scholarship highlighted in this section points to three broad categories of policy tools: punishments, incentives, and oversight. These tools are the indicators of policy content that can be found in the text of legislation that MCs introduce at the start of the policymaking process. There is no one "magic bullet" provision that can be written into a bill that solves all MC problems (Grabosky 1995). Instead, MCs use varying levels and combinations of policy tools in each bill they draft. I argue that these differences clarify how MCs participate in the policymaking process, shedding new light on questions of legislator interest (Hall 1996), effort (Wawro 2001), effectiveness (Volden and Wiseman 2014), or even how MCs use the policymaking process in order to achieve their various goals (Fenno 1973).

4. While a full review is not possible here, scholars in public policy have also been discussing many of the same policy tools, but focusing more on why, and under what circumstances tools are used, how they are combined, and what impact they have on policy outcomes (see Capano and Howlett (2020) for an overview).

3 A Policy Tools Approach

Following the rich literature from across the political and policy sciences, I use a policy tools approach to better understand the content of legislation. In general, "policy [tools] refer to the different means available to government to attempt to achieve some goal" (Woodside 1998, 162).[5] More specifically, these tools contain instructions for downstream actors who interpret, implement, enforce, and follow policy (e.g., Huber and Shipan 2002). Empirical analysis of tool usage is still difficult, however, because of the complexity of the data, especially the variation in how bills are constructed.

The House Legislative Counsel provides both help with writing legislation and a drafting style guide. There is no requirement, however, that MCs use these services. As such, MCs often introduce legislation with varying degrees of adherence to best practices resulting in a lack of consistent and reliable bill structure. Consequently, we cannot reliably use the structure of a bill, or its component section or paragraph headings, as a proxy for the policy tools contained within.

I overcome this problem is by searching for key words and phrases that identify policy tools across the full text of each bill. Using this approach the underlying structure becomes irrelevant. It does not matter, for example, if a legislator combines, as recommended, all their new definitions in a single section labeled 'Definitions' as long as we look for identifiers of the tool (the combination of the words *the* and *term* in sequential order), we can find it either way.

This approach has several desirable qualities. First, by using a policy tools approach to create a score derived from bill text, this measure contains more detailed information about the policy content than using word counts or topics. Additionally, because these tools are the components that make up policy, this approach corresponds closely with the realities of government and politics. Thus, we can expect that the tools outlined in the literature will be present in the legislation and that we can make meaningful connections between the patterns we observe and the policymaking process.

Second, measuring policy content at the bill level offers a more comprehensive view of legislator behavior in two ways. By looking at bill introductions, I can attribute the content to the lawmaker who

5. The original quote used the term policy *instruments*, but Woodside (1998) acknowledges that while the terminology for the study can vary, including using policy *tools*, the concept is the same. I use policy tools as a catch-all for the ways that different disciplines describe roughly the same phenomena.

sponsored the bill.[6] This allows us to answer questions not only related to government composition (e.g., Epstein and O'Halloran 1999; Huber and Shipan 2002), but also based on chamber position (i.e., majority party status, committee membership) and legislator specific characteristics (such as gender, race/ethnicity, party). Additionally, by looking at bill introductions rather than laws (or even Mayhew's list of important legislation; Epstein and O'Halloran 1999; Farhang and Yaver 2016), we can gain insight into the everyday lawmaking activities of MCs. Most bills do not become law yet legislators continue to sponsor legislation on a regular basis. The PCS provides valuable insight into how Congress works to fulfill its Constitutional mandate on a day-to-day basis.

Lastly, this measure is flexible. Work that looks more closely at bill text and policy tools (e.g., Huber and Shipan 2002; VanSickle-Ward 2014) is often issue specific, making replication difficult. A tools-based approach allows for a new measure that can be applied widely. It can be used to derive scores for bills at any point in the policymaking process, in the House or Senate, and in both earlier and more recent congresses. Furthermore, because the measure is grounded in research that spans beyond Congress, it can be applied to state level legislation and beyond the U.S.

4 A Measure of Policy Content

My measure builds on existing scholarship but it differs in purpose. Instead of focusing on language specificity (e.g., VanSickle-Ward 2014) or measuring directly how much discretion MCs give to downstream actors (e.g., Epstein and O'Halloran 1999), I focus on the patterns of tools used by MCs (and their staffs) in the House to gain leverage on the question, *How does government make policy*? Specifically, this measure allows us to investigate how MCs try to control a wide range of political actors in American society across numerous issue areas. VanSickle-Ward 2014).

6. While we cannot know that the text represents a MC's true policy preferences, it is the closest observable approximation (Laver and Garry 2000). Additionally, it is a common assumption in the existing literature. Schiller (1995) notes, for example, "bill sponsorship should reflect [a legislator's] best assessment of the effectiveness of bills to accomplish their goals" (187).

4.1 Bill Introductions

I begin with the Congressional Bills Project (CBP) (Adler and Wilkerson 2005-2012) in order to identify all the public lawmaking bills (H.R.) introduced in the 109th-112th Congresses (2005-2012). This data matches bills with several important descriptive characteristics as well as information on committee referral and membership. By looking at the 109-112th Congresses, I ensure variation in the configuration of government and partisan control including variation on who is president (George W. Bush and Barack Obama), which party is in the executive (Republican and Democrat), and in the majority in the House (109th and 112th Republican, 110th and 111th Democrat), as well as the division of government (unified in the 109th and 111th, divided in the 110th and 112th). Over this time period, the corpus of legislation contains 26,715 bills.

Several types of bills are excluded from the data.[7] One issue that arises with bill introductions, but not laws, is the prevalence of reintroductions. MCs often draft a bill in one Congress and reintroduce it in following sessions if it fails to become law. This takes little effort and does not provide accurate information about how MCs allocate their resources towards policymaking outside the context in which they first introduced the bill. As such, I identify the first time a bill is introduce and remove all subsequent introductions.

Next, I excluded any bill where the primary purpose is to award a medal, create a holiday, or name a federal entity. These types of bills often use form language and take little effort for a legislator to write and introduce. Additionally, if they become law, these bills would not meaningfully modify the behavior of, or require interpretation or regulation from, downstream actors. Finally, I omit all appropriations, omnibus, and trade bills because the bill writing process is meaningfully different in those instances. The final corpus of legislation includes 13,770 bills.[8]

Table 1: Indicators of Policy Content

Subcategory	Tool	Example
	Punishments Categories & Tools	
Civil & Criminal Sanctions, Fines	Civil Sanctions	"civil monetary penalty"
	Criminal Sanctions	"shall be punished by imprisonment"
	Fines	"be subject to a fine"
	General Sanctions	"a penalty shall be assessed for a violation of"
Removal of Resources	–	"shall cancel or nullify a contract"
	Incentives Categories & Tools	
Government Monetary Aid	Vouchers	"may receive vouchers for"
	Rebates	"shall establish a rebate"
	Subsidies	"must provide subsidies for"
	Tax Credits	*earned income tax credit*
	Tax Incentives	*tax deductions*
	Grants & Other Federal Aid	"provide 10 grants per region"; *block grants*
	Gov't Loans & Guarantees	*government lending and loan guarantees*
General Incentives	–	"may provide incentive payments for"
Disincentives	*Fees/Charges*	"collect fees related to"; *user charge*
	Excise (vice/sin) Tax	"an excise tax on"; *alcohol tax*
	Oversight Categories & Tools	
Timing Instructions	General Time Constraints	"not less often than annually"
	Sunset/Reauthorization	"shall cease to have an effect on"
	Retroactive Implementation	"as if such paragraph had come in effect on"
Deck Stacking Provisions	Consultation Requirements	"after consulting with"
	Public Hearings & Comments	"notice and opportunity for a hearing"
	Exemptions & Exceptions	"be subject to the exceptions detailed"
	Appeals Procedure	"such appeals process shall include"
Information Gathering	Reporting Requirements	"shall publish a report including"
	Studies & Data Collection	"shall conduct a comprehensive study regarding"
Policy Details	Definitions	"the term includes"
	Regulatory Commands	"shall not be included in"
	Delegation & Authorization	"may be determined by the Secretary"
	Interpretation Outlined	"Nothing in this subsection shall be construed to"
Setting Limits	Spending Limits	"may not exceed 15 percent"
	Sanctions Limited	"incarcerated not more than 25 years"
	General Restrictions	"for the sole purpose of"
Entitites	Entity Establishment	"There is hereby established an advisory board"
	Organization & Structure	"Each candidate shall have demonstrated ability in"
General Oversight	–	"for the oversight of"

Notes: Italicized tools indicate that the category was coded entirely through CRS tags. Underlined and italicized indicates a mixture of handcoding and CRS tools to create the category. Examples of CRS tags are italicized.

4.2 Bill Text as Data: Policy Content

Recall that legislators use policy tools in order to achieve some policy goal. As described below, the tools of incentives and punishments, in large part, come directly from research on regulation and policy design and fit this definition nicely. For instance, there is a clear link between enacting policy that includes a sin tax for cigarettes with the objective of decreasing smoking. The tools listed under the category of oversight, however, do not always have as clear of a link between them and the policy objective. But they do help clarify the path between policy and its intended consequences, which fits within the definition. If Congress, for example, wishes to decrease the amount of pollution in the air but does not know how to do it, they delegate to the Environmental Protection Agency (EPA) the task of creating industry standards. In this case, delegation is the tool through which the EPA works to address the problem. Most importantly, however, all the tools are meant to induce certain behaviors in downstream actors should the bill become law.[9]

Punishments The first category of policy tools, punishments, includes *any language in legislation that signals to an actor that they will face repercussions for violations or noncompliance with the law*. As shown at the top of table 1, punishments can be phrased negatively- banning, prohibiting, or forbidding- certain events or actions, or in affirmative terms- proposing what has to be done- with inaction prompting penalties (see Brigham and Brown 1980; Howlett 2010; Vedung 1998). These tools typically raise the cost of action beyond the proportional value of the behavior itself (Balch 1980; Schneider and Ingram 1990), and are seen as highly coercive because the decision on how to behave rests with the government, rather than the individual (Brigham and Brown 1980).

Punishment tools are more easily applied to non-governmental actors. Noncompliance with congressional intent is rarely subject to criminal or civil sanctions, or even fines. Therefore, the most common *ex ante* tool that legislators have to punish governmental actors is the removal of resources (like funding, jurisdiction over an issue, or even impeachment, etc.).

7. See Appendix B pages A8-11 for a detailed accounting of how I reduced the data.
8. See Appendix C, tables C.1 and C.2 pages A12-13, for detailed descriptive information about the data.
9. See Appendix A.2 pages A2-6 for more information on each tool including definitions of each subcategory and tool.

Incentives The second category, incentives, includes *any language that manipulates the costs or benefits associated with certain behaviors.* As outlined in the middle section of table 1, these tools make taking action cheaper (or more expensive) in terms of resources (i.e., money, time, and effort; Vedung 1998). Unlike punishments, however, they give the target population leeway to make their own decisions on how to behave and may be a more popular form of governmental control (Grabosky 1995; Howlett 2010). Legislators use these types of tools when their desired outcomes comport with the preferences of those being induced, when the possibility of high levels of noncompliance is not an issue (Schneider and Ingram 1990), and/or when people would otherwise not be inclined to alter their behavior absent an incentive (Grabosky 1995).

Oversight The final category, oversight, includes *any language in the legislation that outlines the use of procedures and structures that provide for the possibility of ongoing review of the behavior of target actors.*[10] In effect, the oversight tools are part of a bigger framework of government action that works to keep downstream actors in line. Scholars posit that legislators who are risk averse have an incentive to constrain the behavior of downstream actors *ex ante* rather than trying to fix errors that already occurred (McCubbins 1985; McCubbins, Noll, and Weingast 1989). We expect to see these tools used frequently because they can be applied to a broad range of policy issues and are, in theory, cheap and easy to use (Huber and Shipan 2002).

The bottom section of table 1 lists the different oversight tool types included in the measure of policy content. Unlike the first two categories in the typology, oversight is typically limited to modifying the behavior of government employees (including contractors) with direct monitoring of nongovernmental actors occurring infrequently.

10. This is a broad definition, similar to Foreman (1988) who contends that oversight is "an essentially commonsense synonym for *supervision*. With either term I refer to two interlocking congressional processes: the effort to *gather information* about what agencies are doing and to *dictate* or *signal to* agencies regarding the preferred behavior or policy" (13), emphasis in original.

4.3 Coding Policy Tools

Once I compiled the population of tools indicated by academic research and lawmaking handbooks, I created a coding scheme which I applied to the text of the 13,770 bills in my dataset. The final dataset was created using a semi-automated series of regular expression (regex) searches that allowed me to look for key words and phrases, in context, that indicate the range of policy tools of punishments, incentives, and oversight.[11] For each bill, I record which policy tool types appear at least once and tally the results. When combined, a bill could therefore contain as few as zero or as many as 12 policy tool types, which are the indicators of policy content.[12]

Table 2: Summary Statistics, Tool Types

Variable	Mean	Std. Dev.	Min	Max
Punishment Tools				
Civil & Criminal Sanctions (incl. Fines)	0.142	0.350	0	1
Removal of Resources	0.109	0.312	0	1
Incentive Tools				
Gov't Monetary Aid	0.301	0.459	0	1
General Incentives	0.073	0.26	0	1
Disincentives	0.097	0.296	0	1
Oversight Tools				
Timing Instructions	0.727	0.446	0	1
Deck Stacking Provisions	0.562	0.496	0	1
Information Gathering	0.387	.0487	0	1
Policy Details	0.879	0.326	0	1
Setting Limits	0.618	0.486	0	1
Entity: Establishment, Organization & Structure	0.169	0.374	0	1
General Oversight	0.113	0.317	0	1

Note: *N*=13,770. Unit of Analysis is bill.

Table 2 contains the summary statistics for the 12 policy tool types. Overall, consistent with expectation from the scholarship, oversight tools exist in the data at much higher rates than incentives and punishments. Outside of the oversight tools, government monetary aid has the highest prevalence

11. While the regex searches coded most of the data, I did also incorporate some of the Congressional Research Service's detailed policy tags to help identify some of the more difficult tools. I coded each of the tools included in the subcategories outlined. Many of the individual tools, however, have very few observations so I aggregated them into a set of 12 tool types.

12. Appendix A.1 page A1 provides a detailed discussion of the codebook creation.

rate in the data, which follows the logic that incentives are relatively easy to include and citizens tend to like them. Punishments, the hardest category to include, is the least prevalent overarching category of tools in the data.

Figure 1: Proportion of Tools in Bill Text by Category

Figure 1 shows the proportion of tools found in the bill text for each category of policy tools. Panel A clearly shows how infrequent the use of punishment tools is in this dataset. The first bar shows that approximately 79.7% of the bills (*N*= 10,969) contain zero punishment tools. In the remaining bills, roughly 3/4ths (15.5%) have one out of the two tools and 4.5% have both. Moving to Panel B we can see that there are more incentives in the data, but 61.4% of the bills (*N*=8,457) still contain zero incentive tools and there is a steady decrease in the percent as the number of incentive tool types increases, leaving only 1.3% of the bills (*N*= 172) containing all four different tools/tool categories. Lastly, Panel C of figure 1 shows that the oversight tools are used most often, with a median of four tools (average = 3.46). Only 5.2% of the bills (*N*=712) have zero oversight tools and 5.5% have all seven different oversight

tool types (N=762). Added together, 94.8% of the bills in the dataset include at least one oversight tool leaving 549 (4.1%) without any tools.[13]

Overall, this new dataset of policy tools looks like what we expect given the existing literature on policy design and delegation and discretion. Put simply, the results shown in table 2 and figure 1 provide evidence that my coding scheme, as applied, provides an accurate gauge of the concept of policy content.

4.4 Policy Content Score

Having defined the concept of policy content, compiled the indicators (policy tools), and coded for them in the legislation, the next step is to combine these indicators into an overall measure. The standard statistical tool employed to combine such a measure is factor analysis. Results from a polychoric factor analysis yield a single factor solution with all 12 policy tools types contributing to one underlying latent construct of policy tool usage.[14] As shown in figure 2, the eigenvalue of the first factor was much larger than any of the other factors, and the only factor with an eigenvalue greater than one, indicating a single dimension.[15] Additionally, both the Bartlett test of sphericity and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, reported at the bottom of figure 2, show significant results, bolstering the claim that one factor should be used.

Given the results of the factor analysis, I constructed a factor-based score where each of the 12 policy tools are counted equally and summed together (Pett, Lackey, and Sullivan 2003).[16] Therefore, the measure of policy content runs from zero to 12, with zero signifying that a bill has no indicators of policy content up to 12 when all policy tools are present. The distribution of the PCS is illustrated

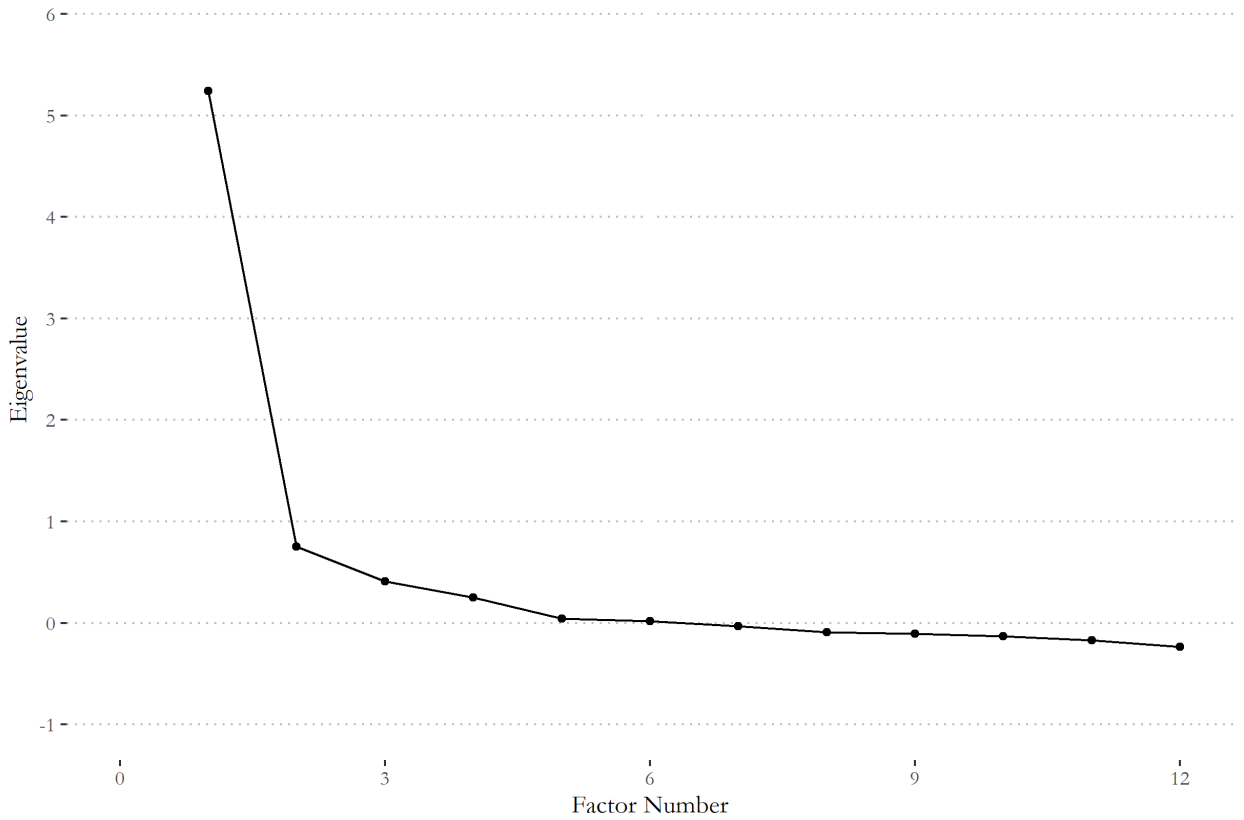
13. The bills that contain zero tools are all written in the "bite and cut" format, and the average substantive word count of the bills is roughly 115 words compared to the average of the full dataset, which is around 1,771.

14. I performed the factor analysis using a polychoric correlation matrix, which is the appropriate form of analysis given the binary indicators of policy tools presence in each bill (Holgado–Tello et al. 2010).

15. As a robustness check, I also re-estimated the factor analysis by first calculating a tetrachoric correlation matrix before applying the general factor analysis. I again found that the model yielded a single factor solution. See Appendix A.3 table A.1 (page A7) for the Factor Loadings.

16. In addition to the factor-based score, I run all my models using the factor score as a robustness check. The results hold. See Appendix E, table E.1 on page A15.

Figure 2: Eigenvalues from Factor Analysis



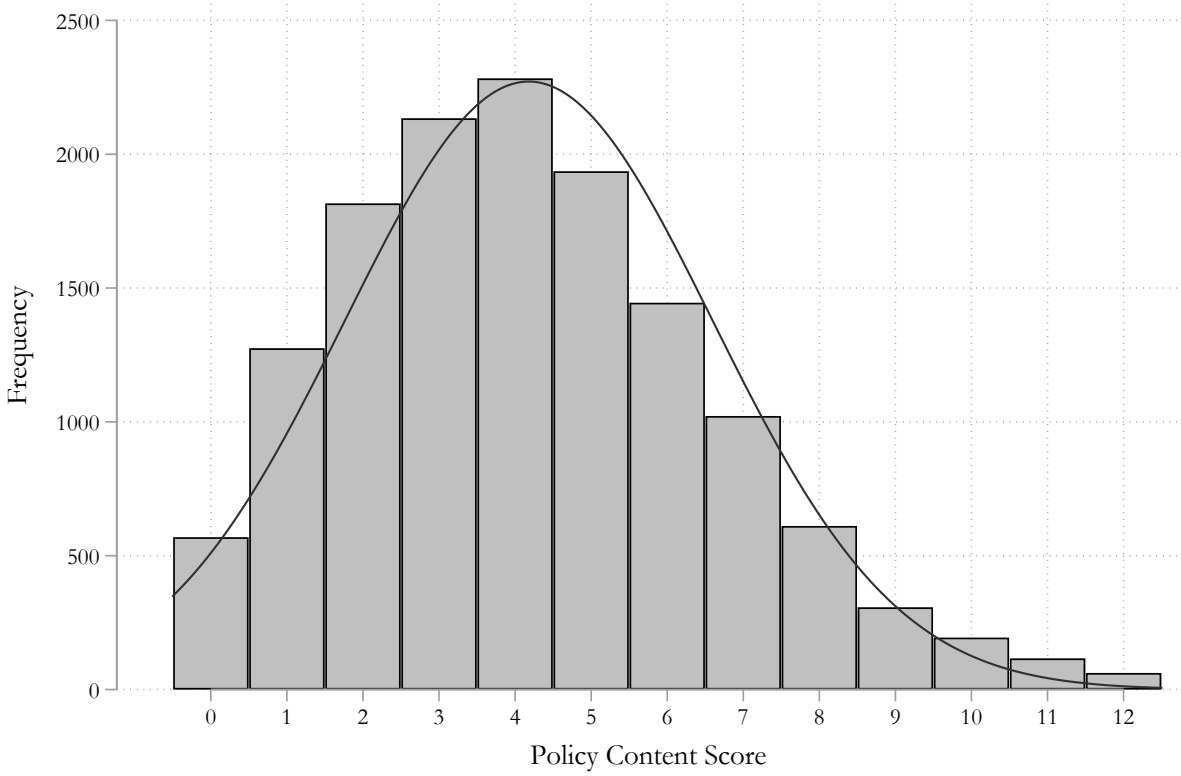
Notes: Bartlett test of sphericity is significant, $\chi^2(66)=23678.177$, $p<0.000$; Kaiser-Meyer-Oklin Measure of Sampling Adequacy = 0.837

in figure 3. Most bills had approximately four policy tools or fewer, with the distribution falling off gradually after that.

As discussed above, this measure has face validity. This is a necessary, but not sufficient, condition for establishing validity. I also assess construct validity in two ways. First, I examine the extent to which my measure is predictive of cosponsorship. Then I turn to an assessment of the relationship between my measure and word counts. Finally, I show that PCS correlates with legislator behavior in a way that is consistent with our *a priori* assumptions about participation in the policymaking process.

Cosponsorship is often used to infer things about legislator behavior, including effort (Wilson and Young 1997). As such, it should be positively associated with PCS (Campbell 1982). If, for example, a MC introduces a bill for symbolic reasons (e.g., credit-claiming, position-taking) she has

Figure 3: Histogram of the Policy Content Score

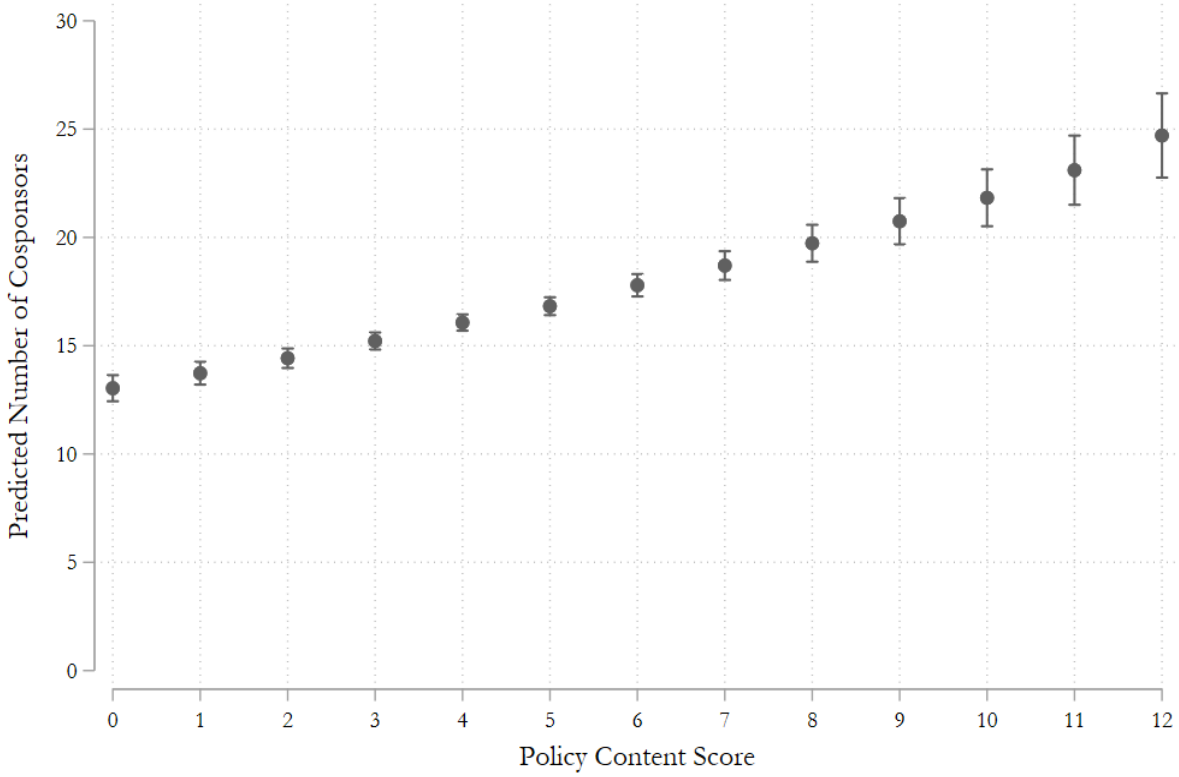


little incentive to write bills with high levels of PCS or to take the effort to find cosponsors. As they increase their effort when drafting legislation, MCs will likely also increase their effort to move their legislation forward, which includes finding cosponsors. Cosponsorship is provided in the CBP and, in my data, the number of cosponsors per bill runs from one to 432. The average number of cosponsors is 16.3 (SD = 32.2), but the median number is four. To assess the relationship I ran a simple bi-variate regression, for ease of interpretation I provide the plotted marginal effects in figure 4. As shown, there is a positive and significant association between the number of cosponsors and policy content ($p<0.001$).[17]

To further establish construct validity, I look at the relationship between policy content and word counts. Given that more words provide more space for tool usage, I expect there to be a positive

17. Given the many different incentives legislators have to sign on as cosponsors to a bill (e.g., it also helps with credit-claiming and position-taking or trading support with other members), it is a noisy measure and thus produces a hard test for validation. See Appendix D, table D.2 on page A14 for the statistical results.

Figure 4: Predicted Cosponsorship



relationship between word counts and policy content. A Spearman's correlation shows that there is a positive monotonic relationship between PCS and word counts (r_s = 0.8, n= 13,770, $p < 0.001$). As expected, the relationship is strong but not perfect. This reflects the differences between the measures. High word counts could mean that a legislator used several different tool types, resulting in high scores on both scales. Or, a high count could mean that a legislator used a single tool type multiple times in a bill, resulting in a low PCS.

I assess one final measure of validity by examining whether several institutional and member characteristics are associated with the use of more tools. We may expect, for example, that seniority would increase PCS because experience can help legislators overcome hurdles in the policymaking process. To examine this, I estimate a negative binomial regression that includes variables commonly associated with legislator influence and experience, factors that should enable legislators to increase their PCS when drafting bills. I include institutional design characteristics, like whether the lawmaker

Table 3: Elements of Policy Content

Variable	Incident Rate Ratio	Std. Err.
Institutional Characteristics		
Author in Majority Party	1.03**	0.01
Author Unified with Executive	1.03***	0.01
Author is Committee Chair/Ranking Member	1.03	0.02
Legislator Characteristics		
Author Seniority (in terms)	1.02***	0.00
Author Seniority^2	*1.00***	0.00
Author is a Former State Legislator	1.00	0.01
Author ran for Higher Office	*0.99*	0.02
Author is a Democrat	1.11***	0.01
Author is Female	1.02	0.01
Author is BIPOC	1.02	0.02
Constituency Characteristics		
Vote Share, Previous Election	1.02***	0.00
Vote Share^2	*1.00***	0.00
Log Likelihood	-29952.93	
R^2_{DEV}	0.14	
N	13,692	

Notes: Negative binomial regression estimates reported incident rate ratios with PCS as the DV. A control for word count & the number of bill authored were included in the model but suppressed in the table. Negative coefficients are in italics, some show 1.00 due to rounding. Overall Mean PCS = 4.18. *p<0.05, **p<0.01, ***p<0.001.

was in the majority party or has the same political affiliation as the president, as well as individual legislator characteristics, such as proxies for their experience (being a former state legislator and seniority, progressive ambition, and gender, race/ethnicity and party affiliation). Lastly, I include the share of the vote the MC won in the election prior to bill introduction. I report the incident rate ratios in table 3. Any coefficient above 1.00 indicates an increase in policy content while any below 1.00 shows a decrease.

As shown in table 3, many of the characteristics show a small, yet significant, association with policy content. We expect, for example, majority party status to positively impact policy content because majority party legislators are better suited to advance their bills through the policymaking process (Volden and Wiseman 2014; Wawro 2001). Similarly, seniority appears to matter but state legislative experience does not. This may reflect the diversity of experience that legislators gain at

the state level and the relatively short-lived advantage of such experience. The nonlinear effect of the seniority and seniority squared variables indicates that the legislators most likely to write bills with high PCS, on average, are not the newest or longest serving MCs. The same relationship exists for electoral vulnerability. These results align with other research on legislative behavior in the lawmaking process (e.g., Volden and Wiseman 2014).

The results in table 3 also raise intriguing questions. Literature on elected women, for example, provides strong evidence that men and women behave differently when it comes to proactive (e.g., Swers 2014) and backchannel (Lowande, Ritchie, and Lauterbach 2019) policymaking. Yet, gender does not appear to have an impact on policy content, generally speaking.[18] Party affiliation, on the other hand, is statistically significant. More research is needed to understand this result, but there may be reason to believe that a better understanding of policy content can help us test expectations about how, and under what conditions, partisanship, and a desire to change the status quo, impacts how policy is written in Congress.

5 Integrating Policy Content Scores into Political Science Research

The policy tools employed by Congress set the rules of the road for the rest of the policymaking process. Because this step is so critical and has consequences at every subsequent step, this new measure is useful for scholars of public policy, legislative studies, and elite behavior. Future work can apply this measure to a variety of research questions across subfields of political science. This is not limited to studying Congress, it also includes those who study the bureaucracy, courts, separation-of-powers, and federalism.

One important line of inquiry in research on delegation, discretion, and policymaking in Congress addresses legislative-executive relations, including the principal-agent problem and *ex ante* means of legislative control (e.g., Epstein and O'Halloran 1999). PCS can be used to further address big questions, such as, *When do legislators attempt to constrain downstream political actors?* This can help

18. This model does not, however, account for possible differences across the agendas of men and women, a key characteristic of much of this research.

address discrepancies in how divided government (e.g., Huber and Shipan 2002, VanSickle-Ward 2014) and trust (e.g., the ally, Lavertu and Weimer 2009, versus anti-ally principle, Palus and Yackee 2016) impact policymaking. Bringing in scholarship on agency ideology (e.g., Clinton et al. 2012) and the impact that agency independence has on legislator behavior (e.g., Volden 2002), we can test questions such as, *Are Republicans (Democrats) less (more) likely to delegate when writing policy under the jurisdiction of more liberal agencies?* and, *Do MCs delegate more to independent agencies under divided government?*

Legislator behavior scholars can use PCS to test conflicting hypotheses that stem from different theories of legislator goals and strategic allocation of resources. Broadly, this includes questions such as, *Under what circumstances do MCs use more policy content when introducing legislation?* (Fenno 1978). More specifically, PCS can be used to test questions related to the electoral connection (Wawro 2001), such as, *Are MCs who focus on changing the status quo through lawmaking more likely to win re-election?* Recently, scholars have been investigating the rise in messaging legislation, using PCS as a proxy, we can ask, *Are minority party legislators more likely to introduce messaging legislation?* (Lee 2016).

Similarly, because the PCS's are at the level of bill introductions we can test questions related to representation. One significant line of inquiry in this area is whether or not descriptive representation leads to substantive policy representation. The results presented in table 3 suggest that there are not gender differences in how legislators write bills in general, but gaining insight into policy content can more directly answer questions like, *Compared to men, do women write differently when they introduce bills related to women's issues?* Furthermore, we can ask questions related to other important characteristics such as a legislator's race/ethnicity. Scholarship on the social background of elected officials (e.g., class, Carnes 2012) has received considerably less attention. PCS can be used to help answer the question, *Do lawmakers from different class backgrounds behave differently in office?*

We can also combine the PCS with other existing measures to gain further leverage on several different questions. For example, *Do ex ante constraints help legislators realize their policy goals?*; *Are legislators who use high levels of policy content more likely to engage in backchannel follow up with agencies when their bills become law?* (e.g., Ritchie 2018); *How do effective lawmakers write legislation?* (Volden and

Wiseman 2014); and *Compared to 'ambitious entrepreneurs', do 'policy specialists' write bills with higher PCS?* (Bernhard and Sulkin 2018).

Finally, because the measure was constructed using a policy tools approach, future research can use the method to code different bill introductions (i.e., state level legislation, bills that originate in the Senate, or legislation in other countries), bills at different stages of policymaking process, and bills from different time periods. This further opens up the research possibilities. We could, for example, ask *Do legislators in states with professionalized legislatures write bills with higher levels of policy content?*; *How does policy content change over time?*; and *Does the impact of committee membership on policy content decrease in the Senate compared to the House?*

In the next section, I illustrate the usefulness of the PCS by addressing one of these questions. Specifically, I evaluate two competing explanations regarding the role that committee membership plays in policy formation. Do members use more policy content when drafting legislation within their committee's jurisdiction?

6 Application: *Ex Ante* Control and Committee Membership in the U.S. House of Representatives

Congressional committees serve at least two functions: 1) lawmaking, and 2) oversight (Oleszek et al. 2015). Some scholars see these functions as *competing*, where the resources spent lawmaking come at the expense of oversight. On the other hand, some view these functions as *complementary*. At the heart of both expectations is the idea of statutory control, who has the incentive and ability to include more control when drafting bills? As an indicator of a legislator's attempt to ensure their preferences are followed, PCS is a useful measure for adjudicating between these hypotheses. In this case, high scores can be interpreted as having higher levels of statutory control. Therefore, the results can provide insight into how members' goals, the institutional design of Congress, and strategic decisionmaking by MCs can impact the policymaking that happens in Congress.

Competing Functions Hypothesis Bawn (1997) posits the competing functions hypothesis directly. Using a formal model she lays out the logic of legislator bill writing behavior, noting "because it is much harder for a noncommittee member to conduct oversight ex post, she will be more inclined to spend resources to control the agency ex ante" (102). To test the resulting expectations she uses amendments from two bills to examine which Senators introduce language that aims to increase statutory control. Her findings support the expectation that noncommittee members prefer higher levels of control.

Research, especially work that suggests there is a zero-sum relationship between lawmaking and oversight (Reenock and Poggione 2004; Huber and Shipan 2002) and those who contend that oversight is likely a priority because it is a more visible behavior (Aberbach 2001) lends additional support for the hypothesis. Taken together, this body of research suggests that, when assessing the content of legislation, we expect the following:

> *Competing Functions Hypothesis:* Lawmakers who introduce legislation that gets referred to a committee of which they are *not* a member, will use more policy content (resulting in higher PCS) compared to authors on the committee.

Complementary Functions Hypothesis The complementary functions hypothesis suggests the opposite. This expectation stems from research that shows that committee membership provides MCs with specialized benefits that are not easily attained through other means. These benefits provide legislators with both the means and opportunity to write bills with higher PCS. Committee membership, for example, provides legislators with access to information which is necessary to draft non-messaging type legislation (Curry 2019) at a lower cost (Krehbiel 1992) , a division of labor that allows members to become specialists (Gilligan and Krehbiel 1997), and integration into policy networks (Fenno 1966, 1973). Importantly, committee membership also provides MCs with the benefits of oversight jurisdiction during *ex post* stages of the policymaking process (McCubbins, Noll, and Weingast 1987). Taken together, these benefits suggest that legislators can take advantage of their position to lower the cost of lawmaking by writing legislation that falls within their committee membership jurisdiction. In other words, MCs can spend less of their scarce resources while also maximizing their ability to shape the behavior of downstream political actors.

Complementary Functions Hypothesis: Lawmakers who introduce legislation that gets referred to a committee of which they *are* a member will use more policy content (resulting in higher PCS) compared to authors not on the committee.

6.1 Data, Methods, and Results

Using the new policy content dataset (n = 13,770 bills) I estimate a negative binomial regression where the dependent variable is the PCS.[19] Since the hypotheses concern legislator behavior tied to committee membership, I include an indicator variable for whether the bill was introduced by a member who sits on the committee the bill was referred to (i.e., there was a legislator-committee referral match). Because the unit of analysis is at the bill level, I also include controls for the number of words in the bill and, because MCs can be in the data more than once, a control for the number of bills authored. I present the results in the first column of table 4. While this model tests the most basic assumption, these results are robust to numerous alternative specifications including adding in additional controls for institutional position, constituency and legislator characteristics, as well as other estimation strategies or using the factor scores calculated in the factor analysis.[20]

Because oversight is the main focus of the research that leads to the conflicting expectations, I also re-estimate the model using a Poisson regression and only the oversight tools from the measure as the dependent variable. The new score ranges from 0-7, but the expectations are the same. The statistical results are presented in the second column of table 4. For ease of interpretation, however, I plot the expected PCS for both models in figure 5. For both models, if the results of the test show higher scores for non-committee members, then the findings lend support for the *Competing Functions Hypothesis*. If, however, the results show higher scores for committee members, we find support for the *Complementary Functions Hypothesis*.

As shown in table 4 and figure 5, my findings support the *Complementary Function Hypothesis* using both measures. When going from a noncommittee referral match to a committee referral match,

19. As an indicator of model fit, I calculated the deviance-residual summary statistic (R^2_{DEV}) proposed by Cameron and Windmeijer (1996). This is an alternative to the pseudo R-squared measures of generalized count models and calculates the improvement in log-likelihood of the estimated parameters over the baseline of setting y at its mean (see also Bonica 2013).

20. For more information see Appendix E tables E.1-4 (pages A15-18).

Table 4: Models of Policy Content in House Bill Introductions

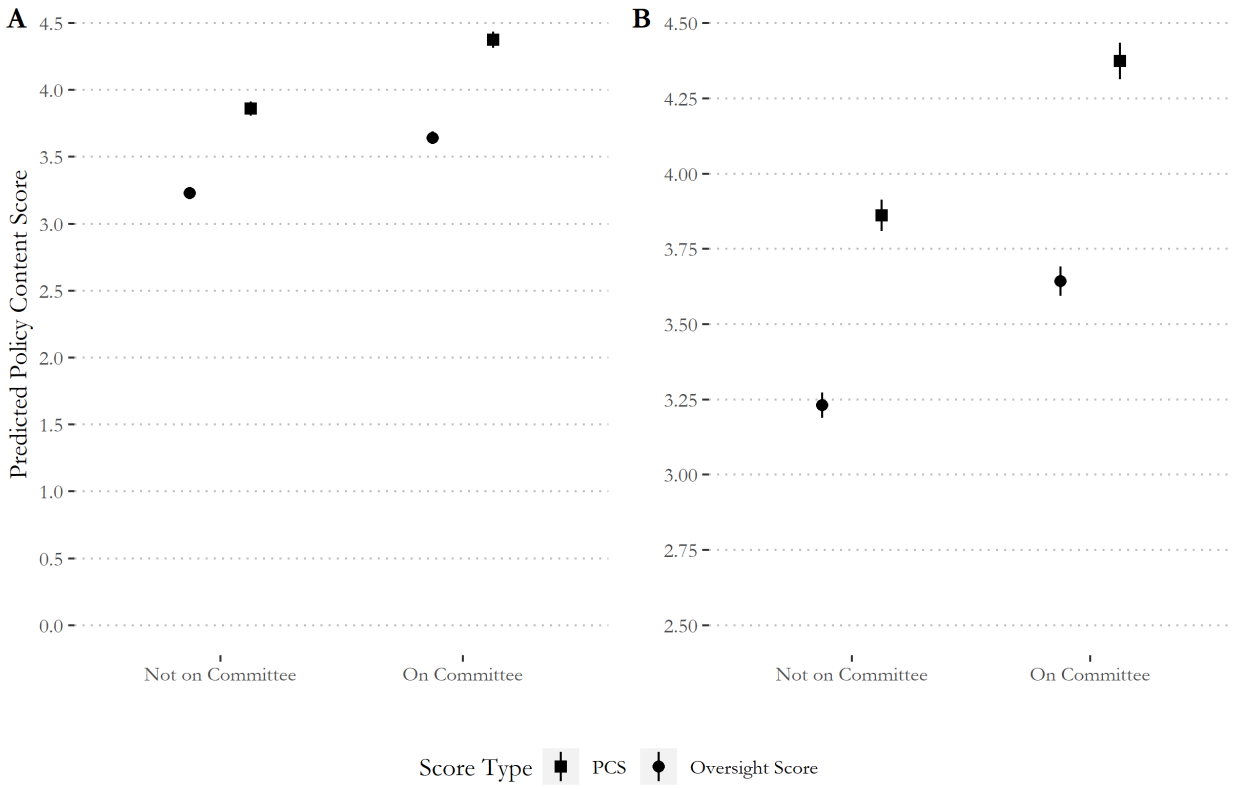
	Policy Content Score	Oversight Tools
Author on Committee	1.13***	1.13***
	(0.01)	(0.01)
Author in Majority Party	1.02	1.03***
	(0.01)	(0.01)
Author United with Executive	1.04***	1.02*
	(0.01)	(0.01)
Author is Democrat	1.12***	1.13***
	(0.01)	(0.01)
Seniority (in terms)	1.02***	1.02***
	(0.00)	(0.00)
Seniority^2	*1.00***	*1.00***
	(0.00)	(0.00)
Log-Likelihood	-30064.49	-27179.10
R^2_{DEV}	0.14	0.09
N	13,770	13,770

Notes: Model 1: Negative binomial regression estimates reported incident rate ratios with PCS as the DV, SE in parentheses. Model 2: Poisson regression estimates reported incident rate ratios with Oversight Tools as the DV, SE in parentheses. A control for word count & the number of bills authored were included in the model but suppressed in the table. Negative coefficients are in italics, some show 1.00 due to rounding.
Overall Mean PCS = 4.18. Mean score for Oversight tools = 3.46 (out of 7).
*$p<0.05$, **$p<0.01$, ***$p<0.001$.

the predicted PCS increases by approximately half a tool type. This result is both statistically and substantively significant. Recall that the PCS is a measure of tool diversity. This means that committee members are not simply adding another report to the bills they draft, they include a more diverse set of policy tools in those bills. This pattern is replicated even when narrowing the test down to just oversight tools. Again, committee members include approximately half an oversight tool type more compared to noncommittee members.

By placing policy content front and center, and testing the hypothesis on a dataset that covers four congresses and bills across a wide range of issues and standing committees, I provide a more direct and comprehensive analysis of these hypotheses than exists in the extant literature. Moreover, by testing the hypotheses using both the PCS and the oversight tools, we can be more confident in our support of the *Complementary Functions Hypothesis*. Members of committees, who are well-positioned for *ex post*

Figure 5: Predicted Policy Content by Committee Membership



Note: Panel B displays the in results from Panel A on a truncated scale.

oversight, do not put off until tomorrow what they could do today. Rather, they use their expertise to constrain other political actors *ex ante*.

7 Conclusion and Future Research

How legislation is written matters. When legislators decide to draft a new bill, the policy tools they include affect the decisions of downstream political actors. Although political scientists have discussed the importance (or lack thereof) of policy content for decades, research has suffered from a lack of a systematic approach to measure the 'stuff' written into legislation. This paper offers a measure of policy content that can be used by scholars interested in a wide range of questions related to institutions, elite behavior, and lawmaking.

The measure presented in this paper can help advance scholarship in several areas within political and policy sciences. The method for identifying policy tools builds on a robust literature on policy design and delegation and discretion. By building a dataset of the tools employed in legislation over eight years and across issue areas, I offer a rich descriptive accounting of the content of legislation. By combing these tools into a measure of policy content, I provide a more precise accounting for the content of legislation that can be applied to testing both new and existing hypotheses. I provide an illustrative example, showing that committee members include more policy content in the bills they introduce, providing additional evidence that lawmaking and oversight are complementary committee functions.

By applying the coding method to bill introductions (rather than laws), I provide insight into the everyday policymaking behavior of MCs. This allows us to answer questions including, under what institutional (e.g., chamber position, government composition) and extra-institutional (e.g., legislator background, experience, ambition, and/or district and electoral characteristics) context do MCs use more (less) policy content? Furthermore, by combining PCS with other measures of legislative behavior (e.g., legislative effectiveness, legislative style) or with data at other points in the policymaking process, we can gain a more nuanced understanding of what government does and how it does it.

There is much more about policy content, and policy tool usage specifically, to explore. One possible avenue for future research is to use this new data to create different versions of PCS. There may be theoretical reasons to weigh tools differently before combing them into a measure. Moe (1989), for example, asserts that sunset provisions can undermine the intent of the enacting coalition of legislators because it relies on future actors to reauthorize the legislation. By reconceptualizing the measure in this way, PCS can be used to answer even more questions about how to write effective legislation.

Similarly, future research could break down the PCS into its component parts at the category, tool type, or individual tool level. These components, and the relationship between them, can be explored to provide even greater understanding of policy content. We might wonder, for example, if Democrats

are more likely to use punishment tools or if Republicans are more likely to use tax incentives instead of direct expenditures (Grabosky 1995)?

PCS are just one way that we can better understand the content of legislation written by MCs. By focusing on policy tools, I cannot speak to bill specificity (VanSickle-Ward 2014). While I can identify the presence of definitions, for example, I do not account for how detailed they are. Additionally, by focusing on tool diversity within legislation, I do not address the frequency with which tools are used. These limitations notwithstanding, by using a policy tools approach and identifying the diversity of tools written into legislation, I provide new insight into how legislation is made that improves upon existing measures and proxies for bill content. This has several potential implications for our understanding of institutions, elite behavior, and the policymaking process.

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Signals From the Hill: Policy Content Scores as a Measure of Legislative Constraint

Erinn Lauterbach

Contents

Appendix A Policy Content Score

Subsection A.1 Codebook Creation

In order to construct the dataset, I obtained the text of all the public lawmaking (H.R.) bills introduced in the 109-112th Congresses from the Government Publishing Office (www.govinfo.gov) using the unitedstates/congress github scraper. Once downloaded, I subset the data to just the bill text as it was first introduced for the 13,770 bills that fit the criteria laid out in Appendix B.

I constructed my dependent variable with the bill text. I identified the tools that are used ex ante in the legislation and constructed coding rules by compiling information from academic research, bill drafting handbooks, the House Legal Counsel's guide to best practices,and from the Federal plain language guidelines (plainlanguage.gov). Next, two coders (myself and a volunteer) coded a small subset of bills from the 108th Congress using the coding rules. Finally, I went back through the results to 1) clarify definitions where there was uncertainty and disagreement in coding between the coders and 2) assess if any existing codes should be

Next, I hired three undergraduate research assistants who helped me hand-code a random selection of education bills (from the dataset) over a 10 week period. Using the coding rules established through the process above, the four of us coded approximately 350 bills with roughly 10% double or triple coded to assess validity. Through this process, each sentence was coded as either 'no code' or one of the substantive punishment, incentive, or oversight codes. Sentences were only double coded if the main topic included more than one of the tools. Given both the labor intensive nature of hand-coding and the relatively low agreement rate (approximately 0.62), I used this data modify the codebook and write the regular expression searches that were used to create the final dataset used in this paper.

To code the data I used the qualitative research program Atlas.ti which allows for regex searches in two auto-coding settings. One setting allows for strict autocoding. For the remaining hand-coding, I used the modified auto-coding feature where I was able to either accept or skip each instance of the search found in the data; this process allowed me to look more closely at the context surrounding the text and make a determination if the tool was present. The number of searches needed to capture the variation in the language used to outline the tools depended on the tool. Definitions, for example, required very few searchers because an overwhelming majority of time a definition is present in a bill, the language includes the short phrase 'the term' (regex search: the\s+(terms|term)\s+\'). I was able to autocode this regex search because it is specific enough to pick up examples of definitions without also picking up things that are not, and I did not need many other expression searches because this one is so comprehensive. Coding for examples of entity organization and structure, however, took over 400 searches due to the number of different elements that made up the tool and the variation in the language in which members used to communicate those elements.

Finally, I used the Congressional Research Service (CRS) detailed policy tags as a backstop for a couple of the more difficult tools to find. The CRS tags each bill that is introduced with a number of detailed policy tags that they deem relevant based on the bill content. I used this as supplemental to the hand-coding for two main reasons. First, they changed their coding scheme in the middle of the my data, so the 109th and 110th congresses use *legislative subject terms* which include over 1,000 narrow issue tags, to a *legislative indexing vocabulary* starting with the 111th Congress. This new system uses broader categories that cover fewer issues. Additionally, while the CRS provides this information to the public for free at www.congress.gov, their main function is to work with, and provide information to, members of Congress and their staff. Given their purpose, the way that they define the tags and

methods for assigning them are not publicly available. As such, I use them only to round out my coding on issues that are covered in both of their coding schemes.

Subsection A.2 Subcategory Definitions

Given that the literature on policy tools spans several fields of study, there is no complete set of instruments or a cohesive definitions across scholars. Scholars often use the same term to mean many things (e.g., regulation, command-and-control, deck-staking, etc.) and/or many terms to mean one thing (vice, sin, excise tax). Additionally, scholars use definitions inconsistently, resulting in differences in our understandings. Taken together, this means compiling a comprehensive list is very difficult. The following tools, to the best of my knowledge, constitute a well-rounded representation of the tools discussed across disciplines.

Punishments There are two subcategories of Punishments:

- Civil and Criminal Punishments, Including Fines:
  - *Civil Sanctions*: (sometimes called tort liability tools) Does the bill mention that civil litigation may or shall be used against an individual or entity found in violation of the law? Can indicate when injunctions should be issued and whether they are temporary or permanent, who has standing, etc.
  - *Criminal Sanctions*: Does the bill mention that criminal prosecution may or shall be used against those found violating the law? Can specify the type of offense that will go on their record (misdemeanor or felony), specify the amount of time in jail, whether punishments run concurrently or consecutively, etc.
  - *Fines*: Does the bill mention that taking (or failing to take) action is punishable by a fine? These are almost always paired with other criminal sanctions being imposed by a judge or jury due to the nature of federal crimes.
  - *General Punishments*: Does the bill mention any additional form of punishment, or a generic mention of sanctions & punishments, that an entity or individual must endure for taking (or failing to take) an action. This often includes references to sanctions or penalties without enough other context to classify it more specifically.
- Removal of Resources: Does the bill mention any individual, government agency, or contractor lose their funding (including loans/grants), contracts, licenses/certifications, jurisdiction, power, or have to repay funds for taking (or failing to take) some action? Other examples include losing eligibility for participation in future programs.

Incentives There are three subcategories of Incentives:

- Positive Incentives: Give actors additional benefits in order to induce them towards a certain desired behavior.
  - Government Monetary Aid

    * *Vouchers:* Does the bill indicate that an individual or entity shall or may be eligible for a voucher which is redeemable for specified goods and services in specific amounts. These are money replacements provided by the government to make specified choices.
    * *Rebates:* Does the bill indicate that an individual or entity shall or may be eligible for a rebate (refund) after they have already purchased a good or service? This is when the government refunds money at any time of the year.
    * *Subsidies:* Does the bill outline certain subsidies that are available to entities in exchange for providing certain services/taking certain actions? This is often a benefit provided to decrease the burden on an individual or entity that provides a public good (e.g., paying farmers not to grow certain crops)
    * *Tax Credits:* Does the bill indicate that an individual or entity can qualify for a tax credit for taxing certain actions? These are dollar-for-dollar reductions of income tax.
    * *Tax Incentives:* Does the bill indicate that an individual or entity is eligible for tax breaks (reductions in taxes)? These often reduce or eliminate taxable income.
    * *Grants & Other Federal Aid:* Doe sthe bill indicate that grant money, or some other form of government aid, is available and/or will be provided for entities or individuals in exchange for taking a certain action? These are direct expenditures offered by the government.
    * *Govt Loans & Loan Guarantees:* Does the bill mention that an individual or enitty will be eligible for loans backed by a government guarantee? Does it request that businesses (like banks) should provide loans for certain groups based on Congress's recommendation? In the case of direct loans, the government spends money and is tasked with overseeing repayment. Rather than spending government revenue, loan guarantees provide other entities, like banks, the security they need to loan to people who would otherwise be too risky to invest in.
  - <u>General Incentives</u>: Does the bill mention any additional form of incentive, or a generic mention of incentives, that an entity or individual may or shall earn for taking certain actions? This includes awards, prizes, bonuses.

- Negative Incentives: Meant to discourage, restrain, or inhibit undesirable behaviors, often by increasing the cost.

  - <u>Disincentivess</u>
    * *Fees/Charges:* Does the bill indicate that an individual or entity can pay a price to take some action or receive a direct and discernible service from the government? Although similar to a tax, there are subtle differences between the two. Charges are voluntarily paid in exchange for some service or advantage and are often used instead of a punishment.
    * *Vice Tax:* (also called sin or excise taxes) Does the bill indicate that an individual or entity can pay the government for (in)action without gaining any discernible service in return? They increase the cost of action that government wants to dissuade people from doing (usually related to consumption) and are generally used when, for whatever

reason, legislators do not wish to outlaw the activity. People pay these taxes frequently when doing things like buying cigarettes or alcohol.

Oversight There are seven subcategories of Oversight:

- Timing Instructions: These outline in clear terms when a status quo change will happen or the amount of time an actor has to implement or respond to a request.
  - *General Time Constraints:* Does the bill include, in clear terms (e.g., 120 days) when the status quo change takes effect, how long a provision will be in effect, the amount of time an actor has to act. Most often appear as deadlines in bills that are introduced and this includes provisions that limit the amount of time a grant can be offered to a particular entity, when reports are due, or how long an agency has to write a new standard. Time constraints are also frequently used to outline how often inspections need to take place, how much notice is required before a change happens or an application is due.
  - *Sunset/Reauthorization Requirements:* Does te bill, or any provision within it, require reauthorization by Congress after a set period of time? Does the bill mention that something will terminate after a certain period of time.
  - *Retroactive Implementation:* Are there any provisions in the bill that indicate that they should be considered as implemented at a time prior to the enactment of the bill? Legislators sometimes include amendments in bills that they wish to be interpreted as applying at an earlier date. These provisions do set the terms in which a status quo changed, so they are also considered time constraints.
- Deck Stacking Provisions: These tools assure that certain political actors will be influential in downstream decision making. Within this subcategory, I include provisions that explicitly allow for outsides to access agency actions during all points in the policymaking process (e.g., rulemaking, implementation, and post-implementation stages).
  - *Consultation Requirements:* Are consultations with any other actor, either public or private, required as part of, or prior to, an action being taken? These are calls for downstream actors to bring other (either government or non-government) actors into the process.
  - *Public Hearings & Comments:* Does the bill mention the need for public hearings/comments at certain points, during certain portions, of the action entities must take? These tools increase transparency and add entry points during the rulemaking stages. These are sometimes redundant if already in place through the APA, but they also discussed alongside increases and decreases in time allotted and instructions to solicit input from certain individuals and entities.
  - *Exemptions & Exceptions:* Does the bill describe the persons or things to which the main message does not apply? Does the bill describe the persons or things to which the main message applies in a different way or which there is a different message?
  - *Appeals Procedures:* Does the bill establish explicit procedures, or the possibility, for an agency's or a judicial decision to be appealed? This tool allows entry points during the implementation and post-implementation stages.

- Information Gathering: These increase transparency by increasing access to information to Congress, other watch dogs, the public, or all three. These can be coupled with other tools (like time constraints) but it is not required.

  - *Reporting Requirements:* Does the bill outline any specific reporting requirements? This includes mandates on what types of information/details that are required, when the reports are due, and where they should be sent.
  - *Studies & Data Collection:* Does the bill mention that an actor engage with any inspection, testing, audit, study, data collection, and so on, to report specific information to Congress, another entity, or the public? This is sometimes coupled with with specific instructions on how data should be compiled (for example by contracting a specialized firm) and reported (broken out by age, gender, income level, etc.), or whether or not inspections should be scheduled or a surprise.

- Policy Details: While all policy tools provide instructions for downstream actors, these often set the base, outlining what is mandated versus what is optional, who is allowed to act, and baseline definitions and cues of interpretation.

  - *Definitions:* Does the bill provide specific definitions that outline what a term means, who is involved, and so on? These should be specific descriptions and not about a process related to decisionmaking. These can sometimes be short and vague or long and elaborate, but they provide explicit details either way.
  - *Regulatory Commands:* Does the bill include language like shall and must (which indicates the legal effect of duty); shall, may, should not, provisions that read like limiting discretion, and/or legal standards meant to constrain the discretion of entities (see Farhang and Yaver 2016).
  - *Delegation & Authorizations:* Does the bill allow for others to take action (e.g., may or should). Does it authorize others to take action, specify delegation, or let others make determinations? This also includes explicit mentions of delegation.
  - *Interpretation Outlined:* Does the bill include language that signals to another actor the way that Congress intended the content of the language to be interpreted (but this is not the nonbinding provisions including Sense of Congress).

- Setting Limits: These often structure the parameters around decision-making but usually (but not always) offer some flexibility. In practice this looks like floors, where decision-makers cannot do less, but they do more, and/or ceiling that set the maximum but allow for less.

  - *Spending Limits:* Does the bill include language that defines how funds can be used and/or how they must be allocated, either stated explicitly or in a formula? This focus is on whether or not/how Congress sought to explicitly dictate details about money. When Congress places monetary limits on how much can be spent on a program, what percentage of a grant can be used for administrative expenses, or even mandating that aid, like scholarship, be a certain dollar amount for each recipient. Limits can include either setting a floor or ceiling on what money is spent and/or how it is spent because both place restrictions on those implementing the policy that are easy to audit and trigger fire alarms.

  - *Sanctions Limited:* Does the bill outline what sanctions cannot be used or limits on (including floors and ceilings) sanctions? These either require certain levels of fines or time to be served in criminal sentences, to limiting the same for some infractions. Scholars include this in the realm of tort reform, or even limit the ability of courts to impose caps on damages. Other examples include setting the amount of time an entity is barred from participating in a program after a violation has occurred, or setting statutes of limitations on those seeking relief from injury.
  - *General Restrictions:* Does the bill couple a prohibition with a restriction? Catch-all category of restrictions not related to spending or sanctions. These can outline eligibility and are often coupled with if and/or unless phrases that mimic the floor/ceiling of the other tools within this category.

- Entities: Lays out the procedures to be followed for establishing and/or changing the organization/structure of government created entities.

  - *Entity Establishment:* Does the bill establish a new entity, like a board, commission, advisory committee, agency, etc. This can be as big as a new agency, or as small as a new branch or center of an existing entity. In the data this shows up most often as new Task Forces, Advisory Boards, and Commissions.
  - *Organization & Structure:* Does the bill set out guidelines for how any entity shall be organized and structured? Does it include specifics such as staffing, who has the authority to appoint members, details about membership (including number, where they come from), when and how the entity will meet, be compensated, the purpose, goals, powers, and duties of the entity? These either set up from scratch, or amend existing, organization and structure of government created entities. These can be extremely detailed or leave much of the decisionmaking process up to those who are delegated with the task of setting it up.

- General Oversight: Does the bill explicitly mention oversight or monitoring in the text? This is a catch-all category for explicit mentions of oversight and monitoring that did not fall within one of the other oversight categories.

Subsection A.3 Measure Construction

Through the regex coding process I end up with a *count* of the number of times each tool (at any aggregation level) is present in the bill. However, I reduce this to a dichotomous indicator for two reasons. First, the CRS tags are dichotomous so I have no way of knowing if, for example, there is more than one tax credit given in a bill. Second, the autocoding may be both over and under counting tools beyond their presence. Using the definition code, for example, a legislator might phrase their definitions as "For the purpose of this section, the terms "x," "y," and "z" all include.... The regex search I use (the\s+(terms|term)\s+\') will accurately indicate that presence of a definition, but will miss that there are *three* definitions. The next legislator may also include three definitions, but separate each out into a different subsection, thus that bill would be assigned a count of three for definitions while the first bill is only assigned a count of one.

With guidance from the existing literature, I binned the tools into the three overarching categories– punishments, incentives, and oversight– to make up the concept of policy content. It may have been

Table A.1: Factor Loadings and Uniqueness

Variable	Factor Loadings Model 1	Factor Loadings Model 2
Punishments		
Civil & Criminal Sanctions (incl. Fines)	0.56 (0.69)	0.54 (0.71)
Removal of Resources	0.71 (0.49)	0.71 (0.49)
Incentives		
Government Monetary Aid	0.40 (0.84)	0.39 (0.85)
General Incentives	0.62 (0.61)	0.62 (0.61)
Disincentives	0.39 (0.85)	0.39 (0.85)
Oversight		
Timing Instructions	0.71 (0.49)	0.70 (0.50)
Deck Stacking Provisions	0.71 (0.50)	0.71 (0.49)
Information Gathering	0.76 (0.42)	0.75 (0.43)
Policy Details	0.73 (0.47)	0.74 (0.46)
Setting Limits	0.72 (0.48)	0.71 (0.49)
Entity: Establishment, Organization & Structure	0.73 (0.47)	0.73 (0.47)
General Oversight	0.75 (0.44)	0.74 (0.45)
Total Variance	88.13%	100%
Eigenvalue	5.24	5.18
N	13,770	13,770

Model 1: Bartlett test of sphericity is significant, $\chi^2(66)=23678.177$, $p<0.000$

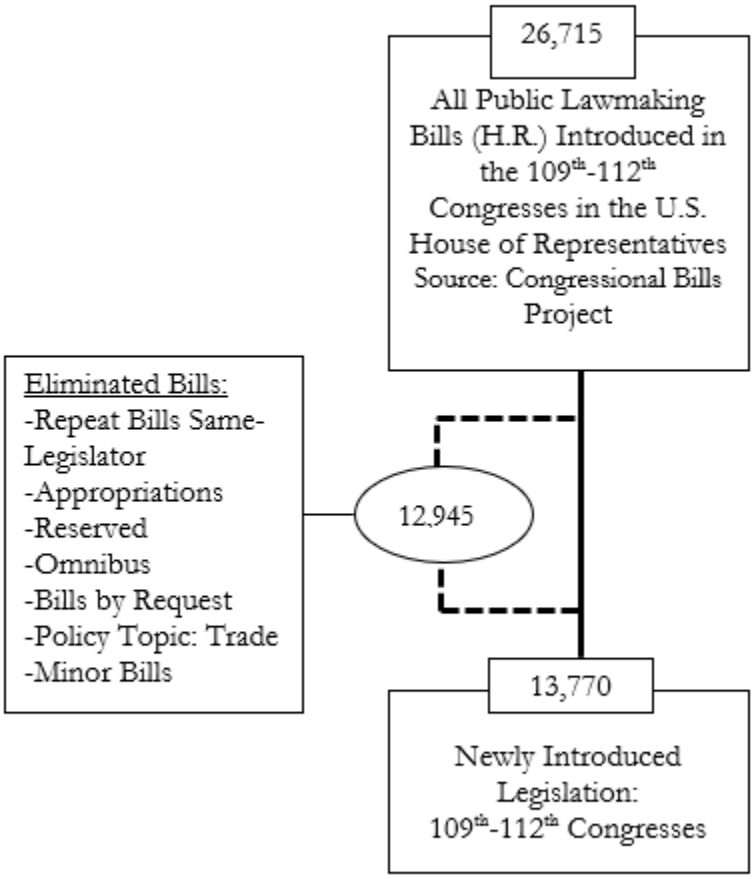
Model 1: Kaiser-Meyer-Oklin Measure of Sampling Adequacy = 0.837

Uniqueness is reported in the parentheses

the case, then, that I ended up with a three factor solution where each category of policy tools is a separate dimension. It may also be the case, given my expectation that all of the tools are indicators of a broader concept (i.e., they all alter the incentives faced by downstream political actors to comply with the legislator's intent), that all the variables "hang together" on one factor. Table A.1 reports the factor loadings for two models. Model 1 reports the results from a polychoric factor analysis. As a robustness check, Model 2 reports the results of a general factor analysis applied to a tetrachoric correlation matrix.

Appendix B Data Reduction

Figure B.1: Data Roadmap



Focus on Bill Introductions The legislative process makes it highly unlikely that the content of a bill remains consistent as it moves throughout the policymaking process. In exchange for supporting a bill, legislators can not only include provisions that complement the bills original intent, they are also able to add language to limit the effectiveness of the policy and provide additional restricts on other government actors. In fact, this process can result in a bill being so far removed from its original intent that legislators who originally supported (or even introduced) the bill may not continue to support its passage. In 2014, for example, several cosponsors of the *USA Freedom Act* ended up voting against the bill on final passage. As Representative Jared Polis (D-CO), an original co-sponsor, explained, "Unfortunately the USA Freedom Act, which I cosponsored *as introduced*, has been watered down and co-opted to the point that it creates the possibility that the NSA could misuse the bill- *contrary to*

legislative intent..." (http://tiny.cc/qw3loz emphasis added). Additionally, while the original author of a bill may be table to make their preferences known as the bill is marked up and amended, they have very little power to rectify any changes they disagree with. Thus, because the legislative process all but guarantees changes to the text of bills, it is hard to attribute a bill's content to the preferences of the author at any stage after introductions.

Subsequent Introductions When legislators introduce a bill that fails, they often resubmit it throughout their careers (Wawro 2001). Although it is possible for a legislator to reintroduce the same bill without altering its contents, they may also make some changes in order to increase the likelihood of passage. I believe that these repeated bills may no longer reflect the legislator's true preferences. Even if legislators do not make changes to the bills they reintroduce, these subsequent introductions still impede on our ability to understand the strategic lawmaking behavior of legislators. A simple reintroduction with no changes requires very little effort and/or resources but could still skew the data. For example, if a Democratic member introduces a new bill in the 111th Congress, when I expect she has the greatest incentive to write bills with high levels of policy content, and she reintroduces it in the 112th Congress, the context that she wrote it in has changed and it is unclear if she would have spent the same resources if she was drafting the bill for the first time while in the minority party during quasi-divided government. If, however, she introduced a new bill that has high levels of policy content in the 112th Congress, then that bill constitutes a true observation that is counter to my expectation.

The Congressional Bills Project (CBP, Adler and Wilkerson 2005-2012) contains data on every bill introduced from the 93rd Congress forward. In order to determine if (1) a bill was introduced more than one time by a legislator, and (2) when the bill was introduced for the *first* time, I took the following steps:

1. Identify all the legislators who served at any point during the 109-112th Congresses.
2. In the full dataset (93rd Congress forward), filter for each individual legislator in the data. For each legislator:
   (a) Using the "bill title" column, identify every instance where the name was either exactly the same or the only change was a date.
   (b) Identify the first Congress (even if it was prior to the 109th) a bill with that name was introduced, code first introduction as 0 and each subsequent introduction as 1.
3. Drop all subsequent introductions.

Note that if a legislator was elected before the 109th Congress and they introduced a bill for the first time before my data starts, all instances of that bill are still removed from my data.

Some bills were also introduced more than one time in a single Congress. This usually happens because, once a bill is introduced, it cannot be taken back or "reclaimed". As such, if a member wants to make any changes, even ones that do not substantively change the bill, they must reintroduce it.

Appropriations, Omnibus, By Request and Reserved Other scholars have used these categories, especially appropriations, to remove bills that do not pertain to new policies. Appropriations bills were identified by a mixture of House committee assignments and keyword searches. I first identified every bill that was referred only to the House Appropriations Committee and removed them, identified

by www.congress.gov. For both appropriations and omnibus bills I searched for "appropriation*" and "omnibus" in bill titles under the words and phrases search on congress.gov.

In order to identify bills introduced "by request," I 1) searched of this specific combination of bills under the words and phrases search on congress.gov and 2) removed all bills with that designation. Removing these bills does not ensure that members have not introduced the bill on behalf of someone else (for example the president, an agency, or an interest group) but it does remove the ones where the legislator took the step of making sure that it was known that the bill was written by someone else.

Finally, I removed all the bills that were "Reserved" but no bill was introduced. Sometimes a bill number will be reserved for symbolic reasons, for example H.R. 19 or H.R. 1920 may be reserved for bill that will commemorate the passage of the 19th Amendment allowing women the right to vote. It is sometimes the case, however, that no such bill is introduced, or it gets misnumbered, and so there is no text to code. If the reserved number was used, the title of the bill replaced "Reserved" in the bill title column and therefore the bill was included if it did not meet any of the exclusion requirements.

Trade Bills Excluded trade bills were identified by their bill titles. For example, in the 112th Congress, Congressman Luetkemeyer introduced a bill titled, "To reduce temporarily the duty on 5-Methylpyridine-2,3-dicarboxylic acid" (with no short title given). Bills like this are introduced so that they will be combined into a broader bill about, for example, tariff and import fee structures. They are not meant, on their own, to create new trade policy. Some legislators introduced several in the same Congress with slightly different names but, for the majority of these bills, bill text is in the same format. See Figure B.2 for an example.

Figure B.2: Example: Trade Bill

109TH CONGRESS
1ST SESSION

H. R. 647

To suspend temporarily the duty on TMP Oxetane (TMPO).

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 8, 2005

Ms. KAPTUR introduced the following bill; which was referred to the Committee on Ways and Means

A BILL

To suspend temporarily the duty on TMP Oxetane (TMPO).

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. TMP OXETANE (TMPO).

(a) IN GENERAL.—Subchapter II of chapter 99 of the Harmonized Tariff Schedule of the United States is amended by inserting in numerical sequence the following new heading:

".....	9902.07.12	Trimethylolpropane Oxetane (CAS No. 3047–32–3) (provided for in subheading 2932.99.90)	Free	Free	No change	On or before 12/31/2008	.".

(b) EFFECTIVE DATE.—The amendment made by subsection (a) applies with respect to goods entered, or withdrawn from warehouse for consumption, on or after the 15th day after the date of the enactment of this Act.

Minor Bills In order to identify the minor bills, I first excluded all the bills that were marked 'minor' in the CBP. To supplement this, I searched www.congress.gov in the 109-112th Congresses for the following Legislative Subject Terms: commemorative events and holidays, commemorations, Congressional gold medals, Congressional Medal of Honor, postal facilities, congressional tributes, historical cities and heritage, courthouse, ex-presidents, federal buildings, names, and ex members of congress. To make sure this was comprehensive, I also did searches for keywords within bill titles including"to designate", "to redesignate", "to name", "to rename", and "post office".

Appendix C Descriptive Information

Table C.1: Data Sources, Definitions, Descriptive Statistics

Independent Variable	Description	Mean	Std. Dev.	*N*
Author on Committee[b]	Equals "1" if the author sits on a committee the bill was referred to	0.46	0.50	13,770
Author & Leadership on Committee[c]	Equals "1" if the author is a rank & file member of the committee the bill was referred to. Equals "2" if the author is a chair or ranking member of the committee the bill was referred to.	0.64	0.76	13,770
Majority Party Status[c]	Equals "1" if author is in the majority party in the House (for Congress bill was introduced)	0.64	0.48	13,770
Divided Government[c]	Equals "1" if author is unified with Executive (for Congress bill was introduced)	0.49	0.50	13,770
Party[b]	Equals "1" if author is a Democrat	0.42	0.49	13,770
Race[a]	Equals "1" if the author is BIPOC	0.17	0.38	13,770
Gender[b]	Equals "1" if author is a woman	0.19	0.39	13,770
Seniority[d]	Equals a count of the number of terms served.	5.90	4.62	13,770
Former State Legislator[e]	Equals "1" if author is a former state legislator	0.48	0.50	13,770
Higher Office[g]	Equals "1" if author ran for higher office	0.15	0.35	13,770
Lawyer[g]	Equals "1" if author has a JD	0.30	0.46	13,770
Median Household Income[f]	Median Household Income for the district author represents (scaled, $10,000)	$55,325.42	$14,628.49	13,632
Share Black[f]	Percent of author's district that is Black	0.12	0.15	13,632
Share Latinx[f]	Percent of author's district that is Latinx	0.16	0.17	13,632
Vote Share[d]	Percent of author's vote share in the election prior to the bill's introduction	67.23	13.30	13,692
Word Count[g]	Substantive number of words in the bill (10,000)	0.18	0.64	13,770
Bill Introductions[c]	Number of bills author introduced in total dataset	33.38	20.54	13,770

[a]Constructed by author from House Clerks Office Data

[b]From the Congressional Bills Project (Adler and Wilkerson 2005-2012)

[c]Constructed by author from Congressional Bills Project

[d]Constructed by author from LES data (Volden and Wiseman 2014)

[e]Constructed by author from National Conference of State Legislatures data, various years

[f]From U.S. Census

[g]Constructed by author

Table C.2: Legislators and Bills Introduced by Party, Government Composition, Gender, Committee Membership, Ambition & Experience

	109th Congress		110th Congress		111th Congress		112th Congress		Total in Dataset	
	Members	Bills	Members	Bills	Members	Bills	Members	Bills	Members	Bills
Democrat	198 (44.3%)	1,272 (42.1%)	*239 (55.1%)*	*2,639 (67.8%)*	***257 (59.8%)***	***2,682 (72.1%)***	191 (44.5%)	1,371 (43.7%)	310 (46.4%)	7,964 (57.8%)
Republican	***229 (55.7%)***	***1,746 (57.9%)***	195 (44.9%)	1,253 (32.2%)	173 (40.2%)	1,039 (27.9%)	*238 (55.5%)*	*1,768 (56.3%)*	358 (53.6%)	5,806 (42.2$)
Male Member	359 (84.1%)	2,480 (82.2%)	358 (82.5%)	3,107 (79.8%)	354 (82.3%)	2,962 (79.6%)	354 (82.5%)	2,612 (83.2%)	556 (83.1%)	11,161 (81.1%)
Female Member	68 (15.9%)	538 (17.8%)	76 (17.5%)	785 (20.2%)	76 (17.7%)	759 (20.4%)	75 (17.5%)	527 (16.8%)	113 (16.9%)	2,609 (18.9%)
White Member	358 (83.8%)	2,608 (86.4%)	359 (82.7%)	3,108 (79.9%)	353 (82.1%)	3,023 (81.2%)	354 (82.5%)	2,627 (83.7%)	564 (84.3%)	11,366 (82.5%)
BIPOC Member	69 (16.2%)	410 (13.6%)	75 (17.3%)	784 (20.1%)	77 (17.9%)	698 (18.8%)	75 (17.5%)	512 (16.3%)	105 (15.7%)	2,404 (17.5%)
Committee Referral Match	318 (74.5%)	1,372 (45.5%)	327 (75.3%)	1,899 (48.8%)	334 (77.8%)	1,711 (46.0%)	319 (74.4%)	1,416 (45.1%)	565 (84.5%)	6,398 (46.5%)
Higher Office	32 (7.5%)	328 (10.9%)	31 (7.1%)	397 (10.2%)	32 (7.4%)	425 (11.4%)	32 (7.5%)	313 (10.0%)	58 (8.7%)	1,463 (10.6%)
Former State Legislator	216 (50.6%)	1,459 (48.3%)	217 (50.0%)	1,844 (47.4%)	210 (48.8%)	1,780 (47.8%)	209 (48.7%)	1,509 (48.1%)	320 (47.8%)	6,592 (47.87%)
Total	427	3,018	434	3,892	430	3,721	429	3,139	669	13,770

Note: Parentheses are the proportion of legislators or bills by row total. Bolding indicates unified government, italics indicate majority in the chamber.

Appendix D Statistical Results

Recall that the PCS is a count of the number of policy tool types present in each bill, therefore a count model is appropriate. Because there is significant evidence of over-dispersion (e.g., the (1/df) Pearson statistic is greater than one, 1.19), the negative binomial regression model is preferred to the Poisson regression model. However, when using the oversight tools score, over-dispersion is not an issue with the DV, (1/df) Pearson = 0.87.

Table D.1: Full Results: Models of Policy Content in House Bill Introductions

	Policy Content Score, IRR	Oversight Tools, IRR
Author on Committee	1.13***	1.13***
	(0.01)	(0.01)
Author in Majority Party	1.02	1.03**
	(0.01)	(0.01)
Author Unified with Executive	1.04***	1.02*
	(0.01)	(0.01)
Author is Democrat	1.12***	1.13***
	(0.01)	(0.01)
Seniority (in terms)	1.02***	1.02***
	(0.00)	(0.00)
Seniority^2	*1.00***	*1.00***
	(0.00)	(0.00)
Word Counts (scaled 10,000)	1.30***	1.11***
	(0.01)	(0.00)
Constant	2.73***	2.27***
	(0.43)	(0.36)
Log-Likelihood	-30064.50	-27179.10
R^2_{DEV}	0.14	0.09
N	13,770	13,770

Notes: Negative binomial regression estimates reported with PCS as the DV, SE in parentheses. A control for the number of bills authored was included in the model but suppressed in the table. Negative coefficients are italicized, 1.00 due to rounding. Overall Mean PCS = 4.18.; Oversight tools = 3.46. *p<0.05, **p<0.01, ***p<0.001

Table D.2: Validation: Predicting Cosponsorships

	Incident Rate Ratio	Std. Err.
Policy Content Score	1.05***	0.01
Constant	13.06***	0.31
Log-Likelihood	-50623.85	
R^2_{DEV}	0.01	
N	13,770	

Notes: Negative binomial regression estimates reported with Cosponsorship as the DV. *p<0.05, **p<0.01, ***p<0.001.

Appendix E Robustness Checks

Table E.1: Robustness Checks: OLS & Different Scores

	Model 1 PCS	Model 2 Oversight	Model 3 Factor Score	Model 4 Weighted Score
Author on Committee	0.51***	0.37***	0.06***	0.04***
	(0.04)	(0.03)	(0.00)	(0.00)
Author in Majority Party	0.08*	0.10***	0.01*	0.00
	(0.04)	(0.03)	(0.00)	(0.00)
Author Unified with Executive	0.14***	0.08**	0.01**	0.01***
	(0.04)	(0.03)	(0.00)	(0.00)
Author is Democrat	0.43***	0.40***	0.06***	0.02***
	(0.04)	(0.03)	(0.01)	(0.00)
Seniority (in terms)	0.09***	0.07***	0.01***	0.01***
	(0.01)	(0.01)	(0.00)	(0.00)
Seniority^2	-0.00***	-0.00***	-0.00***	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Word Count (scaled, 10,000)	1.52***	0.89***	0.18***	0.13***
	(0.03)	(0.02)	(0.00)	(0.00)
Constant	2.51***	1.99***	0.27***	0.16***
	(0.58)	(0.45)	(0.07)	(0.04)
Adj. R-squared	0.21	0.15	0.20	0.24
N	13,770	13,770	13,770	13,770

Notes: OLS estimation with SE in parentheses. A control for the number of bills authored was included in the model but suppressed in the table. *$p<0.05$, **$p<0.01$, ***$p<0.001$.

Table E.2: Robustness Checks: Policy Content Score

	Model 1, IRR	Model 2, IRR	Model 3, IRR	Model 4, IRR
Author is on Committee	1.13***	1.13***		
	(0.01)	(0.01)		
Author is Rank & File on Committee			1.13***	1.12***
			(0.01)	(0.01)
Author is (Sub)Chair on Committee			1.15***	1.15***
			(0.02)	(0.01)
Author is in the Majority	1.02*	1.02	1.02*	1.02
	(0.01)	(0.01)	(1.01)	(0.01)
Author is Unified with Executive	1.04***	1.04***	1.04***	1.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Author is Democrat	1.10***	1.11***	1.11***	1.11***
	(0.01)	(0.01)	(0.01)	(0.01)
Author is BIPOC	1.02	1.04*	1.02	1.04
	(0.02)	(0.02)	(0.02)	(0.02)
Author is Female	1.04*	1.03*	1.04*	1.03*
	(0.01)	(0.02)	(0.01)	(0.02)
Author Seniority (in terms)	1.02***	1.02***	1.02***	1.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Author Seniority^2	*1.00***	*1.00***	*1.00***	*1.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Author is Former State Legislator	1.01	1.00	1.01	1.00
	(0.01)	(0.01)	(0.01)	(0.01)
Author runs for Higher Office	*1.00*	*1.00*	*1.00*	*1.00*
	(0.02)	(0.02)	(0.02)	(0.02)
Author has JD	1.01	1.00	1.01	1.00
	(0.01)	(0.01)	(0.01)	(0.01)
Median Household Income of District		1.00***		1.00***
		(0.00)		(0.00)
Share Black of District		1.09		1.09
		(0.06)		(0.06)
Share Latinx of District		*0.92**		*0.92**
		(0.04)		(0.04)
Vote Share, Previous Election		1.01***		1.01***
		(0.00)		(0.00)
Vote Share^2		*1.00***		*1.00***
		(0.00)		(0.00)
Word Count (scaled 10,000)	1.29***	1.28***	1.29***	1.28***
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	2.70***	1.62*	2.71***	1.62*
	(0.43)	(0.34)	(0.43)	(0.33)
Log Likelihood	-30059.86	-29625.03	-30058.96	-29623.94
R^2_{DEV}	0.14	0.14	0.14	0.14
N	13,770	13,586	13,700	13,586

Notes: Nbreg estimates reported. PCS as the DV, SE in parentheses. A control for the number of bills authored was included but suppressed in the table. Negative coefficients are in italics, 1.00 due to rounding. Mean PCS = 4.18. *p<0.05, **p<0.01, ***p<0.001.

Table E.3: Robustness Checks: Oversight Tools Only

	Model 1, IRR	Model 2, IRR	Model 3, IRR	Model 4, IRR
Author is on Committee	1.13***	1.12***		
	(0.01)	(0.01)		
Author is Rank & File on Committee			1.12***	1.12***
			(0.01)	(0.01)
Author is (Sub)Chair on Committee			1.14***	1.14***
			(0.02)	(0.02)
Author is in the Majority	1.03***	1.03**	1.03***	1.03**
	(0.01)	(0.01)	(0.01)	(0.01)
Author is Unified with Executive	1.02*	1.02*	1.02*	1.02*
	(0.01)	(0.01)	(0.01)	(0.01)
Author is Democrat	1.12***	1.12***	1.12***	1.12***
	(0.01)	(0.01)	(0.01)	(0.01)
Author is BIPOC	1.00	1.03	1.00	1.03
	(0.01)	(0.02)	(0.01)	(0.02)
Author is Female	1.03*	1.02	1.03*	1.03
	(0.00)	(0.01)	(0.01)	(0.01)
Author Seniority (in terms)	1.02***	1.02***	1.02***	1.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Author Seniority^2	*1.00***	*1.00***	*1.00***	*1.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Author is Former State Legislator	1.01	1.01	1.01	1.01
	(0.01)	(0.01)	(0.01)	(0.01)
Author runs for Higher Office	*0.99*	*0.99*	*1.00*	*0.99*
	(0.01)	(0.02)	(0.01)	(0.02)
Author has JD	1.01	1.00	1.00	1.00
	(0.01)	(0.01)	(0.01)	(0.01)
Median Household Income of District		1.00***		1.00***
		(0.00)		(0.00)
Share Black of District		1.07		1.07
		(0.01)		(0.05)
Share Latinx of District		*0.90***		*0.90***
		(0.04)		(0.04)
Vote Share, Previous Election		1.01***		1.01***
		(0.00)		(0.00)
Vote Share^2		*1.00***		*1.00***
		(0.00)		(0.00)
Word Count (scaled 10,000)	1.11***	1.11***	1.11***	1.11***
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	2.24***	1.35	2.25***	1.35
	(0.36)	(0.38)	(0.36)	(0.28)
Log Likelihood	-27175.66	-26776.08	-27174.53	-26774.78
R^2_{DEV}	0.09	0.09	0.09	0.09
N	13,770	13,586	13,770	13,586

Notes: Nbreg estimates reported. PCS as the DV, SE in parentheses. A control for the number of bills authored was included but suppressed in the table. Negative coefficients are in italics, 1.00 due to rounding. Mean PScore = 3.46. *p<0.05, **p<0.01, ***p<0.001.

Table E.4: Broken Down by Congress (Policy Content Score)

	109th Congress	110th Congress	11th Congress	112th Congress
Author on Committee	1.12***	1.13***	1.16***	1.12***
	(0.02)	(0.02)	(0.02)	(0.03)
Author on Unified with Executive	*0.93***	*0.90****	1.23***	1.12***
	(0.02)	(0.02)	(0.03)	(0.03)
Author is a Former State Legislator	1.01	1.02	*0.98*	1.04
	(0.02)	(0.02)	(0.02)	(0.03)
Author ran for Higher Office	*0.96*	*0.99*	1.02	*0.99*
	(0.03)	(0.03)	(0.03)	(0.04)
Seniority (in terms)	1.02**	1.01*	1.04***	1.02*
	(0.01)	(0.01)	(0.01)	(0.01)
Seniority^2	*1.00*	*1.00*	*1.00****	*1.00*
	(0.00)	(0.00)	(0.00)	(0.00)
Word Count (scaled 10,000)	1.31***	1.29***	1.33***	1.20***
	(0.02)	(0.02)	(0.03)	(0.02)
Constant	3.44***	4.32**	4.87	2.19**
	(0.72)	(2.11)	(1.38)	(0.63)
Log Likelihood	-6589.30	-8385.02	-8010.15	-6869.47
R^2_{DEV}	0.16	0.18	0.18	0.13
N	3,018	3,892	3,721	3,139

Notes: Negative binomial regression estimates reported incident rate ratios with Policy Content Score as the DV, SE in parentheses. A control for the number of bills authored was included in the model but suppressed in the table. Negative coefficients are in italics, some show 1.00 due to rounding.
Overall Mean PCS = 4.18 (out of 12). *p<0.05, **p<0.01, ***p<0.001.