

Formal Authority, Persuasive Power, and Effectiveness in State Legislatures

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Abstract

What makes some lawmakers more effective than others is a central question in American politics. Recent research has emphasized the role of informal, persuasive leadership, but this research has focused almost exclusively on Congress, so it is unclear whether this approach to lawmaking is generally effective. Analysis of state legislatures is hampered by the lack of a theoretically sound and practically feasible measure of legislative effectiveness. I offer a solution to the primary problem with traditional hit rates. I apply this approach to North Carolina legislators and show my effectiveness estimates correspond with expert evaluations. I then examine recent terms of the Michigan, Georgia, and North Carolina legislatures to evaluate the relative importance of formal and informal powers at the state level. I hypothesize and find that informal, persuasive leadership is not effective in state legislatures where lawmaking is better explained by formal, hierarchical authority.

Keywords

legislative behavior, legislative politics, comparative legislatures, legislative professionalism, legislative effectiveness

What makes legislators effective at passing laws is a topic of considerable interest in political science. Recent research has emphasized the role that personal, social leadership plays in a legislator's ability to navigate bills through the legislative process (Arnold, Deen, and Patterson 2000; Cho and Fowler 2010; Fowler 2006; Kirkland 2011; Volden, Wiseman, and Wittmer 2013). Nearly all of the research on what I call persuasive power has focused on the U.S. Congress, making it difficult to assess whether this style of leadership is generally effective or is specially adapted to making laws in Congress.

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State legislatures offer political scientists the opportunity to test general theories of lawmaking. As Squire and Hamm (2005) astutely observed, state legislatures and Congress have comparable aims, electoral incentives, and democratic histories, but differ in ways that are of interest to legislative scholars. For present purposes, the key difference is that, in comparison to Congress, state legislatures are understaffed, poorly compensated, and generally more primitive (Squire 1992a; 2007; Squire and Hamm 2005). These differences should lead us to expect different lawmaking styles to prevail in state legislatures and Congress. As elaborated below, the social conditions that make informal, persuasive methods effective are diminished, if not entirely absent, from state legislatures. We should therefore expect formal, hierarchical power to determine who makes laws at the state level.¹

This article begins with an overview of scholarly efforts to measure legislative power. The following section proposes a measurement strategy that resolves the main problem with traditional hit rates by explicitly incorporating the number of legislative successes and failures into a measure of legislative effectiveness. I demonstrate validity by showing this approach generates estimates which correspond with expert ratings of North Carolina legislators. Equipped with a valid measure of effectiveness in state legislatures, I analyze three original data sets of state legislative activity to contrast effective lawmaking strategies at the state level to those thought to succeed in Congress. Consistent with my theoretical expectations, I find that informal, persuasive power has limited effect in state legislatures. Instead, effectiveness in state legislatures is better understood in terms of formal, hierarchical power. I conclude by identifying some limitations of this analysis and offering suggestions for future research.

The Elusive Nature of Legislative Power

Power is a fundamental, albeit elusive, concept throughout various subfields of political science, particularly legislative studies (Moe 2005; Volden and Wiseman 2009). We can broadly identify at least two types of political power. The first form of power is formal, hierarchical power, the ability to force someone to do something he or she did not want to do (Dahl 1957). It is generally a top-down command and control style of leadership carried out through coercion or threats. In contrast, informal, persuasive power does not force change, but rather emphasizes the positive benefits of cooperation and personal relationships.² These forms of power are not mutually exclusive for legislators with formal authority; they may, at times, find persuasion more expedient than coercion. For legislators without formal authority, however, persuasive power may be one of the only tools available to change public policy.

Distinguishing formal authority from persuasive power is important for understanding the difference between lawmaking at the state and federal levels. Although the legislative processes used in state legislatures and Congress are the same in many respects, state legislatures are, without exception, less stable and professional than Congress is. Georgia legislators, for example, convene for only 40 days a year and receive approximately \$18,000 in annual salary. The difference between Congress and state legislatures is evident in Squire's (1992a; 2007; 2017) professionalism index. This index is a

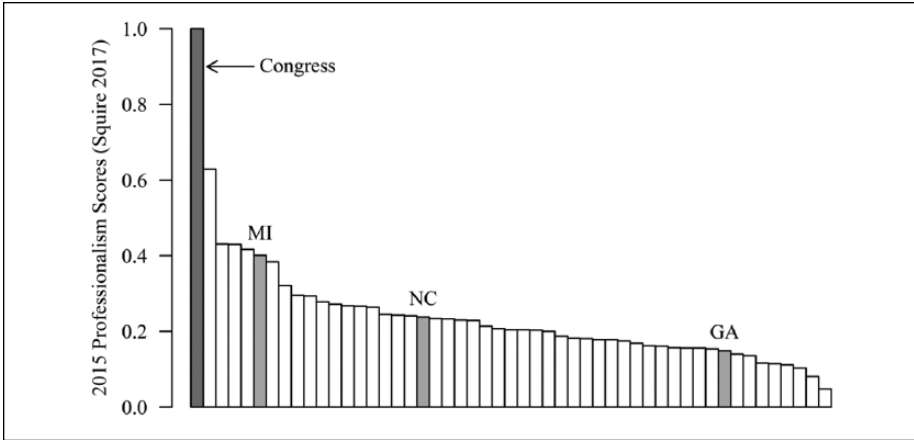


Figure 1. Comparing professionalism of congress and state legislatures.

summary statistic that incorporates member turnover, session length, compensation, and staff support in state legislatures to Congress (Squire 1992a; 2007; Squire and Hamm 2005, chap. 5). We can see in Figure 1 that there is a big difference between Congress (1.000 on the index) and typical state legislatures.³ The most professional state legislature, California, scores 0.629 and the state average in 2015 is just 0.225. While every state legislature is unique in some respects, the three states examined represent legislatures at relatively high, medium, and low levels of professionalization.

The institutional differences between Congress and state legislatures have important implications for effective lawmaking strategies. Stable, repeated interactions among members of an organization are generally thought to be essential to establishing norms and interpersonal ties within organizations (Leana and Van Buren 1999; Tsai and Ghoshal 1998). Consistent with this view, stability and professionalism have played key roles in the development of Congress. According to Kernell (1977), increasing membership stability in the late nineteenth and early twentieth centuries was essential to the institutional development of the House. Members are thought to cultivate their reputations in Congress to gain status and respect from their colleagues, presumably because these investments eventually pay off.

If Congress is comparable to a corporation or highly sophisticated firm, state legislatures compare to factories where formal rules dictate the lawmaking process. Due to turnover rates between 25% and 35% (depending on whether a state has term limits) and shorter sessions (Moncrief, Niemi, and Powell 2004; Squire and Hamm 2005), state legislators are less likely to have repeated, ongoing interactions with one another than are members of Congress (Swift and VanderMolen 2016)). They do not live in the state capital the way members of Congress live in DC. Ambitious politicians may view the state legislature as a mere stepping stone to higher office (Squire 1988a; Squire and Hamm 2005, 129–30). Accordingly, we can expect a state legislator to be less inclined to “earn” respect from his or her colleagues. A state legislator also has less incentive

and fewer opportunities to cultivate interpersonal relationships with other legislators because the legislative session is short and filled with new faces. When turnover is high and personal connections are limited, organizations rely on hierarchical structures and formal rules to get things done.

Research on the effect of term limits on state legislatures generally supports the idea that personnel turnover hinders opportunities to develop informal power. Kousser (2005) has shown that term limits, which shorten careers and increase turnover, make legislators with official leadership roles more effective and weaken those at the bottom of the formal hierarchy. After term limits were instituted in Michigan, Sarbaugh-Thompson et al. (2004; 2006) reported that legislators perceived influence concentrating in those holding formal leadership positions. Amateur legislatures, which are not necessarily term-limited but have high turnover rates (especially compared to Congress), tend to centralize power in the hands of legislative leaders (Squire 1988a; 1988b; 1992b).⁴

We can expect informal, persuasive powers to lose potency as legislative professionalism decreases. One would not expect a state legislator to excel at passing bills into law because he or she is popular, socially adept, or a model of service to the institution; instead, one would expect a state legislative effectiveness to correspond to formal leadership status. I apply this abstract, theoretical view of power within institutions to generate specific hypotheses, but next turn to the issue of measuring legislative effectiveness.

The Challenge of Measuring Effectiveness in State Legislatures

In the legislative context, we might measure a legislator's power in terms of his or her ability to make policy according to his or her preferences. But precisely how do we do this? "The enterprise of measuring influence," Hall (1992, 205) aptly observed, "has a long and controversial history." Political scientists have not settled on a generally accepted method of measuring legislative power at the federal or state level.

Approaches to measuring legislative power generally fall into one of four categories: hit rates, count measures, measurement models, and expert surveys. Scholars have primarily focused on Congress, but there have been some noteworthy studies of state legislatures (e.g., Bratton 2005; 2006; Miquel and Snyder 2006).

Hit rates are a practical way to measure legislative effectiveness, first used by Donald Matthews (1959; 1960). Matthews measured legislative effectiveness by dividing the number of bills each Senator passed into law by the total number of bills he or she proposed. More recently, Moore and Thomas (1991) and Box-Steffensmeier and Grant (1999) employed hit rates in their analyses of legislative effectiveness.⁵ Calculating the proportion of bills a legislator successfully passes into law is an intuitive way to gauge how well a legislator can "get things done."⁶ Hit rates also facilitate substantive interpretations of statistical models. It is worth noting that some legislators surely accomplish more than can fairly be attributed to their innate ability.⁷

Despite these virtues, hit rates can be problematic. Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003, 362) emphasize the following problem with hit rates:

[N]ot all hit rates are substantively equal. Legislator A, who introduces only one bill and has it reported by committee, will have a 100% hit rate. Legislator B, who introduces 15 bills and has 10 reported, will receive a hit rate of 66%.

Legislator A's legislative record is not clearly better than B's, although A certainly has a higher rate bit calculation. The problem identified by Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003) is not trivial. Some state legislators often introduce very few bills per session (Squire and Hamm 2005, 116–18). In a statistical analysis, someone like Legislator A will have an extremely high or low hit rate and may disproportionately influence the results if kept in the data sample. But if the researcher limits the sample to legislators who proposed more than a certain number of bills, the researcher wastes potentially useful observations, and the cutoff number is entirely arbitrary.

In addition to the traditional hit rate approach, political scientists have measured legislative effectiveness by counting the number of times legislators accomplished some legislative act, such as have a bill report from committee, have a bill pass their chamber, or make a successful floor amendment (Anderson, Box-Steffensmeier, and Sinclair-Chapman 2003; Fowler 2006; Hasecke and Mycoff 2007). Recently, scholars have incorporated information on varied legislative activities into complex measurement models (Volden and Wiseman 2009; 2014; Volden, Wiseman, and Wittmer 2013). More complex and nuanced approaches may be necessary to study success in Congress, particularly its recent terms, because a very small proportion of bills are passed into federal law. At the state level, hit rates are a more meaningful statistic (see Online Appendix 3).

Expert surveys are a final popular method of measuring legislative effectiveness (Hall 1992; Haynie 2002; Maisel 2010; Miquel and Snyder 2006). A well-designed survey helps ground our analyses in political realities, but there are practical limitations to this approach. Polling experts is expensive and one is unlikely to find experts who can rate the effectiveness of legislators in multiple states, or even a single state over a long period of time. Expert surveys may offer reliable measures of particular terms, but not a general approach to measuring effectiveness in state legislatures.

Solving the Problem with Hit Rates

As discussed above, hit rates are problematic when their denominator component is small. Consider again Legislator A, who sponsors one bill and passes it, and Legislator B, who sponsors 15 bills and passes 10 of them. By the traditional approach, the legislators' hit rates are 1.000 and 0.677, respectively, but as Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003) point out, these estimates are misleading. Legislator A's hit rate will quickly regress toward its true value as A tries passing more bills. We are more certain about Legislator B's hit rate than A's, but 15 attempts is still a small sample.

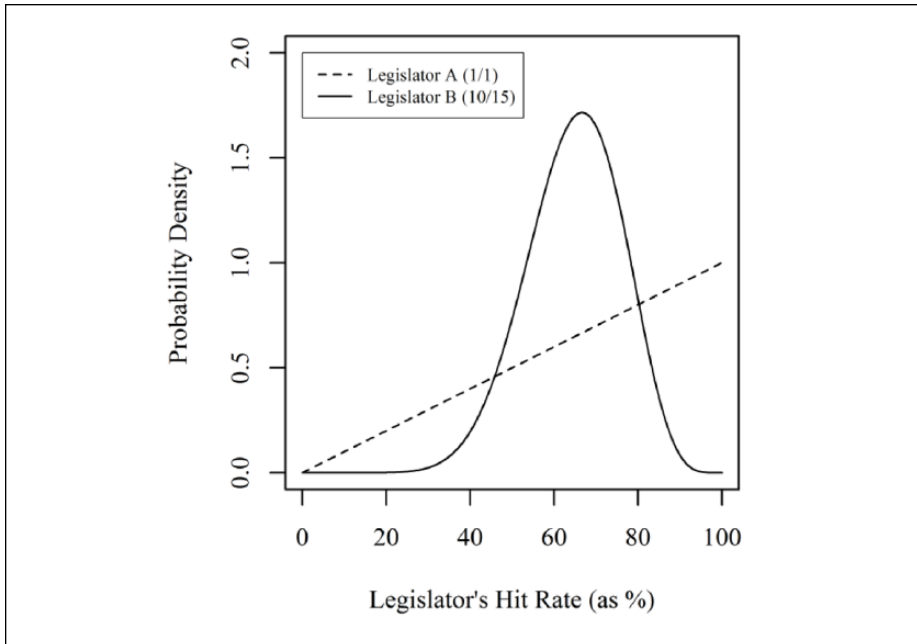


Figure 2. Legislator hit rates as distributions.

Rather than view A and B’s hit rates as fixed points, we can view hit rates as a distribution of likely values. Given the observed number of times these legislators attempted and succeeded passing bills into law, the most likely hit rates for A and B are 1.000 and 0.667, but their true hit rates may be higher or lower. We can calculate the likelihood that a legislator’s hit rate equals p over the range $[0, 1]$ given N tries and y successes based on a binomial distribution:⁸

$$L(p|y, N) = \frac{N!}{y!(N - y)!} \cdot p^y \cdot (1 - p)^{N - y}$$

Figure 2 applies this formula and plots the likelihood of different values of hit rates for Legislators A and B given their hypothetical track records. Because Legislator A sponsored fewer bills than Legislator B did, Figure 2 confirms the suspicion that that A’s hit rate may be less than B’s hit rate, despite A having a higher hit rate based on the traditional approach (there is 43.2% probability that A’s true hit rate is actually lower than B’s).

As point estimates of legislators’ hit rates, which may be useful for descriptive purposes, we can calculate the mean or median of the distributions of hit rate values. When their legislative records are sparse, these binomial distributions are asymmetric so their means and median diverge. However, as sample size increases, our point estimates become normally distributed with mean = y/N and variance = $y \cdot (N - y) / N^2 \cdot (N + 1)$.

By conceptualizing a legislator's hit rate as a value drawn from a defined probability distribution, we can address the primary problem with traditional hit rates and make efficient use of available data. This method alleviates the disproportionate influence of legislators who pass all or none of a small number of sponsored bills on regression analysis without having to discard these observations. We can operationalize the ability to make laws in a manner that reflects the number of attempts made, directly incorporating the uncertainty attending legislators' records into our statistical analysis.⁹ Model fit statistics, like R^2 , will decrease but we will avoid misleading estimates and conclusions. This would be especially helpful studying a state legislature that imposes rigid limits on how many bills legislators can introduce or sponsor. Furthermore, this approach focuses on readily observable events—sponsoring bills and passing laws—which are often publically available in digital form.¹⁰ The researcher does not need to dissect legislative histories or attempt to distinguish between significant and insignificant legislation in different states over multiple terms.

Perceptions of Power in the North Carolina Legislature

How are we to adjudicate among the various approaches to measuring legislative effectiveness described in the preceding section? While ease-of-use and good statistical properties are important factors to consider, the measurement should also be valid. Unfortunately, the validity of a particular measure is more often assumed than empirically tested. Because different measures yield different substantive results, it is important to determine which approach offers the best representation of legislative effectiveness at the state level. We might ask whether the measure is a meaningful representation of political power. When experts report that a legislator is effective, what qualities do they have in mind? In this section, I show that my method of estimating effectiveness corresponds with expert evaluations of legislative effectiveness.

The North Carolina General Assembly offers a test case for validating effectiveness measures. The North Carolina Center for Public Policy Research (NCCPPR) produces biannual rankings of state legislators. This nonpartisan organization asks State Senators, State Representatives, registered lobbyists, and state capital news correspondents to rate the effectiveness of each member of the state legislature.¹¹ Legislators are ranked from most to least effective in their chambers. The NCCPPR, a nonpartisan nonprofit organization, has compiled legislative rankings since 1978 and enjoys high response rates to its surveys. Political scientists have endorsed the NCCPPR's survey methodology and relied on their rankings to analyze legislative power (Haynie 2002; Miquel and Snyder 2006).

If the approach suggested here is a good measure legislative influence, legislators with higher hit rates should be rated as more effective than those with lower hit rates. Moreover, the approach suggested here should correspond more closely with expert rankings than other approaches to measuring effectiveness.

To test my suggested measurement strategy, I compiled a data set on the performance of North Carolina legislators in four recent regular terms. I tabulated how many bills each legislator sponsored (as primary or cosponsor) and how many of those bills

Table 1. Determinants of North Carolina Legislative Effectiveness Rankings.

	Model 1	Model 2	Model 3
	Coefficient SE	Coefficient SE	Coefficient SE
Hit rate variable (%)	0.80*** (0.09)	0.66*** (0.08)	0.62*** (0.09)
Party leader		14.09*** (2.41)	14.04*** (2.40)
Majority party member		21.41*** (1.86)	20.39*** (1.98)
Committee chair		8.49*** (1.85)	8.21*** (1.85)
Terms served (logged)		13.43*** (1.03)	13.65*** (1.03)
Divided government		-9.15*** (2.26)	-8.14** (2.49)
Count of laws made			0.08 (0.05)
Key laws made			0.001 (0.67)
Count of resolutions passed			0.05 (0.31)
Intercept	30.98*** (2.23)	3.45 (2.09)	2.00 (2.46)
R ²	.115	.528	.531
Adjusted R ²	.110	.520	.520

Note. $N = 672$; dependent variable is legislator's percentile ranking within his or her chamber. These results demonstrate the validity of measuring hit rates as a variable from a distribution.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed tests).

passed into law during each term, along with a host of additional variables as described herein.¹² I converted NCCPPR Legislative Rankings to percentage rankings within each chamber to consistently analyze rankings over four terms (i.e., the #1 ranked legislator is in the 99th percentile).¹³

Because NCCPPR Rankings are based, in part, on respondents' perceptions of legislative effectiveness, some legislators may be systematically over or under-valued relative to their legislative records (Battista 2011; Mooney 2013). New legislators may be under-appreciated because it takes time for survey respondents to get to know them. For these reasons, I identify party leaders, majority party members, and legislators' years of service.¹⁴ Additionally, I incorporate a dummy variable for terms of divided government when passing laws may be more difficult for all legislators. I control for these factors in Models 2 and 3, below.

To compare the approach suggested here to other measures of legislative effectiveness, I counted the number of bills and resolutions passed by each North Carolina legislator during these terms. I also counted of the number of bills they passed that were subject to a key vote per Project Vote Smart. Project Vote Smart, a nonpartisan organization, identifies key votes in state legislatures beginning in 2006 in most states.¹⁵ I assess these variables in Model 3 of Table 1.

I define probability distributions for each legislator's hit rate based on the number of bills sponsored and laws made. I then draw random values from these distributions to estimate multiple regression models.¹⁶ Because a set of values is drawn randomly, it yields varying regression coefficients from one estimation to the next. Therefore, I draw one hundred sets of legislator hit rates from their probability distributions and estimate an ordinary least squares (OLS) regression model across all of the sets.¹⁷ Table 1 presents the results of this analysis.

Statistical analysis indicates that legislators' hit rates are strongly correlated with expert judgments about legislative effectiveness. Model 1 shows that a 1% increase in a legislator's hit rate corresponds to a 0.80% increase in his or her effectiveness ranking.¹⁸ Model 2 incorporates a number of control variables. As expected, party leaders, committee chairs, and majority party members were rated higher than one would expect from their legislative records; inexperienced legislators, lower.¹⁹ Also, as expected, legislator rankings during divided government are significantly lower than terms of unified government. These control variables do not greatly affect the partial regression coefficient for the hit rate variable which remains positive and statistically significant.

Model 3 incorporates counts of laws made, key laws made (per Project Vote Smart), and resolutions passed by each legislator. These count measures, which reflect other and more complex approaches to measuring legislative effectiveness, are not statistically significant in this sample. A more complex method of measuring legislative effectiveness akin to LES does not yield greater correspondence to NCCPPR rankings (see Online Appendix 3).

The NCCPPR survey helps validate variable hit rates as a measure of effectiveness in state legislatures. This simple measure strongly correlates with expert judgments about political power. This is not to suggest researchers ignore supplementary data from surveys or legislative histories when available; the point is that the researcher can fairly well analyze power in state legislatures based on readily obtainable data. Construct validity is vital to this research, but these results do not explain what makes some lawmakers more effective than others are. In the next section, I analyze the determinants of legislative effectiveness in three different state legislatures.

Effective Lawmaking Strategies in Three State Legislatures

Thus far, I have outlined a practical method for measuring legislative effectiveness that accounts the number of bills legislators introduce. In the previous section, it was shown to generate a valid measure of legislative effectiveness. But what makes some legislators more effective than others are? A sound measurement strategy provides us the opportunity to test some theories of lawmaking tailored to Congress in the context of state legislatures.

Expectations about Effectiveness in a State Legislature

Compared to Congress, the Georgia General Assembly, North Carolina General Assembly, and the Michigan Legislature are relatively primitive lawmaking bodies. For reasons outlined above, one should expect formal, hierarchical power to prevail in these states rather than informal, persuasive power. From this abstract theory about power in different institutions, we can generate a number of specific, testable hypotheses.

Formal, hierarchical authority may give some legislators an advantage in the legislative process. Legislators who are members of the majority party, especially majority party leaders, enjoy a position of influence relative to members of the party out of

power (Moore and Thomas 1991). In states like North Carolina, however, majority party leaders focus on administrative responsibilities rather than actively sponsoring bills. The majority party generally controls committee assignments and appoints committee chairs who serve as gatekeepers in the legislative process (Shepsle and Weingast 1987). While minority party leaders may enjoy the confidence and esteem of members of their party, they lack majority party leaders' formal authority over the legislative agenda. Working in a smaller, more prestigious chamber may afford Senators greater opportunities for legislative influence. I expect these formal powers to be key to lawmaking at the state level.

Scholars have identified several sources of informal, persuasive power in Congress, which I maintain are unlikely to work effectively at the state level. According to classic accounts, members of Congress must earn their colleagues' respect. New members of Congress are thought to be less effective than senior members are (Moore and Thomas 1991; Volden and Wiseman 2009).²⁰ Because they work in long sessions and generally enjoy long careers, members of Congress have incentives to work hard and cultivate their reputations; this is thought to be one of the pathways to influence. In contrast, at the state level, I do not expect senior members to be any more effective at passing bills into law than their colleagues.²¹

We think that members of Congress are principally concerned with winning reelection (Mayhew 2004). They take election results seriously. From this perspective, it is rational to align with members who win elections by comfortable margins and distance oneself from those with a tenuous hold on office. Thus, how a member performed in his or her last campaign may bolster (or undermine) his or her authority in the legislature. According to Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003), "[l]egislators with large electoral margins are granted trusteeship, or the ability to legislate beyond the district's preferences." This view is supported by research on Congress. Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003) and Volden and Wiseman (2009) reported a statistically significant relationship between a legislator's margin of election victory and the influence that he or she enjoyed in the subsequent legislative term. Popularity among voters may help a member of Congress become more effective, but good reputations are not the currency of state legislatures; we should not expect state legislators who command large electoral margins to be more effective than other state legislators.

In addition to these classic accounts of federal lawmaking, more recent legislative studies have documented the importance of social connections among members of Congress in the legislative process (Cho and Fowler 2010; Fowler 2006). Working well with other members of Congress is important. Better connected members of Congress, those who occupy central positions in the social network of members, are thought to be more effective lawmakers.

Scholars have found that female members of Congress are particularly skilled at navigating bills through the complex environment that exists in the Capitol (Boyd 2013; Reingold 1996; Volden, Wiseman, and Wittmer 2013). Cultivating relationships is key to success in Congress and, according to these scholars, explains why female members are more effective than their male colleagues (Anzia and Berry 2011; Volden,

Wiseman, and Wittmer 2013).²² In state legislatures, personal connections and relationships are relatively fleeting; sessions are shorter, and careers, less rewarding. Accordingly, I do not expect female legislators or those extensive social networks to be more effective than their colleagues.

To summarize, it is expected that formal, hierarchical authority determines who passes bills in the state legislatures more than informal, persuasive powers do. It is hypothesized that majority party members, majority party leaders, committee chairs, and Senators are better able to pass their bills into law compared to their colleagues. In contrast, I do not expect informal, persuasive authority derived from hard work, experience, electoral support, or social skills to translate into legislative effectiveness in state legislatures.

Data and Methods

To test the idea that formal, hierarchical power is key to effectiveness in state legislatures, I compiled data sets on all legislative proposals offered between 2007 and 2013 in Michigan from 2008 to 2013 in North Carolina, and from 1999 to 2010 in Georgia.²³ These state legislatures represent different levels of professionalism (see Figure 1). For each legislative term, I tabulated the number of bills legislators sponsored and how many of these bills were passed into law. Based on this legislative history, I specify binomial probability distributions for each legislator's hit rate. I then draw 100 sets of random values from these distributions and estimate OLS regression models across all of the sets, making necessary corrections to avoid inflating the degrees of freedom for inferential purposes.²⁴

For each legislator in these states, I encode a number of variables to operationalize formal, hierarchical power. The variable *Majority Party* indicates whether a legislator's party was in the majority in his or her chamber during a given term. *Senator* identifies legislators who served in that chamber. I also identify legislators who served as a *Majority Party Leader* or *Committee Chair*. Committee chairs include all standing committee leaders, but not subcommittee or temporary committee chairs. This may be overbroad, since some standing committees are inactive and relatively weak, but there is no consistent way to identify powerful committees in multiple states over many terms. I expect all of these indicia of formal, hierarchical authority to be positively related to legislative effectiveness.

For each state legislator, I also encode a number of variables which would signify informal, persuasive power in the legislature. *Experience* is coded as the log of service years in the chamber. Michigan has term limits so the experience differences there are limited. *Prior Election Support* is the proportion of the vote each legislator received in the preceding general election (or special election in rare cases of mid-term replacements); mid-term appointments have demonstrated no prior election support. Election data were obtained from Klarner et al. (2013) and, for 2012 elections, state agency websites.

There are number of different ways to measure how central a legislator/node is in a network (Lazer 2011; Ward, Stovel, and Sacks 2011). To estimate how central state

legislators are in their chambers, I calculate two common measures of network centrality, eigenvector centrality and closeness, for each legislator based on the number of times legislators sponsored bills together (Brandes and Erleback 2005; Knoke and Yang 2008).²⁵ A legislator with high eigenvector centrality has strong connections to other legislators with strong connections; closeness is the inverse of the sum of the distance between a node and all other nodes in a network.

I identify *Female* legislators based on names and photographs in annual directories published by each state legislature.

To avoid reporting spurious correlations, I control for several factors which may affect the effectiveness of state legislators, but do not fit neatly into the category of either formal or persuasive power. To control for potential party differences, I identify *Republican* legislators. Prior research suggests that African American legislators are less successful in passing bills in state legislatures (Bratton and Haynie 1999), so I identify *African American* legislators in the three data sets.²⁶

Some legislators may succeed because their policy preferences are proximate to pivotal legislators, such as the median member of the legislator's chamber or the majority party. To control for the influence of individual preferences, I calculated *Distance to Floor Median* as the absolute value of the distance between each legislator and the chamber median during each term. I also calculated *Distance to Majority Median* during each term. I use data produced by Shor and McCarty (2011) which estimate legislators' ideal points from their roll call votes to calculate these distances.²⁷

In some states, including Georgia and North Carolina, legislators sponsor a substantial volume of bills that affect local governments, rather than the state as a whole. Local legislation in those states is subject to special procedural rules and passes largely by consent, rather than recorded roll call votes.²⁸ Legislators who focus on *Local Bills*, coded as the proportion of their bills considered local legislation, will likely have higher success rates than those whose legislative agendas emphasize general legislation. In Michigan, for a reason that is not altogether clear, local bills require two-thirds majorities to pass. According to recent editions of the *Michigan Manual*, the Legislature has not considered any local bills in recent terms so this control variable is omitted from the analysis of Michigan legislators.

Finally, legislators in these states worked under changing political conditions, including terms of unified Democratic government, divided government, and unified Republican government. During terms of divided government, legislators should find it more difficult to pass bills into law. To control for differences among terms due to changing political conditions, I include dummy variables for each legislative term.

Results

Because state legislatures are characterized by relatively high turnover, low pay, and short legislative sessions, the prospects for informal, persuasive leadership are diminished and formal, hierarchical power is needed to drive the legislative process. This theory of state lawmaking is generally supported by the statistical analysis of recent terms of the Georgia, North Carolina, and Michigan legislatures reported in Table 2.

Table 2. Determinants of Effectiveness in State Legislatures.

Independent variable	Combined data		Georgia		North Carolina		Michigan	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Formal authority:								
Majority party	2.68**	1.03	2.35	1.54	4.37*	1.83	2.66	1.85
Majority party leader	4.89***	1.06	8.03***	2.03	0.77	1.34	3.71**	1.16
Committee chair	1.97**	0.66	4.60***	1.24	0.70	0.75	-0.29	0.83
Senator	0.73	0.68	-0.26	1.20	-0.19	0.90	4.90***	0.96
Persuasive power:								
Years of experience (log)	0.38	0.30	-0.03	0.46	0.25	0.42	-1.08	0.71
Prior election support	-0.02	0.01	-0.04	0.02	0.02	0.01	0.06	0.03
Centrality	-1.95	1.41	-1.28	2.72	-3.83*	1.78	-3.20	2.04
Closeness	-1.05***	0.31	-0.97*	0.46	-1.14**	0.42	-0.84	0.61
Female	-0.66	0.62	-0.57	1.09	-0.53	0.76	-0.06	0.76
Control variables:								
Republican	1.83***	0.56	-0.76	0.98	4.82***	0.81	3.37***	0.82
African American	-1.26	0.75	-1.73	1.26	-2.09*	0.95	0.12	1.17
Dist. to floor median	-4.13***	0.66	-4.27***	0.99	-2.12	1.53	-8.56***	1.63
Dist. to majority median	-1.82*	0.71	-1.61	0.97	-3.17	1.70	1.01	1.53
Local bills	0.71***	0.04	0.80***	0.06	0.37***	0.08		
Term varying intercepts	Included in all models							
N	2,697		1,426		689		582	
R ²	.44		.25		.62		.71	
Adjusted R ²	.44		.23		.61		.70	

Note. Dependent variables are state legislators' hit rates as variables drawn from binomial probability distributions, expressed as percentages (see text for detailed description).
 p* < .05. *p* < .01. ****p* < .001 (two-tailed tests).

The indicia of formal, hierarchical power are positively related to legislative effectiveness. The partial regression coefficients for majority party members, majority party leaders, and committee chairs are positive and statistically significant in regression model that combines all three state samples. These variables are also positive and statistically significant in at least one state each and in each state, at least one form of formal, hierarchical power significantly increased legislative effectiveness. Senators in Michigan are significantly more effective than their counterparts in the House but this difference is not found in Georgia or North Carolina. It is somewhat surprising to find that committee chairs were only significantly more effective in Georgia, but the inclusive and broad definition of committee chair used here may dilute the effect of chairing a standing committee.

Although recent research suggests informal, persuasive power is effective in Congress, the data analyzed here suggest this type of power does not play a large role in state legislatures. Given that prior work on Congress provides a baseline for our expectations about the legislative process generally, these nonfindings are remarkable.

Seniority, measured as the log of years of experience, afforded legislators no greater effectiveness in any state.²⁹ What about legislators strongly endorsed by voters in the preceding election? A legislator's popular appeal did not make him or her more effective in any of the three legislatures examined here.

As noted above, some contemporary research on the legislative process in Congress emphasizes the importance of interpersonal social skills, including extensive social networks and feminine leadership, in passing federal laws. In this study of state legislatures, I calculated legislators' centrality and closeness in their chamber's cosponsorship network. More connected legislators were not more effective lawmakers overall or in any of the three states studied. Instead, centrality and closeness correlated to less effectiveness in North Carolina. Closeness is also negatively correlated to effectiveness in Georgia and in the combined analysis. Legislators who can pass bills on their own may find no reason to add cosponsors (which potentially reduces credit claiming opportunities). In contrast to recent research which suggests female members of Congress more effectively navigate the federal legislative process than their male colleagues, this study does not find comparable gender differences among state legislators. Female state legislators are no more or less effective at making laws than their male colleagues. According to this analysis, informal, persuasive power does not make state legislators more effective.

The partial regression coefficients for the control variables are generally consistent with expectations and similar in the three states. It is interesting to note that Republican legislators were significantly more effective overall and in Michigan and North Carolina, but not in Georgia while African American legislators were less effective in North Carolina and Georgia but not statistically different than their colleagues in Michigan or Georgia.

These results allow us to develop composite profiles of legislators one would expect to be highly effective, as well as highly ineffective, in a state legislature. Highly effective state legislators rely on their formal authority; they belong to the majority party, hold a party leadership position and/or chair a committee. In contrast, ineffective state legislators are often members of the minority party and are close to other legislators in their chambers cosponsorship network. It seems that being an effective state lawmaker has very little to do with what one might consider a legislator's innate ability or social skills. Instead, the key to effective lawmaking appears to be occupying the right position in the legislative hierarchy. For constituents then, representative's value is not determined so much by the personal qualities of candidate but rather who other voters put into power because it is the larger political context that determines how effective the representative will be.

Discussion and Conclusion

This research reports the development and application of a valid, practical measure of effectiveness in state legislatures. Political scientists have long sought such a measure and it helps us test general theories of lawmaking in the context of state legislatures. A sound measure of effectiveness enables us to identify some of the more prominent features state lawmaking and understand why some state legislators are more effective than others are. I use this measure to test the proposition that institutional characteristics make specific leadership styles more or less effective. Specifically, I hypothesize and find that informal, persuasive leadership is not effective in the relatively primitive setting of state legislatures, where lawmaking is understood in terms

of formal, hierarchical authority. In this final section, I identify some limitations of this analysis and suggest some directions for future research.

State legislatures offer political scientists the opportunity to test whether we can generalize theories developed to explain lawmaking in Congress (Squire and Hamm 2005). This research contributes a theory that distinguishes lawmaking powers at the state and federal levels as well as an effective measurement strategy for testing the theory, but it is still limited to observations from three state legislatures. The determinants of legislative effectiveness in Michigan, North Carolina, and Georgia may not be the same as those in state legislatures with weaker committee systems, longer legislative sessions, or other institutional variations. State legislatures are incredibly varied. States that use unorthodox legislative procedures may make it difficult to identify which bills passed into law and who is responsible for them. Testing this account of lawmaking in other state legislatures at other times is an important direction for future research. At the same time, the legislative experience in these states may provide a better idea of what works in state legislatures generally than lawmaking in Congress does.

It is important to consider the possibility that the persuasive powers are important insofar as they help state legislators gain formal authorities like committee chairs and party leadership roles. Research suggests that popular, well-connected members of organizations are more likely to receive promotions (Burt 1992; Seibert, Kraimer, and Liden 2001). Party leaders and committee chairs do tend to be more experienced, better connected, and enjoy greater electoral support than their colleagues. One way to control for formal authority and assess whether informal powers make legislators more effective is to restrict the analysis to minority party legislators. This analysis, reported in Online Appendix 6, indicates that informal powers do not make minority party legislators more effective. One can also analyze which legislators are elected party leaders and appointed to chair committees when a party gains control of the chamber. More research is needed, but I find that when Republicans took control of the North Carolina House in 2010, they did not promote members with high centrality or closeness in the prior term nor did they elevate more senior, female, or electorally secure members.

One of the main difficulties in this research is operationalizing abstract concepts effectively. The issue of measuring legislative effectiveness has been discussed at length, but other interesting measurement issues have only been briefly addressed. Measuring the informal, persuasive power is far more challenging than identifying formal, hierarchical power. As I cautioned above, there is no standard measure of a concept as familiar as the “workhorse” legislator, much less individual traits like integrity and charisma that we may find correlate to effectiveness when properly measured.

Although this research has limitations and does not complete a thorough testing of existing legislative theories in state legislatures, it does contribute to our understanding of the general patterns of lawmaking in American legislatures. In state legislatures, effectiveness may be viewed as the ability to pass bills into law and the state legislative process appears to be fueled by a different type of power than the federal legislative process is. A realistic measure of state legislative effectiveness suggests that state lawmaking is predominately a function of formal, hierarchical authority rather than informal, persuasive powers which characterize effective members of Congress.

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Notes

1. To be clear, existing research does not suggest that formal, hierarchical authority is irrelevant in Congress; rather, recent research suggests that persuasive powers, like network centrality and leadership style, also determine who passes laws in Congress.
2. My distinction between formal and persuasive power is analogous to Nye's (2004) well-known distinction between "hard" and "soft" power in the content of international relations. One might also compare my distinction to that between of masculine and feminine leadership made by some feminist scholars. See Reingold (1996) for a cogent review of this literature. It is not my contention that one of these forms of power is better than the other, but rather that formal power works in some settings while persuasive power is better suited to other settings.
3. Congress is 7.4 *SDs* higher on the professionalism index than the average state legislature. If institutional conditions affect lawmaking, generalizations about Congress, an outlier on this scale, are unlikely to apply to state legislatures.
4. Contrary findings on the relationship between terms limits and professionalism, and the power of state legislative leaders are offered by Clucas (2007) and Carey et al. (2006). Relatedly, some may argue that the relatively primitive nature of state legislatures allows informal "good ol' boy" networks to exert more influence on the legislative process. I would expect high turnover in state legislatures to weaken such informal power structures. Empirical analysis is a useful way of testing competing expectations.
5. In a similar vein, Bratton (2005; 2006) measured legislative success in terms of whether a legislator's bill passed the chamber, but proceeded with bills, rather than legislators, as the unit of analysis.
6. This approach implicitly assumes that legislators want to pass the bills they sponsor into law. It is reasonable to posit that legislators want to maximize returns from their investment of time and resources in legislative service. This is not to say that making policy is the legislators' only goal, but being an effective legislator may be instrumental to achieving other goals, such as reelection and institutional prestige. Although passing bills into law is not a legislator's only goal, it is sufficiently an important function to warrant analysis independent of other aspects of legislative life.
7. Some may argue that a bill's author or primary sponsor(s) should get more "credit" for passing a bill than those who merely cosponsored the bill. It seems unfair not to take relative effort into account. It may not be fair that a particular cosponsor's name is more important to passing a bill than the author's hard work, but this is a political reality. "You can accomplish anything," according to former House Speaker Tip O'Neill and Gary Hymel

(1994, 187), “if you’re willing to let someone else take credit.”

8. This is equivalent to estimating the legislator’s hit rate in a Bayesian framework using a flat prior distribution. Specifically, the beta (1, 1) distribution is an uninformative conjugate prior to the binomial distribution. Given y observed successes in N attempts, the posterior distribution has a beta distribution with shape parameters $1 + y$ and $1 + N - y$. The density of this beta distribution is equal to the $L(p|y, N)$ function defined in the text if $N > 0$.
9. One may also consider using sample weights to model the relative uncertainty of some legislators’ hit rates. In Online Appendix 5, I analyze effectiveness in state legislatures using traditional hit rates with each observation (legislator) weighted by the number of bills sponsored by the legislator divided by the mean number of bills sponsored. This approach is inferior to the method suggested in the text because it addresses relative uncertainty only. Using sampling weights, a legislator who sponsors an average number of bills in an *active* legislature will be weighted the same as a legislator who sponsors an average number of bills in an *inactive* legislature although these legislators are really different. Using the method suggested in the text, the hit rates estimated in the inactive legislature will be more uncertain than those of legislators in an active assembly.
10. While researchers may emphasize different aspects of the legislative process to tabulate successes, these alternative measures are likely to be highly correlated with one another and the measure proposed here. Anderson, Box-Steffensmeier, and Sinclair-Chapman (2003, 373) found “similarities” among their counts of committee reports, floor votes, and law enacted “with coefficients generally in the same direction and nearly identical levels of statistical significance.” In the case of Georgia legislators, I found that the rate at which they passed bills into law correlates very highly (over 0.70) with the rate at which their bills are reported from committee, pass floor votes, etc.
11. The North Carolina Center for Public Policy Research (NCCPPR 2012, 4) asked respondents to base their rating on:

legislators’ participation in committee work, their skill at guiding bills through committee and floor debate, their general knowledge and expertise in special fields, the respect they command from peers, his or her ethics, the enthusiasm with which they execute various legislative responsibilities, the political power they hold (by virtue of office, longevity, or personal skills), their ability to sway the opinions of fellow legislators, and their aptitude for the overall legislative process.

For more information on the NCCPPR Legislative Rankings, see <https://nccppr.org/category/legislative-rankings>.

12. If legislators introduced identical bills in the House and Senate or a bill received a new bill number in the other chamber, I tallied outcomes for both House and Senate sponsors. I include local government bills. If elements of a legislator’s bill are incorporated into another bill that passed into law, the legislator does not receive for passing his or her original bill. This type of unorthodox lawmaking is likely limited on the state level. Most states limit bills to single subjects and require amendments to be germane (National Conference of State Legislatures 1996). The approach used here appears valid despite the vagaries of the legislative process. While researchers have typically disregarded these kind of indirect, remote “hits,” automated bill content analysis may enable future researchers to better identify the source of original sources of legislation (Burgess et al. 2016; Wilkerson, Smith, and Stramp 2015).
13. Although the NCCPPR’s legislative rankings are not normally distributed, I estimate a linear relationship with the explanatory variables. This approach is consistent with prior

- analyses of the NCCPPR Rankings (e.g., Box-Steffensmeier and Grant 1999) and the model diagnostics suggest this approach is sound.
14. Because I expect years of service to have diminishing reputational benefits, I take the natural log of years of service.
 15. There are some limitations to this approach to identifying substantively significant bills. Project Vote Smart (votesmart.org) identified roughly 30 bills per 2-year legislative term in North Carolina from 2006 to 2012. Given the limited number of key vote bills, roughly one-third of North Carolina legislators did not sponsor such a bill and one-half did not pass a single bill subject to a key vote. Also, the organization defines key vote in a way that emphasizes political controversy rather than policy significance. Consistent with the group's educational mission, a close, partisan vote on a relatively minor bill is more likely to be identified as a key vote than a lopsided vote passing landmark legislation.
 16. The R Program simplifies this task. For legislator_i who sponsored numbill_i and passed lawmade_i: $\text{hitrate}[i] = r\beta(n=1, \text{shape1}=\text{lawmade}[i]+1, \text{shape2}=\text{numbill}_i - \text{lawmade}[i]+1)$
 17. To estimate standard errors correctly, I manually set the appropriate degrees of freedom before summarizing the regression model results. I settled on using one hundred sets of observations largely by trial error. With this many sets of observations, the regression coefficients vary only in the thousandths from one estimate to the next and the computations proceed efficiently on a standard desktop computer.
 18. We would obtain the same general results using traditional hit rate measures rather than the approach suggested here. The partial regression coefficients in reported in Table 1 are relatively large and insensitive to outliers. Traditional hit rate measures will actually yield slightly higher model fit statistics because they treat the observed success rate as a known, fixed quantity without any measurement error. Further analysis with state data sets, using traditional hit rates (as the dependent variable) to analyze why some legislators are more effective than others are, available in Online Appendix 4, suggests traditional approaches can generate misleading results.
 19. In North Carolina, the Speaker of the House and Senate's President Pro Tempore sponsor very few bills, but are nonetheless viewed as highly effective lawmakers. Legislators who sponsor few bills are not excluded from this analysis, but their hit rates are not very informative. An interesting question is whether legislative effectiveness increases with tenure. Table 1 results indicate that inexperienced legislators are ranked lower than their colleagues controlling for other factors. However, Table 2, below, suggests years of service does not increase legislative effectiveness. Taken together, these results imply that legislators gain a reputation for effectiveness, rather than actual effectiveness, as they gain experience.
 20. Similarly, we think the federal legislative process is driven by "workhorses" who take primary responsibility for bills rather than "show horses" who are more concerned about taking positions than making laws (Matthews 1959; 1960). This is a potential source of informal power to test empirically. There is, however, no standard method of distinguishing workhorses from show horses. As Payne (1980, 431) notes "the ambiguity of the phrase precludes a conclusive, or absolutely valid, measure." Some scholars have analyzed federal committee records to identify workhorses at the federal levels (e.g., Esterling 2007; Hall 1987; Payne 1980). Comparable analysis of state legislators' participation in committee meetings is not impossible. Georgia does not publish transcripts of either floor debate or committee hearings. Committee meeting minutes are available from Michigan and North Carolina (in print only), but they provide no record of questions members asked.

21. Hypothesizing that no relationship between variables presents a problem for classic null hypothesis testing. In the results section, I test whether statistically significant relationship exist, but expect not to reject the null hypothesis for reasons stated in the text.
22. My brief account does not convey the subtlety and nuance in the literature on gender differences and lawmaking (Rosenthal 1998; 2002). Anzia and Berry (2011), for example, attribute the legislative success of female members of Congress to selection effects while Volden, Wiseman, and Wittmer (2013) maintain that feminine leadership is an advantage while in the minority party, but not as a member of the majority party.
23. The Georgia General Assembly bill summaries list only the first six sponsors of bills and resolutions (National Conference of State Legislatures 1996). For the sake of brevity, I analyze whether this limitation on bill sponsorship causes systematic bias in the Georgia results in Online Appendix 7. Because the variables used in the statistical model highly correlate with those estimated from complete sponsor lists, the data availability problem appears to only affect the intercept terms which are not directly interpreted here. North Carolina House Rule 31.1 restricts members to authoring 15 bills but the Rule makes exceptions for local bills and bills recommended by committees; it puts no limits on cosponsorship. Analysis of bill authoring by North Carolina Representatives suggests the Rule does not present a real limitation on the legislative process. North Carolina Representatives do not pass bills at higher rates because chamber rules encourage them to focus on higher quality proposals (see Table 2). Although bill introduction/sponsorship limits do not appear to affect this research, limitations imposed by other states (see National Conference of State Legislatures 1996 for an overview) may present challenges and interesting opportunities for future research. In states where bill introduction/sponsorship limits have real teeth, one would expect legislators to make the most of their limited opportunities by introducing or sponsorships bills likely to pass into laws. This article offers a helpful suggestion for comparing legislators' hit rates.
24. An alternative approach would be to estimate a bill-level model that explains the probability of bill passage as a function of variables related to bill content and sponsors. The variation among the bill sponsors could then be explained in terms of legislator-varying characteristics like formal authority and personal traits in a multilevel model. Here, information on bill content is limited to whether a bill subject is local in scope (as opposed to a general bill). The approach followed here treats legislators' hit rates as statistics estimated with uncertainty from bill-level data but proceeds on a level with legislators as the unit of analysis. A bill-level model would be preferable if one wants to explain why some bills become laws and others fail rather than why some legislators are more effective than others are.
25. I estimate network statistics using a weighted adjacency matrix because nearly all legislators are linked by some common bill and the number of times legislators cosponsor bills tells us more about the link between them than a simple 0/1 coding. I use the *igraph* R Package to estimate network statistics for each chamber-term (Csardi and Nepusz 2006). The closeness statistic is scaled to account for differences in chamber size.
26. In some cases, I supplemented official publications with web searches on individual legislators to identify their race. Proper analysis of the impact of race on politics is beyond the scope of this article which only considers race as a control variable.
27. Available from <http://americanlegislatures.com>. State legislators' ideal points are estimated on a single dimension with lower values representing more liberal policy preferences. The typical Democrat measures roughly -1.0 and the typical Republican, $+1.0$. In the states studied here, the mean distance to floor median was 0.86 and mean distance to majority median was 0.97. These control variables were not available to Kirkland (2011) or Arnold et al. (2000), and may

- account for their conflicting on the role of social relationships in state legislatures. Peoples (2008) rejects ideological estimates derived from roll call votes as tautological.
28. Of course, local legislation is not certain to pass. Gamm and Kousser (2013) report that local legislation sponsored by large urban delegations is less likely to pass than are other local bills (although still more likely to pass than general bills).
 29. If we do not log years of prior experience and measure legislative experience simply as the number of years served, the partial regression coefficient for experience is not statistically significant in any state at the .05 level. In the aggregate model, however, one additional year of experience correlates to a 0.15 increase in hit rate and this coefficient is statistically significant at the .001 level. So seniority gains are evident in some alternative estimation methods.

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