

## Which Legislators Pay Attention to Other States' Policies? Comparing Cosponsorship to Floor Voting in the Diffusion of Renewable Portfolio Policy

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*Diffusion research has focused predominantly on analyzing collective decision making at the adoption stage. We evaluate diffusion at the level of the individual legislator and examine whether external cues play a stronger role in legislator decision making in cosponsorship versus adoption via floor voting. Leveraging data on successful and failed efforts across the U.S. states to adopt renewable portfolio standards (RPS), we show that the cue of ideological similarity matters more for RPS diffusion during adoption than cosponsorship. The result validates copious research that investigates external cues at adoption without considering that such cues might exert stronger influence earlier in lawmaking. Moreover, in devising a method to assess whether legislators are differentially receptive to cues from other states (here, we compared the baseline of adoption against cosponsorship), we provide scholars with a framework to further explore the question of whether external influence may be more pronounced among some legislators than others.*

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**KEY WORDS:** policy diffusion, legislative politics, federalism

政策扩散研究主要聚焦于分析政策采纳阶段的集体决策。我们评价了单个立法者层面的政策扩散并检验了外部线索 (*external cues*) 对“共同提案过程中的立法者决策”发挥的作用是否比其对“通过全体投票决定政策”发挥的作用更强。利用有关美国各州在采取可再生能源配额制 (RPS) 一事上所取得的成功和失败数据, 我们表明, 在思想上相似的线索在政策采纳期间比共同提案期间对RPS扩散更为重要。结果证实了大量研究, 后者调查了采纳阶段的外部线索, 但没有考量这些线索可能在早期对立法产生更强的作用。此外, 在设计方法评估立法者是否有差别地接受其他州提供的线索时 (此处我们比较了共同提案与政策采纳的基准), 我们为学者提供一个框架, 以进一步探究外部影响是否对一些立法者而言更为重要这一疑问。

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关键词: 政策扩散, 立法政治, 联邦主义

La investigación de difusión se ha centrado principalmente en analizar la toma de decisiones colectiva en la etapa de adopción. Evaluamos la difusión a nivel del legislador individual y examinamos si las señales externas juegan un papel más importante en la toma de decisiones del legislador en el copatrocinio versus la adopción a través de la votación en el piso. Aprovechando los datos sobre esfuerzos exitosos y fallidos en los estados de EE. UU. Para adoptar estándares de cartera renovable (RPS), mostramos que la señal de similitud

ideológica es más importante para la difusión de RPS durante la adopción que el copatrocinio. El resultado valida la abundante investigación que investiga las señales externas en la adopción sin considerar que tales señales podrían ejercer una influencia más fuerte al principio de la legislación. Además, al diseñar un método para evaluar si los legisladores son diferencialmente receptivos a las señales de otros estados (aquí, comparamos la línea de base de la adopción contra el copatrocinio), brindamos a los académicos un marco para explorar aún más la cuestión de si la influencia externa puede ser más pronunciada entre algunos legisladores que otros.

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**PALABRAS CLAVE:** difusión de políticas, política legislativa, federalismo

### Introduction

A celebrated feature of federalism is the ability of subnational governments to experiment in policymaking, allowing for best practices to spread or “diffuse” across subnational governments and become co-opted by national governments (Rogers, 1962). In American federalism, much of the policy diffusion occurs in the states and involves legislatures, which are the chief institutions tasked with crafting policy. Since Walker (1969) arguably spawned diffusion studies, much work has looked at how diffusion occurs across legislatures and illuminated our knowledge of how state legislatures look to other states for guidance in making policies. A common finding, for example, has been that geographic proximity matters for diffusion, as state legislatures look to nearby states for policy templates (Berry & Berry, 1990; Berry & Baybeck, 2005; and Shipan & Volden, 2006). Another important finding reveals that ideological proximity facilitates diffusion, as state governments look to states that “look like them” ideologically to determine the appropriateness of policies to be borrowed (Carley, Nicholson-Crotty, & Miller, 2017; Grossback, Nicholson-Crotty, & Peterson, 2004; Volden, 2006). The role of ideology in facilitating diffusion has also been shown in comparative and cross-national contexts (Gilardi, 2010).

The work above has been crucial in identifying pathways contributing to cross-state diffusion. However, the bulk of it has focused on collective rather than individual actors as the unit of analysis and has given attention to the role of *legislatures* rather than *legislators* in advancing diffusion. While analyzing legislatures makes sense given that policy change is a collective enterprise, neglecting individual legislators has led to two weaknesses in diffusion research. One weakness is that our focus on macro-level explanations means that we have not captured individual-level explanations that might relate to diffusion. Take the finding that closer ideological proximity between states increases the possibility for diffusion. It is one thing to look at the Illinois and Oregon legislatures and say that these legislatures borrow policy ideas from one another given ideological contiguity.<sup>1</sup> It is another thing to look at a legislator from Central Illinois or Eastern Oregon, regions with distinct ideologies from the dominant ideology expressed in each state, and ask about what ideological source states provide that legislator with their policy ideas. Insofar as that legislator’s ideas shape their state legislature’s policy-making agenda, accounting for that legislator’s own diffusion

influences would lead to a richer picture of diffusion than just focusing on collective factors (Iyengar & Hahn, 2009). Indeed, recent work (Carley & Nicholson-Crotty, 2018) interviewing state legislators finds that the legislators use their impressions of which states are ideologically similar to guide policymaking, suggesting that we take individual-level state ideological similarity into account in empirical models.<sup>2</sup>

The second weakness of ignoring individual legislators centers on the attention given to policy adoption over earlier stages in the policy-making process. Adoption clearly matters since it is the stage of policymaking where formal policy change occurs. Many diffusion studies focus solely on adoption: a review of the diffusion literature (Graham, Shipan, & Volden, 2013) identifies nearly 800 pieces on policy diffusion, emphasizing that the bulk of these just examine adoption. The focus on adoption has led to an underexploration of earlier stages in the policy-making process where the influence of other states on legislative policymaking may be comparatively different (stronger or weaker) than at adoption. By not comparing the influence of other states on legislative policymaking at adoption versus earlier stages of the lawmaking process, we do not know whether adoption represents the “tip of the iceberg” or the epicenter of cross-state influence; knowing this answer would help us contextualize the large adoption-only diffusion scholarship in terms of whether we should revisit this scholarship from the perspective of pre-adoption diffusion dynamics. To compare the influence of other states at adoption versus earlier stages effectively, we trade a collective legislature for an individual legislator-level of analysis. This is because *individual legislators within a legislature* typically vary (and vary differentially) in their decision making across stages of the lawmaking process (for example, the legislators cosponsoring a bill are typically *not* the only legislators voting to adopt the bill); looking at a collective legislature treats all legislators within that legislature as the same (Karch, Nicholson-Crotty, & Woods, 2016) and precludes examination of how legislators within the legislature participating in different stages of the lawmaking process can differentially be influenced by the policy experiences of other states.<sup>3</sup>

Here, we evaluate diffusion from an individual legislator perspective and determine whether ideological contiguity (a key pathway of other state influence detected in the diffusion literature) matters more for adoption floor voting than cosponsorship. Cosponsorship is a pre-adoption activity in which cosponsors endorse or sell (Kessler & Krehbiel, 1996) legislation to members of their wider legislature. Different views exist about how much detail cosponsors put into trying to convince their colleagues; these different views create different expectations about whether the influence of other states is more pronounced on decision making at cosponsorship versus adoption. Cosponsorship is one of the most common ways in which legislators can take part in advancing legislation before voting to adopt and is an important way in which legislators signal to their colleagues their support for legislation (Box-Steffensmeier, Christenson, & Craig, 2019). Comparing the influence of other states at cosponsorship versus adoption signifies a way to validate if the diffusion literature’s adoption-only focus (Gilardi & Wasserfallen, 2019; Graham et al., 2013) actually captures the stage of lawmaking (adoption) purported to be the epicenter of diffusion. We leverage a unique dataset capturing cosponsorship and adoption floor voting by U.S. state legislators concerning renewable portfolio standards (RPSs).

RPSs are policies levied on electric companies where the companies generally must derive some amount of electricity distributed to end-users from renewable sources (Rabe, 2007). Analyzing cosponsorship and floor voting in the same policy area provides a stable basis for comparing diffusion across different stages of lawmaking. Looking at RPSs is beneficial since the cross-state diffusion of RPSs has been studied at the macro level (Carley et al., 2017), meaning we can use collective explanations as a starting point to explore the individual level. RPSs are also recent (the vast majority have been adopted since 2000), allowing us to assemble data with over 17,000 observations for cosponsorship and over 4,000 observations for adoption floor voting.

Comparing the strength of interdependence in cosponsorship versus adoption by looking for linkages between an individual legislator in a state considering to adopt a policy and a different source state that already adopted a similar policy, we find consistent statistical evidence that the effect of ideological contiguity between the legislator in the state considering the policy and the source state that has adopted a similar policy is larger during adoption floor voting than cosponsorship. We also find that ideological contiguity achieves statistical significance with respect to adoption floor voting but not cosponsorship. The result suggests that ideological diffusion matters more for adoption floor voting than cosponsorship and provides some validation for existing diffusion research (e.g., Graham et al., 2013) insofar as that research has only looked at diffusion during adoption and not compared the influence of other states across stages of lawmaking. Scholars have put forth two visions of how cosponsors advocate legislation for members of the wider legislature: one is a high-effort vision where cosponsors learn about the policy experiences of other states to better convince colleagues to adopt legislation under consideration (Fowler, 2006a, 2006b; Gilligan & Krehbiel, 1997); and the other is a lower-effort vision where cosponsors use the act of cosponsorship to signal their support for legislation but do not invest in learning about other states' policies to convince colleagues to adopt the legislation (Bernhard & Sulkin, 2013; Mayhew, 1974). High-effort advocacy could include cosponsors utilizing the policy adoption experiences of ideologically similar states to convince co-ideologues in their own legislature to adopt similar legislation, as diffusion research (Carley & Nicholson-Crotty, 2018; Grossback et al., 2004) indicates that legislators use whether ideologically similar states have adopted a policy as a gauge for determining if advancing similar legislation in their own legislature comports with their own ideological preferences. The link between ideological contiguity and adoption but not cosponsorship, we argue, could stem from the second vision of cosponsorship prevailing over the first; as cosponsors do not alleviate the uncertainty of legislators at the adoption floor voting stage regarding whether advancing policy is palatable with their (the floor voting legislators') own ideological preferences, floor legislators turn to the experiences of ideologically similar states for guidance on how to vote. Our framework facilitates the integration of adoption-only diffusion research with the "beyond adoption" focus that many scholars are now emphasizing (Gilardi & Wasserfallen, 2019, pp. 1251–52); the framework also allows researchers to explore how a host of individual-level factors potentially influence diffusion.

## Tweaking Conventional Approaches to Evaluating Diffusion

Since the advent of diffusion studies, the vast majority of scholars have investigated diffusion from a collective legislature rather than an individual legislator perspective *and* focused solely on adoption. Seminal works like Walker (1969), Gray (1973), Berry and Berry (1990), Volden (2006), Shipan and Volden (2006), and Boushey (2010) all fit this pattern. Similarly in the RPS space, among other pieces, Carley and Miller (2012) and Carley et al. (2017) also fit this pattern. While the attention given to collective decision making and the adoption stage is understandable (given that policy adoption requires collective approval, and given that adoption data have historically been easier to collect than data corresponding to other stages of lawmaking), this attention has limits in terms of what it can tell us about diffusion. As Graham et al. (2013), Gilardi and Wasserfallen (2019), and Gilardi, Shipan, and Wüest (2020) suggest in recommending to move beyond adoption, diffusion scholars implicitly assume that adoption is the stage where the influence of other states is most impactful insofar as these scholars have ignored comparing the influence of other states at adoption versus other stages of lawmaking.

The issue of an adoption-only focus is exacerbated by the lens of collective decision making, which all the works cited in the previous paragraph do. Legislators within a legislature can vary from each other in their decision making across stages of the lawmaking process. This is to say that the group of legislators in a legislature cosponsoring a bill is usually not equivalent (in terms of the number and identity of legislators) to the group of legislators in that legislature voting to adopt the same bill. A collective perspective ignores how legislators within a legislature vary in terms of their own dependent and independent variables, muddying our ability to evaluate whether the influence of other states on legislators in a legislature may differ across lawmaking stages; our individual-level framework makes such an evaluation feasible by explicitly incorporating individual (within-legislature) variation into the analysis.

While many scholars have hinted at the possibility that the influence of other states could be different at various points of the lawmaking process, to our knowledge, no one has examined this directly. Karch (2012), building on Hays and Glick (1997), uncovers the possibility that diffusion could occur early (for example, during agenda-setting) in the lawmaking process but leaves it to the future scholarship to investigate diffusion across stages of lawmaking. More indirectly, a possible untested implication of the policy entrepreneur work of Kingdon (1984) and Mintrom (1997) is that a subset of legislators characterized by the high involvement of their engagement with legislation could have a different level of receptiveness to the policy developments of other states compared to peers with lower involvement.<sup>4</sup> Scholars are also recognizing the need for individual-based analyses of diffusion. Butler, Volden, Dynes, and Shor (2017) exhort researchers to utilize an individual-level approach, as “current empirical research cannot discern” how “individual-level factors may influence diffusion” (Butler et al., 2017, p. 37). In an interview with state-level officials, Carley and Nicholson-Crotty (2018) also find that individual opinions of similar peer states may affect decision making. However, neither of

these works interrogate whether the influence of other states differs across stages of the lawmaking process.

We heed the advice of the above scholars and investigate diffusion across lawmaking, to give contextual clarity to adoption-only literature by comparing it against another legislative stage and to provide researchers with an empirical framework for addressing how factors that vary within a legislature can influence diffusion. Given that extant research on diffusion has been dominated by a singular look at adoption, a natural consideration concerns which lawmaking stage should be compared against adoption. We believe that cosponsorship, a pre-adoption stage that has been underexplored in the diffusion literature, is a good candidate to compare with adoption. Like voting to adopt, cosponsorship has been positively linked to bill advancement (Bernhard & Sulkin, 2013), which means that we are comparing stages that are consequential.<sup>5</sup> Cosponsorship is also a common practice across the states, which matters so that we can make a realistic comparison (if cosponsorship simply did not occur in several states, our comparison would face a problem of applicability). Finally, differing views about how much effort cosponsors put into selling legislation to members of their wider legislatures potentially translate into different expectations regarding whether the influence of other states is more pronounced at cosponsorship versus adoption.

The RPS policy area is worth using to compare cosponsorship and adoption. Besides the fact that we can locate individual-level cosponsorship and adoption data for RPS, the cosponsorship and attempted adoption of RPS has occurred in the vast majority of states, meaning that we are studying a policy that has applicability across a wide rather than narrow grouping of states. Moreover, RPS has been shown to be an area where policies actually diffuse, as Carley and Nicholson-Crotty (2018) qualitatively discovered via interview that state officials consult the policy-making behavior of ideologically similar states prior to making their own decisions. Like quantitative work about RPS diffusion (Carley & Miller, 2012; Carley et al., 2017) and non-RPS work on ideological diffusion (such as Grossback et al., 2004, which is cited broadly), the interview finding of Carley and Nicholson-Crotty (2018) does not compare diffusion across stages of lawmaking, opening a path for us to make this comparison and provide context to adoption-only diffusion literature.

### **Diffusion in Cosponsorship Versus Adoption Floor Voting**

We now explore how the importance of diffusion may differ at the cosponsorship versus adoption floor voting stage of the legislative process.<sup>6</sup> Based on the well-established finding in the diffusion literature (see Graham et al., 2013) that policy spread is facilitated by policymakers in one state looking for cues about the choices they should make by observing decision making in source or reference states, we seek to evaluate whether legislators at cosponsorship versus adoption have a greater likelihood of utilizing other-state cues relative to one another.

We specifically investigate how the possible utilization of other-state cues based on ideological contiguity (or similarity) may differ at cosponsorship versus adoption.<sup>7</sup> Our focus on ideological contiguity not only comes from it being recognized as

a key pathway of diffusion (see Mallinson, 2020) but also comes from it being named (though not used to compare other-state influence at different stages of lawmaking) as a pathway of RPS diffusion (Carley & Miller, 2012; Carley & Nicholson-Crotty, 2018; Carley et al., 2017). It is beneficial to use a pathway named in the RPS diffusion literature to explore possible diffusion differences across lawmaking stages (and thereby examine if the adoption stage is the epicenter of diffusion activity) so that our analysis is valid, as using a pathway *not* identified in the literature may generate an uninformative answer.<sup>8</sup>

In the diffusion literature (Grossback et al., 2004; Volden, 2006; Volden, Ting, & Carpenter, 2008), the link between ideological contiguity and diffusion is based on the idea that lawmakers deciding whether to advance legislation can face uncertainty about if doing so moves policy toward their own ideological preferences.<sup>9</sup> In response to this uncertainty, lawmakers consult the adoption experiences of other states and pay attention to whether ideologically contiguous states have adopted a policy similar to the legislation under consideration.

Seeing that an ideologically contiguous state has already adopted a similar policy (compared to if an ideologically contiguous state has not adopted a similar policy) makes lawmakers more likely to advance the legislation in their own state, as the lawmakers use the fact that ideologically contiguous states adopted a similar policy to validate the ideological fit of advancing the legislation in their state.

We follow the logic explicated by the scholars in the above paragraph and outline why the influence of ideologically contiguous states may vary across stages of bill advancement.<sup>10</sup> Understanding how the influence of ideologically similar states could vary across stages of lawmaking requires articulating why lawmakers at different stages could be differentially receptive to learning about the policy-making experiences of ideologically similar states.

At first glance, one might assume that cosponsors rely less on cues from ideologically contiguous states than voters on the floor. An important assumption made about cosponsorship shown with interview data (Koger, 2003) is that, *ceteris paribus*, cosponsors of a bill are generally more enthusiastic about the bill than are members of the wider legislature. This assumption of greater enthusiasm among the population of cosponsors comes from the idea that in choosing to cosponsor, cosponsors are committing to publicly endorse and support a bill in a way that members of the wider legislature are not (the assumption being that, *ceteris paribus*, it takes more enthusiasm about a bill to make such a public commitment than not do so). Higher enthusiasm has been linked to lower uncertainty (Parinandi, 2020; Weyland, 2007) based on the idea that greater belief in the intrinsic worth of a bill can serve as a substitute for needing confirmation that similar policy has been adopted in ideologically similar places; one may have less need for confirmation if one believes in the intrinsic merit of a bill. Given that cosponsors of a bill are assumed to be more enthusiastic about the bill than members of the wider legislature; given that ideological contiguity is a form of confirmation; and given that the adoption floor voting stage features greater participation from the wider legislature than the cosponsorship stage,<sup>11</sup> it is possible that ideological contiguity is more pronounced at the adoption floor voting stage than cosponsorship.<sup>12</sup>

Even acknowledging the assumption (Koger, 2003) linking higher enthusiasm to cosponsorship, however, it is possible that cosponsors could be *more* reliant on cues from ideologically contiguous states than are floor legislators at the adoption stage. Specifically, different conceptualizations about how much effort cosponsors put into selling a bill to members of the wider legislature have potentially different implications as to whether the influence of ideological contiguity is more pronounced at cosponsorship versus floor adoption. We go over the different conceptualizations along with their associated hypotheses in turn.

In the first conceptualization, posited by Fowler (2006a, 2006b), some cosponsors, whom we call *high-effort* cosponsors go beyond using the cosponsorship signal itself (Kessler & Krehbiel, 1996) as the primary way of selling a bill's worth to other legislators and seek to provide greater detail to co-ideologues in their wider legislature (Fowler argues that cosponsors have more influence with legislative peers who share similar ideology compared to those who do not) about why the co-ideologues should vote to adopt the bill.<sup>13</sup> One valuable detail that cosponsors could provide to co-ideologues in their wider legislature is information about whether ideologically contiguous states have adopted a policy similar to the bill under consideration in their legislature, as knowing that ideologically contiguous states have already adopted similar policy makes legislators more likely to support a bill by giving those legislators confirmation that states with analogous preferences have adopted a similar policy (Grossback et al., 2004). Given the archetype of high-effort cosponsors providing detailed information to co-ideologue colleagues to raise bill support among those colleagues (Fowler, 2006a, 2006b), and given that ideological contiguity raises bill support among those legislators who exhibit greater uncertainty about the ideological fit of the bill (recall that Koger, 2003 links higher bill enthusiasm to cosponsors compared to members of the wider legislature, and recall that Weyland, 2007 and 2020 link greater uncertainty to lower enthusiasm), it is plausible that cosponsors might give information about ideologically contiguous adopting states to co-ideologue colleagues to elicit their bill support.

Given that members of the wider legislature are posited to receive information about the policies of other states from cosponsors, the matter of whether the influence of ideologically contiguous states is more pronounced at cosponsorship versus adoption boils down to whether the proportion of cosponsors that care about utilizing the policy adoption experiences of ideologically contiguous states to sell legislation to colleagues in the wider legislature is greater than the proportion of colleagues in the wider legislature that care about utilizing the same information in their own adoption decisions. Fowler's (2006a, 2006b) work is again instructive. A possibility to recognize is that cosponsors consider that legislative colleagues within their own networks might have different levels of support for a bill, suggesting that the cosponsors have information about the policy adoption experiences of ideologically contiguous states at their disposal to burnish support among more uncertain members in their networks. This consideration by cosponsors need not be static, as cosponsors may use the anticipation of uncertainty among members in their networks to seek out information regarding ideological contiguity. Given that the form of cosponsorship put forth in the high-effort archetype implies that cosponsors have



an answer for potential uncertainty among legislators in their networks, it is possible that cosponsors routinely gather information about policymaking by ideologically contiguous states and are, therefore, influenced by those states.

It is also possible that a higher proportion of cosponsors (compared to members of the wider legislature voting on adoption) may be influenced by policymaking from ideologically contiguous states, and the reason emanates from cosponsors needing to take the uncertainty of other legislators into account, while members of the wider legislature voting on adoption do not. While some members of the wider legislature may be uncertain about their own adoption choices and find information about ideological contiguity to be useful, other legislators may be certain and ignore such information; cosponsors, however, may be less able as a group to ignore this information since they need it to ameliorate potential uncertainty regarding bill support among some legislative colleagues in their networks. An implication of this possibility is that ideological contiguity could be more pronounced at cosponsorship over adoption.

*Ideological Contiguity Influences Cosponsorship more than Adoption Floor Voting Hypothesis*

The size of the effect of ideological contiguity between a legislator in a state considering a policy and another state that has already adopted a similar policy will be larger during the cosponsorship stage than the adoption floor voting stage.

The second conceptualization allows for the possibility that the influence of ideologically contiguous states may be more pronounced at adoption compared to cosponsorship. In this conceptualization, which we call the *lower-effort* conceptualization and which is posited by Bernhard and Sulkin (2013) among others, cosponsors regard being officially listed as a cosponsor to be the chief way in which they sell a bill to members of the wider legislature and generally do not (unlike in the first characterization) provide greater detail to members of the wider legislature about why those members should support the bill. This implies that compared to the first characterization, members of the wider legislature in the second characterization are less likely to view cosponsors as a go-to source to provide confirmatory information about the ideological fit of the bill. However, it is precisely members of the wider legislature that derive greater value from such confirmatory information, as the wider legislature has been hypothesized to have less bill enthusiasm than cosponsors (based on the interview data in Koger, 2003); and as less enthusiasm has been linked (2020; Weyland, 2007) to greater uncertainty in decision making. Given that the signal gleaned from ideological contiguity can help resolve indecision by providing legislators with confirmation about bill fit (Grossback et al., 2004), it is plausible that members of the wider legislature could seek out this information to guide them with the decision to adopt. When the possibility that the wider legislature has a greater need for confirmation is viewed alongside the possibility from the second conceptualization (Bernhard & Sulkin, 2013) that cosponsors may not even provide such information to members of the wider legislature, it is possible that the

influence of ideologically contiguous states may be more pronounced at adoption over cosponsorship.

*Ideological Contiguity Influences Adoption Floor Voting More than Cosponsorship Hypothesis*

The size of the effect of ideological contiguity between a legislator in a state considering a policy and another state that has already adopted a similar policy will be larger during the adoption floor voting stage than the cosponsorship stage.

We emphasize some points prior to empirics. First, we follow the lead of Fowler (2006a, 2006b) and Bernhard and Sulkin (2013) and do not systematically evaluate how cosponsors determine how much effort to put into selling a bill. Rather, our goal is to acknowledge the existence of the two conceptualizations and investigate how each potentially engenders different implications regarding the influence of ideological contiguity on cosponsorship versus adoption floor voting. While our analysis could allow observers to infer which conceptualization may be more common, and while we control for factors (like whether a legislator belongs to the majority party, in Table A10 of supporting information; or whether a legislator is a member of a committee with jurisdiction over a bill, in Table A14 of supporting information) that could ostensibly influence how much effort is put into selling a bill via cosponsorship, we suggest that systematically exploring why and measuring how cosponsors vary in their effort makes for worthwhile future research.<sup>14</sup> Second, we emphasize that our hypotheses and analysis are probabilistic rather than deterministic: while ideological contiguity makes legislative action more likely according to the pathways set forth in the competing hypotheses, the presence of ideological contiguity does not imply that such legislative action occurs automatically. Furthermore, like others (Carley et al., 2017; Grossback et al., 2004) we believe that there is no one universal way through which legislators learn about the policies of ideologically contiguous states. Rather, legislators deciding whether to advance legislation are simply more likely to utilize the tools at their disposal to find out about policies in ideologically contiguous states to guide their decision making: legislators could do this through utilizing resources such as the National Conference of State Legislatures (which has been identified in Boushey, 2010, as a common way that legislators learn about other states' policies) or could direct their own staff to find out about such policies. The point here is that there need not be a single way that legislators find out about other states' policies.

### Evaluating Our Arguments

We test our hypotheses using data on the cosponsorship and floor voting records of bills to adopt RPSs. RPSs are ideal to study for three reasons: they have diffused broadly, meaning observations are distributed across many states.<sup>15</sup> The breadth of states adopting RPS, considered alongside Carley and Nicholson-Crotty's (2018) interview findings showing that legislators look to other states to guide their energy

policymaking, matters because it suggests that RPS programs legitimately diffuse widely. Second, they have been relatively recent policy inventions: our data begin in 1994 when Minnesota's legislature adopted an early version of an RPS, and end in 2011, after which the diffusion of RPSs had mostly abated. The year 2011 is also the end point, as we cannot obtain information about a key control variable (geographic contiguity) after this year.<sup>16</sup> The recency of the data is desirable since most states digitized their legislative records in the late 1990s, meaning that we could locate cosponsorship and voting records at the individual legislator level for a large amount of RPS legislation. A third benefit of studying RPSs is that RPS diffusion has been studied at the aggregate level, and we can use the aggregate finding of ideologically driven diffusion to investigate how individual-level diffusion occurs at the cosponsorship and voting stages.

Our data collection effort is a major contribution of the project and has two goals: identifying all cases of cosponsorship on bills across the states dealing with the issue of whether a state will adopt an RPS; and identifying all cases of voting on state RPS adoption bills that advanced to a final floor vote where the question under consideration was *Shall the bill pass?* For successful cases of cosponsorship and voting, when a bill to adopt RPS becomes law, identifying cosponsorship and final voting is easy. The Database on State Incentives for Renewables and Efficiency (DSIRE), compiled and administered by the North Carolina Clean Energy Technology Center, tracks the names of successful state-level RPS bills. We use the bills named in DSIRE and state legislative archival websites to identify legislators who cosponsored those bills as well as the legislators who voted to adopt these bills. Legislators who did not cosponsor an identified bill enter the cosponsorship dataset as non-cosponsors; and legislators who chose not to vote "yes" on a bill under consideration for final approval enter the voting dataset as non-yes voters.

For unsuccessful bills, data collection is more challenging. No database exists identifying the names of unsuccessful RPS adoption bills; we gather cosponsorship and (if applicable) floor voting records on unsuccessful RPS adoption bills manually using state legislative websites. To find RPS adoption bills on state legislative archival websites, we use a set of identification rules. An RPS is a policy where a state typically requires an electric utility company to generate or sell some amount of electricity from renewable sources (Rabe, 2007).<sup>17</sup> We first search state legislative archival websites for bills that mention enacting a "renewable portfolio standard" or "renewable energy standard." If those phrases are not mentioned, we identify unsuccessful bills by searching the archival websites for any bill that mentions requiring utilities to obtain electricity from renewable sources.

For those states that eventually adopted RPS policies, we use the year when that state adopted an RPS as the upper bound of our search and find any preceding unsuccessful RPS adoption bills. The lower bound of our search for unsuccessful RPS adoption bills is the first year that a given state allowed for internet-based searching of its legislative archives.<sup>18</sup> For those states that did not adopt an RPS, we use 2011 as the endpoint and search each state's legislative records back to when those records were digitized. Table 1 displays the states in our data and includes,

**Table 1.** RPS Adoption and Attempted Adoption in the States in this Study

| State | Year Adopted | Adopting Institution | Unsuccessful Legislative Attempts |
|-------|--------------|----------------------|-----------------------------------|
| AK    | NA           | NA                   | Y                                 |
| AR    | NA           | NA                   | Y                                 |
| CA    | 2002         | Legislature          | N                                 |
| CO    | 2004         | Initiative           | Y                                 |
| CT    | 1998         | Legislature          | N                                 |
| DE    | 2005         | Legislature          | Y                                 |
| GA    | NA           | NA                   | Y                                 |
| HI    | 2001         | Legislature          | Y                                 |
| IL    | 2001         | Legislature          | N                                 |
| IN    | 2011         | Legislature          | N                                 |
| KS    | 2009         | Legislature          | N                                 |
| KY    | NA           | NA                   | Y                                 |
| LA    | NA           | NA                   | Y                                 |
| MA    | 1997         | Legislature          | N                                 |
| MD    | 2004         | Legislature          | N                                 |
| ME    | 1997         | Legislature          | Y                                 |
| MI    | 2008         | Legislature          | Y                                 |
| MN    | 1994         | Legislature          | N                                 |
| MO    | 2007         | Legislature          | Y                                 |
| MS    | NA           | NA                   | Y                                 |
| MT    | 2005         | Legislature          | Y                                 |
| NC    | 2007         | Legislature          | Y                                 |
| ND    | 2007         | Legislature          | Y                                 |
| NE    | NA           | NA                   | Y                                 |
| NH    | 2007         | Legislature          | Y                                 |
| NM    | 2002         | Regulatory agency    | Y                                 |
| NV    | 1997         | Legislature          | N                                 |
| OH    | 2008         | Legislature          | Y                                 |
| OK    | 2010         | Legislature          | Y                                 |
| OR    | 2007         | Legislature          | Y                                 |
| PA    | 2004         | Legislature          | Y                                 |
| RI    | 2004         | Legislature          | Y                                 |
| SC    | NA           | NA                   | Y                                 |
| SD    | 2008         | Legislature          | Y                                 |
| TX    | 1999         | Legislature          | Y                                 |
| UT    | 2008         | Legislature          | Y                                 |
| VA    | 2007         | Legislature          | Y                                 |
| VT    | 2005         | Legislature          | Y                                 |
| WA    | 2006         | Initiative           | Y                                 |
| WI    | 1998         | Legislature          | Y                                 |
| WV    | 2009         | Legislature          | Y                                 |

"NA" signifies that a state did not adopt an RPS as of 2011.

if applicable, the year in which a state established an RPS as well as if there were unsuccessful legislative attempts to do so.

We employ two dependent variables. *Cosponsorship* takes a value of 1 if a legislator in a legislature is listed as a cosponsor of a bill to adopt an RPS and a value of 0 if a legislator in that same legislature is not listed as a cosponsor on that bill. *Adopt* takes a value of 1 if a legislator in a legislature votes "yes" on a bill to adopt a state RPS and takes a value of 0 if a legislator in that legislature votes "no" on the bill to adopt a state RPS. Since not all cosponsored bills receive a final vote, there are more observations for cosponsorship than voting. We have 17,810 observations for the

cosponsorship data and 4,782 observations for the voting data. Our unit of analysis is legislator-bill-state-year. Since we only have data for instances when a bill to adopt an RPS program is formally under consideration by a state legislature (meaning that members of that legislature have cosponsored and/or are voting to adopt a bill to establish an RPS program), our data structure is appropriately described as a series of cross-sections rather than a panel. We recognize that a state's previous attempts at adopting an RPS program can influence its current attempts and include a variable controlling for a state's number of previous attempts at adopting an RPS program in the Online Appendix in supporting information. We also recognize that time-invariant aspects of a state (culture or institutional norms) can influence policymaking and utilize state fixed effects regression in the Online Appendix.

Our independent variable is a binary *Ideological Contiguity* variable measuring ideological congruence between an individual legislator considering to pursue RPS legislation in state  $i$  and a source state  $j$  that may have already adopted an RPS. We seek to evaluate whether the legislator in state  $i$  is more likely to cosponsor or vote "yes" on a bill to adopt RPS if an ideologically contiguous state  $j$  has already adopted RPS (the contiguity is between the ideology of the legislator in state  $i$  and the aggregate ideology of state  $j$ ); Shor and McCarty (2015) developed individual and aggregate scores allowing us to link the ideology of a lawmaker in state  $i$  to aggregate ideology in state  $j$ .

For theoretical reasons and to avoid endogeneity, we look at how contiguity between past aggregate ideology in state  $j$  and the current ideology of the legislator in state  $i$  informs the decision making of this legislator. We are interested in how the legislator in state  $i$  uses their general impression of state  $j$ 's ideology to make cosponsorship or voting decisions, and we, therefore, relate the legislator's ideology score in year  $t$  to state  $j$ 's median ideology score from the first year for which Shor and McCarty calculated aggregate ideology scores to the year  $t-1$ . We are interested in the general relationship between the ideology of state  $j$  and that of the legislator in state  $i$  based on the idea that legislators place great emphasis on the stability of their ideological sources.

We construct our independent variable as follows. Take a legislator considering to pursue RPS adoption in state  $i$  in year  $t$ . That legislator could conceivably look to 49 other states for cues on whether to cosponsor or vote on an RPS bill, but we are interested in how the legislator responds to the presence (or absence) of an RPS in one of those 49 other states that is closest in ideology to the legislator. We need to find out how the ideology of the legislator in state  $i$  (using Shor and McCarty's individual legislator ideology data) relates to the general ideologies of each of the 49 other states. To do this, for each of the 49 other states, we use Shor and McCarty's aggregate ideological data to construct one score that measures each state's median ideology from the first year for which an ideological score was available through year  $t-1$ . Out of the 49 scores for the 49 potential source states, we then select the state whose median ideological score is closest to the ideology of legislator in state  $i$ . We ask whether the state with the closest ideological score to the legislator in state  $i$  has adopted an RPS as of year  $t-1$ . If the answer to this question is "yes," then the ideological contiguity variable gets a value of 1; if the answer is "no," then the

variable gets a value of 0. Ideological contiguity frequently obtains a value of 1: for cosponsorship, there are 10,209 instances where ideological contiguity is 0 and 7,601 instances where it is 1; for adoption, there are 2,595 instances where ideological contiguity is 0 and 2,187 instances where it is 1. In the ideological contiguity variable, we look at the relationship between the legislator in state  $i$  and the *one* state that is ideologically closest to them based on the idea that the legislator gives special significance to cues coming from their most ideologically proximate state. We recognize that legislators could also receive cues from other ideologically proximate states and include estimations of our key ideological contiguity variable that incorporate expanded measures of ideological similarity (including a three-state version of ideological contiguity) in the robustness section of the paper.<sup>19</sup> Our argument remains unchanged.

Using Shor and McCarty's data has many advantages. It is the only data we know of that has individual and aggregate ideology scores comparable with each other. Scores are also comparable across states and time, as the authors survey "legislative candidates at the state and federal levels over a number of years" where "survey questions are asked in identical form across states, and many questions are repeated over time" (Shor & McCarty, 2011, p. 531). Their data are also prominent in the state politics literature (having been cited over 600 times), allowing us to tie our research to the burgeoning literature that uses their scores. While their measures are unidimensional (Shor and McCarty mention that "a single dimension explains the vast bulk of the voting in state legislatures"), Shor and McCarty indicate a plan to provide multidimensional scores in the future, suggesting that a future extension of our research could integrate multidimensional ideological similarity into quantitative diffusion studies (Shor & McCarty, 2011, p. 533).

The *Ideological Contiguity Influences Cosponsorship more than Adoption Floor Voting Hypothesis* has empirical support if the effect of ideological contiguity with respect to cosponsorship is stronger than it is with respect to voting to adopt at the floor. Analogously, the *Ideological Contiguity Influences Adoption Floor Voting more than Cosponsorship Hypothesis* has empirical support if the effect of ideological contiguity with respect to voting to adopt at the floor is stronger than it is with respect to cosponsorship.

We include controls for competing explanations for the dependent variables.<sup>20</sup> *Ideology* is Shor and McCarty's reported ideological score for each legislator at year  $t$ ; left-leaning ideology has been linked to increased support for renewable energy policy in previous studies (Potrafke, 2010; and Carley et al., 2017). *Party* takes a value of 0 if a legislator is a Democrat and a value of 1 if the legislator is a Republican. We include this variable to capture if a legislator is more likely to push for RPS policymaking if they are a Democrat. *Chamber* captures whether the legislator belongs to the lower or upper chamber of a state legislature. Upper-chamber legislators have longer time horizons, and the longer horizons may create more opportunities to pursue RPS policymaking. *Legislative Professionalism*, as measured by Squire (2007), accounts for the possibility that resources from increased professionalism may allow for legislators to observe policy experimentation in other states.

*Geographic Contiguity* captures the possibility that legislators in state  $i$  representing districts containing counties that border states that have already adopted RPS may be more likely than legislators representing geographically insular districts to cosponsor or vote to adopt RPS programs. The geographic contiguity variable is a micro-level corollary to geographic similarity variables that have been used at the macro level to explain diffusion in a number of policy areas. We identify whether a legislator's district includes a county bordering a state that adopted an RPS by year  $t-1$  and code the variable with a value of 1 if a legislator's district includes such a county and 0 otherwise.<sup>21</sup>

We do not include whether a legislator is a cosponsor in model specifications where voting to adopt is the dependent variable since doing so overdetermines these models. However, in model specifications dealing with the vote to adopt, we include a *Committee* variable capturing whether a legislator belongs to a legislative committee that has had jurisdiction over the bill that is under consideration for adoption. Serving on a bill's committee of jurisdiction could give a legislator specialized insight about the bill and potentially weaken the effect of diffusion.<sup>22</sup> In our base estimations for both dependent variables, we use logistic regression with standard errors clustered at the highest unit (the state) of aggregation.

## Results

Table 2 displays regression results for both the cosponsorship and voting to adopt dependent variables. An explanation of associated critical thresholds is beneath the table.

In Table 2, models 1 and 2 relate to cosponsorship and voting to adopt when the *Committee* variable is not added to the voting to adopt specification, while model 3 includes a committee of jurisdiction in the voting to adopt specification. The positive and significant association between ideological contiguity and voting to adopt combined with a smaller and statistically non-significant association

**Table 2.** Individual Diffusion in Cosponsorship and Voting

| Variable                    | Cosponsorship (1)    | Adoption (2)       | Adoption (3)       |
|-----------------------------|----------------------|--------------------|--------------------|
| Ideological contiguity      | 0.192<br>(0.234)     | 0.804**<br>(0.392) | 0.805**<br>(0.393) |
| Ideology                    | -0.804***<br>(0.267) | -0.766<br>(0.491)  | -0.765<br>(0.491)  |
| Party                       | 0.622<br>(0.560)     | 0.292<br>(0.501)   | 0.291<br>(0.501)   |
| Chamber                     | 0.016<br>(0.162)     | -0.200<br>(0.226)  | -0.203<br>(0.225)  |
| Legislative professionalism | 0.452<br>(1.151)     | 0.855<br>(1.556)   | 0.846<br>(1.559)   |
| Geographic contiguity       | -0.009<br>(0.236)    | 0.284<br>(0.306)   | 0.283<br>(0.306)   |
| Committee                   |                      |                    | 0.034<br>(0.122)   |
| Observations                | 17,810               | 4,782              | 4,782              |

\*\*\* $p = 0.01$ ; \*\* $p = 0.05$  with respect to critical thresholds.

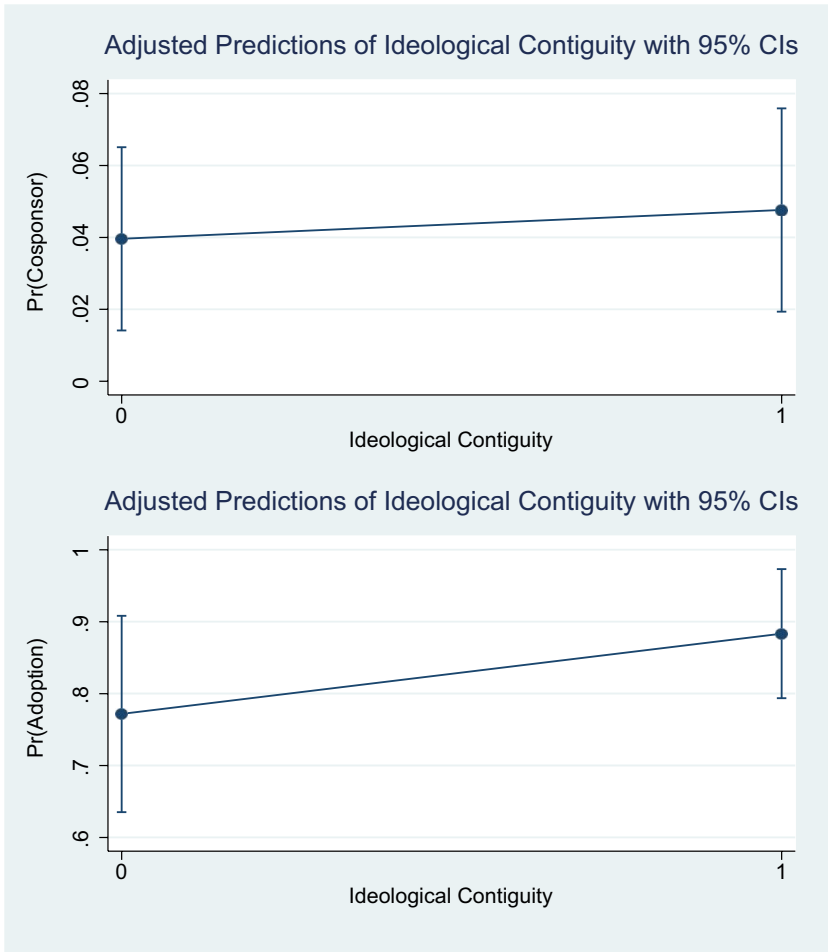


Figure 1. Comparing Ideological Contiguity to Cosponsorship and Adoption. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

between ideological contiguity and cosponsorship lends credence to the *Ideological Contiguity Influences Adoption Floor Voting More than Cosponsorship Hypothesis* over the *Ideological Contiguity Influences Cosponsorship More than Adoption Floor Voting Hypothesis*. Figure 1 displays the difference in the influence of ideological contiguity in cosponsorship versus voting to adopt on the floor. In this figure, continuous control variables are set to their medians, while binary control variables are set to their most frequently occurring values. In the figure, note that the positive slope corresponding to ideological contiguity is much larger with respect to voting to adopt than it is with respect to cosponsorship. In numerical terms, ideological contiguity increases the probability of voting “yes” on a bill to adopt an RPS program by 0.112 points on a scale where 0 indicates no probability of voting yes, while 1 indicates a perfect probability of voting yes. In contrast, ideological contiguity increases the probability of cosponsoring by 0.008 points, using a similar scale where 0 indicates



no probability of cosponsoring, while 1 indicates a perfect probability of cosponsoring. We summarily find evidence that ideological diffusion matters more in floor voting than it does in cosponsorship and that external cues from likeminded source states factor more heavily into the decision making of legislators at the voting to adopt stage than they do with potential cosponsors.

### Robustness

We undertake robustness checks, which are available in the Online Appendix. In Table A1, we evaluate whether mixing the instances of primary sponsorship and cosponsorship in our dependent data muddies the interpretability of our comparison between cosponsorship and voting to adopt. We revisit state legislative websites and utilize classification patterns in the websites to infer primary sponsorship or cosponsorship status. We then reevaluate our cosponsorship model dropping primary sponsors in one instance and reclassifying them as non-cosponsors in another. Our substantive result does not change.

In Table A2, we evaluate the possibility that our key result could be attributable to shared ideology rather than influence. To determine this, we include *Ideological Distance* between the legislator in state  $i$  and state  $j$  as a control variable. If our key ideological contiguity variable loses significance with the inclusion of this control, then the main result is driven by shared ideology rather than influence. We find that the ideological contiguity variable retains significance and that our substantive result is unchanged.

In Table A3, we acknowledge that legislators in state  $i$  might not know who their closest peer state is, and we, therefore, substitute an alternate formulation of the independent variable constructed from a legislator's three closest ideological peer states. Our intuition here is to ascertain whether our main result persists if we use any of the three ideologically closest states to a legislator rather than just one state to construct the independent variable. Our results remain robust to this alternate formulation.

In Table A4, we evaluate whether a state's previous attempts to adopt RPS (*Number of Previous RPS Adoption Bills*) could influence our results and find that including the number of a state's previous RPS adoption bill attempts does not change results.

In Table A5, we acknowledge that our geographic contiguity control may be too restrictive and use an alternate version of this variable (*Full State Geographic Contiguity*) where all legislators in state  $i$  receive a value of 1 if any state bordering state  $i$  has adopted an RPS program. We find that our results do not change.

In Table A6, we utilize a Heckman probit selection model in which cosponsorship is the selection outcome while adoption is the final outcome. We use whether a legislator is in their first term in a legislature as the variable that influences cosponsorship but not adoption. Our logic is that first-term lawmakers may not yet possess the experience or membership in influential legislative networks to take part in cosponsorship, suggesting that being in the first term relates negatively to cosponsorship. At the same time, the first-term status should not

**Table 3.** Robustness Checks Available in Online Appendix

| Number | Robustness Test   |
|--------|---|
| A1     | Inferring Primary Sponsorship Status  |
| A2     | Including Ideological Distance  |
| A3     | Substituting Alternate Ideological Contiguity                                       |
| A4     | Including Previous RPS Bill Attempts  |
| A5     | Using Full State Geographic Contiguity  |
| A6     | Using a Heckman Probit Model  |
| A7     | Testing Exclusion Restriction in Heckman Model                                      |
| A8     | Including Economic Control Variables  |
| A9     | Including Sponsorship/Cosponsorship Limits  |
| A10    | Including Legislator Majority Party Status  |
| A11    | Interacting Legislative Professionalism with Ideological Contiguity                 |
| A12    | Using Bivariate Probit Model  |
| A13    | Including Percent Fossil Fuel Production  |
| A14    | Including Committee Variable in Cosponsorship                                       |
| A15    | Using State Fixed Effects   |
| A16    | Including a Legislator's Own Ideological Distance to their Legislative Median       |
| A17    | Chi-square Test after Cross-Tabulation for Ideological Contiguity and Cosponsorship |
| A18    | Chi-square Test after Cross-Tabulation for Ideological Contiguity and Adoption      |
| A19    | Robustness Accounting for Legislator Committee Leadership Status                    |
| N1     | Note on Individual versus Macro-Level Ideological Contiguity/Data                   |

relate statistically with voting to adopt. Our logic linking the first-term variable to cosponsorship but not adoption has been validated in Gilligan and Krehbiel (1997). The Heckman probit technique estimates a parameter,  $\rho$ , which if significant, suggests that we use the Heckman technique rather than separate logistic models. A non-significant  $\rho$  parameter implies that using separate logistic models is appropriate. We estimate two different Heckman specifications, one where the only difference between cosponsorship and voting to adopt is the presence of the first-term exclusion variable in cosponsorship, and another where the committee of jurisdiction variable is included in voting to adopt. Results from the Heckman exercises indicate that  $\rho$  parameters are non-significant, meaning our separate logistic models are appropriate. In Table A7, we evaluate whether the exclusion restriction used in our Heckman model is supported and conduct separate logistic estimations linking the first-term status to cosponsorship and adoption. We find that first-term status relates to cosponsorship but not adoption, validating our exclusion restriction.

In Table A8, we account for the possibility that including *State GDP* and *Change in Unemployment* could influence our results and find no substantive change in results.

We perform other checks, which are available in the paper's Online Appendix. Table 3 displays all checks in the Online Appendix. While we described the checks corresponding to Tables A1-A8 here, a discussion of other robustness checks with results is in the Online Appendix.<sup>23</sup>

## Conclusion

We use individual-level legislator data and compare the influence of other states' policymaking on legislator behavior at two key stages of the lawmaking

process, cosponsorship and adoption, to evaluate if adoption is, indeed, the epicenter of diffusion activity or instead the “tip of the iceberg” versus a prominent pre-adoption stage. We find that the influence of ideologically contiguous states is more pronounced at adoption than cosponsorship, and our research provides preliminary validation (at least from the vantage point of weighing cosponsorship against adoption) for the choice made by the bulk of diffusion scholars (Graham et al., 2013, report almost 800 works on policy diffusion, with the overwhelming majority only examining adoption) to focus on adoption. Providing this validation is important for political science and policy studies, as it gives diffusion scholars a comparative across-legislative-stage context to justify studying adoption.

Our project also provides scholars with an empirical framework they can use to further investigate the influence of other states at the adoption and pre-adoption stages. Our finding regarding ideological contiguity and cosponsorship does not preclude the possibility that ideological contiguity could influence bill authors or even specific subgroups of cosponsors (such as cosponsors receiving large contributions from affiliated interests); one could combine our framework with data that they locate to test these propositions. In a similar vein, one could use our framework to perform a more extensive validation of the relative centrality of adoption in the diffusion process by comparing the influence of other states across bill authorship, cosponsorship, adoption, and even (insofar as legislators are involved in this stage) implementation. Finally, within the adoption stage itself, researchers can employ our framework to evaluate how individuals in the same legislature can differ in terms of being influenced by other states. These extensions could be undertaken using a massive new dataset containing hundreds of policies (Boehmke et al., 2020) that has been featured prominently in this journal (one would first need to gather individual-level data across different legislative stages for the policies in this dataset). Additionally, both our analysis and possible extensions can be investigated using multidimensional ideological data should Shor and McCarty make this data available.

Ultimately, this paper allows public policy and political science researchers to investigate the place of adoption in diffusion by evaluating whether the influence of other states is more pronounced earlier in the lawmaking process. By providing a measure of validation for adoption but also discussing how scholars can extend our technique elsewhere, our research begins answering the call put forth by Gilardi and Wasserfallen (2019) and Gilardi et al. (2020) to integrate the study of diffusion at the pre-adoption stage with the extant scholarship that focuses overwhelmingly on adoption.

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## Notes

1. These legislatures are contiguous ideologically based on average ideology scores across each state's house and senate for the year 2012 using Shor and McCarty's (2015) aggregate ideology data; 2012 was selected for hypothetical purposes.
2. In note N1 of the Online Appendix in supporting information, we use the example of the 2008 Michigan legislature to show how the state considered to be ideologically most similar can differ based on whether we use an individual versus macro-level measure.
3. All sources of variation in dependent and independent variables that can occur in a given year at the individual legislator level are reduced to a single set of variable values for that same given year at the collective level.
4. They research how entrepreneurs play a role in bringing issues onto the legislative agenda. This suggests that entrepreneurs within the legislature may be better plugged into other states' policy developments than legislative colleagues who are not entrepreneurs.
5. Cosponsorship has been linked to bill advancement, as it provides the wider legislature with a signal about the popularity of a bill. As Bernhard and Sulkin (2013) emphasize, legislators are generally sincere in deciding to cosponsor given that cosponsorship represents a public commitment to support a bill (backing out of that commitment can harm a legislator's credibility) and given that rates of renegeing by cosponsors have been found to be very low.
6. We unfortunately cannot systematically distinguish between *sponsorship* and *cosponsorship* in our analysis since the vast majority of states do not distinguish between sponsors and cosponsors in their records. We settle on analyzing the action of cosponsorship even though some of our observations may actually be sponsorship. We recognize that sponsorship and cosponsorship are distinct but are more concerned with evaluating how legislative diffusion at the entrepreneurial stage (legislative entrepreneurs are typically sponsors or cosponsors) may be different from legislative diffusion at the voting stage. In the robustness section, we infer primary sponsorship status in RPS adoption legislation and drop primary sponsorship observations from the analysis. Our substantive results are unchanged.
7. We recognize that the pathway of geographical contiguity can also influence diffusion and control for this in our analysis.
8. Using a spatial lag variable *not* identified in the RPS diffusion literature might not represent a good way to validate if diffusion is most pronounced at adoption, as the spatial lag variable might be entirely unrelated to RPS diffusion at any stage.
9. As the same literature conveys, lawmakers can face uncertainty because they do not possess unlimited time to study how a bill precisely maps onto their own ideological views.
10. We assume that lawmakers generally have sincere preferences at both the adoption and cosponsorship stages. Lawmakers have sincere preferences at final adoption, since this is the stage after which lawmakers must be able to explain why they voted a particular way and how their vote comports with their own values and the ostensibly similar values of their constituents. Like Bernhard and Sulkin (2013), we assume that in general, lawmakers want a bill to pass when they choose to publicly signal their support for that bill by cosponsoring it. As Bernhard and Sulkin argue, a lawmaker's honesty and sincerity in expressing support for a bill through cosponsorship today affects whether the lawmaker's colleagues will reciprocate the favor on issues that are important to the lawmaker in the future. Therefore, lawmakers rarely renege on cosponsorship obligations (renegeing means voting against a bill after cosponsoring it) and tend to cosponsor when they actually support a bill.
11. This is since the floor vote to adopt a bill typically ensures participation from a majority of a legislature's members, while considering to cosponsor is entirely voluntary (National Conference of State Legislatures, 2010). Some states permit bill adoption with a majority vote of "those present." We account for this through state fixed effects (Table A15 in the Online Appendix) and find results unchanged.
12. Of course, it may be that receiving confirmation from ideologically similar states accounts for Koger's finding that legislators who cosponsor are more enthusiastic about a bill than members of the wider legislature. We think this is unlikely to be the case, as Koger's (2003) interview of legislators regarding cosponsoring makes no mention of needing confirmation to bolster one's enthusiasm for a bill but does explicitly mention stronger belief in the worth of the bill, suggesting that the higher enthusiasm

exhibited by cosponsors is probably not an artifact of ideological contiguity. As we show in articulating the first of our two competing hypotheses, we argue that cosponsors may pay attention to policy in ideologically contiguous states to sell legislation to co-ideologues in their own legislature.

13. Primarily using “the cosponsorship signal” to sell a bill to colleagues refers to viewing the cosponsorship declaration itself as the sales pitch rather than thinking that actively trying to convince colleagues through providing information also makes up the sales pitch.
14. The same goes for the assumptions taken from other authors concerning enthusiasm and uncertainty: while we assume (based on Koger, 2003) that cosponsors as a group have different levels of enthusiasm and uncertainty than the wider legislature as a group, we make no assumptions about how enthusiasm and uncertainty vary among cosponsors and leave this unstudied topic to future scholars.
15. Cosponsorship observations come from 42 states, while adoption observations come from 31 states.
16. We obtained data on the geographic boundaries of state legislative districts to construct the geographic contiguity control variable. This data was provided by Carl Klarner, who can be contacted at carl.klarner@gmail.com. The data given to us was only provided through the year 2011. With respect to when states began adopting RPS programs, Iowa adopted the very first precursor to an RPS with its Alternative Energy Law in 1983 (North Carolina Clean Energy Technology Center, 2016; and Sarkisian, 2016). We do not include the 1983 legislation because we could not locate cosponsorship and floor voting records for it.
17. Although some RPS policies are voluntary, the vast majority are mandatory.
18. A few states adopted their RPS policies through public utility commission rulemaking or ballot initiatives. For the states adopting RPS non-legislatively, we still search for unsuccessful RPS adoption bills prior to when these states adopted non-legislatively.
19. We cannot definitively prove when legislators are influenced by ideologically congruent states’ policies due to the probabilistic rather than deterministic mode of our analysis; but we believe legislators possess the ability to know which states are ideologically similar, as Carley and Nicholson-Crotty (2018) and Volden (2006) have shown via policy-maker interviews that officials are aware of and monitor policy developments in states that they think share similar ideological values.
20. Throughout this paper, we use multivariate logistic regression to evaluate the influence of ideological contiguity on cosponsorship and adoption. We recognize that the Chi-square test after cross-tabulation can be used to detect the association between ideological contiguity and cosponsorship as well as ideological contiguity and adoption, and we report results from this test with respect to both of these relationships in Tables A17 and A18 of the Online Appendix. The Chi-square tests establish evidence of association with both relationships but do not account for whether association persists when controls are added; we, therefore, keep the multivariate regression analyses.
21. We used county information since we lack information on actual legislative district boundaries and only have information about the county names in districts.
22. In Table 2, we take out *Committee* and reestimate the vote to adopt a model using the same exact variables that were used in the cosponsorship model. Substantive results do not change.
23. We invite readers to consult Table A19, where we evaluate if committee leadership influences results. We find that various ways of accounting for the influence of committee leaders do not change results.

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