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# Policy Inventing and Borrowing among State Legislatures

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**Abstract:** Although a long literature has analyzed how policies diffuse or spread across the American states, scant attention has been given to how states invent or create original policy instead of borrowing existing policy from one another. In this article, I use state legislative policymaking with respect to renewable portfolio standards to examine when legislatures invent original policy instead of borrowing existing policy. I use a novel data set that includes the state adoption of hundreds of policy provisions, including their combinations, and I employ logistic pooled event history analysis to identify the determinants of inventing and borrowing. I find that government ideology largely predicts inventing, whereas electoral vulnerability predicts borrowing. The results suggest that ideologues spearhead invention and further suggest that democratic accountability works chiefly through promoting borrowing rather than blunting inventing.

**Verification Materials:** The data and materials required to verify the computational reproducibility of the results, procedures, and analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: <http://doi.org/10.7910/DVN/PMYBBM>

A strength of federalism raised by Brandeis is that subnational governments serve as “laboratories” and “try novel social and economic experiments without risk to the country” (*New State Ice Company v. Liebmann* 1932). State governments do not wait for the central government to make policy but act on their own and adopt unique policies that reflect the demands of their constituents. States’ acting on their own arguably represents a benefit of federalism since experimentation with policymaking leads to the identification of best practices that diffuse to other states or get adopted nationally (Bednar 2009; Boushey 2010; Karch 2007; Volden 2006). Crucial policy accomplishments in American history, including women’s gaining the vote and the passage of air pollution legislation, began as subnational efforts that became national policy.<sup>1</sup> Today, state experimentation

with energy and immigration policy may also find broad acceptance.

Political scientists have studied state policy experimentation for five decades, and this topic is enjoying a renaissance (Graham, Shipan, and Volden 2013). Concerning policy adoption and taking directly from Brandeis’s comment, policy experimentation is separable into distinct processes: *inventing*, or the adoption of novel or untested policy, where a state adopts a policy that has never been adopted in any other state; and *borrowing*, where a state adopts a policy that has already been adopted in some other state(s). Inventing is noteworthy because lawmakers in the adopting state cannot “free-ride” from the experiences of other states in predicting how the adopted policy will function (Volden, Ting, and Carpenter 2008). Borrowing is noteworthy because

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<sup>1</sup>In 1869, Wyoming first gave women the franchise (Rea 2014). Oregon was the first state to adopt air pollution legislation (Stern 1982).

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lawmakers in the adopting state can free-ride and follow in the footsteps of other states in hopes of achieving similar policy results.<sup>2</sup>

Most political science research on policy experimentation focuses on borrowing. Indeed, borrowing is policy diffusion (Berry and Berry 1990; Boushey 2010; Mintrom 1997; Rogers 1962; Shipan and Volden 2008, 2014). Inventing, however, has been left largely unexplored, and we know little about what causes states to adopt untested policies in the first place. One reason why is due to how Walker (1969) conceptualized state policy experimentation. Walker wanted to know why states were “innovative” in their policymaking and how innovative policies diffused across the states.<sup>3</sup> Walker defined *innovation* as “a program or policy which is new to the states adopting it, no matter how old the program may be or how many other states have adopted it” (1969, 881). While Walker’s conceptualization of innovation has advanced our understanding of diffusion (which occurs when a state adopts a policy that is new to it even if the policy has already been adopted by other states), it has led an entire generation of political science scholarship to ignore the development of novel policy in which a state adopts a policy that is not only new to it but also new to every other state.

Understanding why states invent in policymaking and how the causes of inventing potentially differ from those of borrowing is the objective of this study. Inventing and borrowing are opposing kinds of policy adoption, and what distinguishes them is novelty. Making inventing and borrowing oppositional is necessary so we can identify inventing empirically and uncover determinants predicting it. Deciphering why inventing happens broadens our knowledge about federalism. If an advantage of federalism is that it enables the states to experiment with novel policies that diffuse to other states, then knowing what makes inventing occur would help us better predict when the experimentation-related benefit of federalism accrues. Relatedly, understanding how the causes of inventing differ from borrowing adds to our knowledge of diffusion by identifying explanations for why some policies have limited scopes of diffusion. Federalism has been prescribed as a solution for problems including ethnic conflict (Biden and Gelb 2006) and grievances over

resource distribution (Peterson 1995). Knowing how inventing occurs in a federal system helps determine how novel policies are created in what may be an increasingly decentralized world.

Most political science research on policy adoption and diffusion focuses on the policy as the unit of analysis. Making the policy the unit of analysis is useful and permits the identification of why a state adopted a specific policy or why a specific policy diffused across the states. Examples of this approach include studies on lottery adoption (Berry and Berry 1990) and gaming (Boehmke and Witmer 2004). However, utilizing the policy as the unit of analysis neglects the vast amount of novel policymaking that we would notice if we utilized the *subpolicy*, or policy *provision* instead. Using the policy as the unit of analysis concerning lottery adoption, we only observe adoption and diffusion; all adoptions look alike since we ignore information about how lotteries in the states differ from one another. Utilizing the policy provision as the unit of analysis explicitly incorporates information about how lottery systems differ from one another across the states and lets us determine when and why states invent by adopting individual policy provisions that have not been adopted previously at the state level and adopting combinations of individual policy provisions that have never been combined together before at the state level.

I utilize the policy provision as the unit of analysis and evaluate what causes state legislatures to invent versus borrow when adopting provisions of renewable portfolio standard (RPS) programs. RPSs are state programs in which governments typically mandate that utility companies generate some of the electricity they supply from renewable sources (Rabe 2007). RPSs are useful for studying inventing and borrowing. First, they have mainly been adopted legislatively, which matters so we can discern how policy makers balance electoral considerations with their own preferences in choosing inventing or borrowing. Second, they have also been developed absent overt federal influence (Rabe 2004), which is helpful since centralization may constrain the opportunity for states to invent in policymaking.<sup>4</sup> Third, RPSs are diverse and permit the identification of ample cases of inventing and borrowing at the policy provision level.

I gather data on the adoption of hundreds of unique RPS provisions across the American states and categorize each instance of adoption as inventing or borrowing based on when a state adopts a provision relative to when other states adopt that same provision. I conduct pooled event history analysis via logistic regression

<sup>2</sup>I characterize a policy adoption as inventing if a state adopts a policy before any other state has adopted it. Although an inventing state could follow the actions of a local government or a different country’s government, there is less comparability between a U.S. state and a local government or a U.S. state and a foreign government than there is between two states, meaning that following the actions of a local or foreign government carries greater uncertainty than following another state.

<sup>3</sup>My term *inventing* is distinct from Walker’s (1969) term *innovation*.

<sup>4</sup>I conduct an evaluation of how states invent and borrow without federal prodding.

to identify factors influencing inventing and borrowing. Pooled event history analysis is increasingly popular in adoption research (e.g., Boehmke 2009; Boushey 2016; Kreitzer and Boehmke 2016; Makse and Volden 2011; Shipan and Volden 2006). Here, a researcher combines the risk sets of different policy provision adoptions to determine whether an independent variable influences adoption across that pool of provisions. The researcher makes the unit of analysis the policy provision state-year and follows the event history analysis assumption dictating that a state loses its opportunity to adopt a policy provision upon adoption. I use this technique with the inventing and borrowing classification procedure to uncover factors predicting each of the two kinds of policy adoption.

I find evidence that policy maker ideology primarily influences inventing. As a state legislature becomes more left-leaning ideologically, that legislature is more likely to invent an RPS policy provision adoption. Electoral considerations primarily influence borrowing, and lawmakers are more likely to borrow when legislator electoral safety decreases. This is because borrowing legislatures can claim that they are importing best practices that have been tried elsewhere.

The study's conclusions about inventing are profound. Absent federal action and using a complex policy like RPS, inventing occurs disproportionately in ideologically charged legislatures. The result suggests that novel lawmaking in the states originates from ideologues and that attention be given to encouraging lawmaker participation from across the ideological spectrum in crafting inventions, particularly if one believes that broad ideological participation facilitates greater legitimacy of inventions. The method of distinguishing inventing from borrowing developed here provides scholars with a framework to investigate inventing and borrowing across other policy areas (and under other conditions) in federal systems.

## Existing Views on Inventing and Borrowing

Observers of federalism have paid attention to the capacity of the states to invent their own unique policy since Brandeis's opinion in *New State Ice Company v. Liebmann* (1932). Walker (1969) visited this subject and wanted to know about the determinants and spread of state policy innovations. Walker's article catalyzed substantial interest in diffusion in American politics (Graham, Shipan, and Volden 2013), comparative politics (Gilardi

2016), and international relations (Simmons, Frank, and Garrett 2006).

Walker's (1969) definition of innovation (based on newness to the adopting state regardless of newness across states) contributed to work that outlines the conditions under which states adopt policies that are new to them (Boehmke and Skinner 2012). However, Walker's definition of innovation understates the amount of novel policy experimentation that potentially occurs when a later adopter enacts a policy that has already been adopted by an earlier, ostensibly more pioneering state. Suppose that California is the first state to adopt a program requiring that some fraction of new vehicles sold in the state be electric. Suppose that 2 years later, Connecticut and New York become the second and third states to adopt the electric rule for new vehicles and borrow California's policy wholesale without modification. Suppose that 4 years after California's adoption, Michigan adopts an electric requirement for new vehicle sales but designs its policy differently from California's (and thus Connecticut's and New York's). Suppose that Michigan adopts a different fractional requirement from California's, Connecticut's, and New York's, and suppose that Michigan includes a novel stipulation that part of its new vehicle sales requirement be met through selling electric sport utility vehicles.

If we use the formulation of innovation employed by Walker (1969) and most diffusion scholars, Michigan would be an innovator since the state has adopted a policy new to it. But Michigan's extent of experimentation with policy that has not been tested in other states would be ignored since policy choice (if a state adopts an electric new vehicle sales requirement) is too broad to detect where novel state policy adoption occurs. Similarly, the extent to which Connecticut and New York free-ride off California is also ignored.

Some innovation and diffusion scholars noticed the problem depicted above and addressed it with concepts of "reinvention" (Carley, Nicholson-Crotty, and Miller 2016; Glick and Hays 1991; Rogers 1962) or "customization" (Karch 2007). Glick and Hays describe reinvention as "the modification by a user of a core innovation during the diffusion process" and show that it occurs among states that are late adopters. Glick and Hays suggest focusing on policy "provisions" rather than the meta-policy as the unit of analysis to better understand reinvention (1991, 839). They do not derive a systematic way to distinguish novelty from borrowing in policy adoption data nor do they uncover whether political factors differentially impact novel policy creation versus borrowing. Karch (2007) defines customization as when a state makes a policy (even if that policy is imported from another state) its own through a "local" process where state politicians make an imported



policy align to their own preferences and those of their constituents. Karch situates customization within the diffusion process but leaves it to future scholars to determine why “the same policy innovation takes on a variety of different forms in the states in which it is adopted” and how to capture customization for quantitative analysis (2007, 191).

I build on Glick and Hays (1991) and embrace Karch’s (2007) challenge of figuring out why a policy assumes different forms across the states in which it is adopted. Determining why a policy assumes different forms across the states where it is adopted involves distinguishing the provisions of the policy that are unique to one state from the provisions that have been adopted across other states. However, it is not enough to separate individual provisions unique to one state from those that are shared since a state can also create a combination of policy provisions from its borrowing that is novel. Determining why a policy assumes different forms across the states also involves distinguishing when a state adopts a combination of individual provisions that is unique to that state from when a state borrows the entire combination of policy provisions from another state. I devise a procedure for distinguishing uniqueness from borrowing in policy adoption to take up Karch’s objective.

### Similar but Different Explanations for Inventing and Borrowing

Inventing is the adoption by a state of a policy provision that has not already been adopted by another state. Inventing also refers to the adoption by a state of a combination of policy provisions that has not already been adopted by another state. Borrowing refers to the adoption by a state of a policy provision that has already been adopted by another state; additionally, it refers to the adoption by a state of a combination of policy provisions that has already been adopted by another state.

Elite-level or government ideology motivates inventing. Since inventing is untested, most observers are unaware of the policy ideas that could be candidates for inventing. This is true regarding the general public, as a typical member of the general public may know broadly about an untested policy idea but probably lacks knowledge about the specific policy provisions that could compose the bill, allowing for the broad policy idea to be adopted. This is also true—but to a lesser extent—about lawmakers, who face time and resource constraints that may preclude open-ended exploration about untested policy provisions that could be incorporated into a bill

(Kousser 2005). Interest in a cause motivates legislators to allocate resources to learning about untested policy provisions, and government ideology captures interest in pursuing a set of causes associated with that legislature’s ideological comportment. Right-leaning legislatures want to pursue right-leaning causes and will therefore invest time and resources into learning about untested policy provisions that help them pursue such causes. Left-leaning legislatures want to pursue left-leaning causes and invest time and resources into learning about untested policy provisions that could help them pursue such causes.

Knowledge of existence is not enough to get a legislature to invent during policy provision adoption. Knowing about the existence of an untested policy provision concerning environmental regulation does not imply that a left-leaning legislature will invent by adopting the provision. What also matters is that the legislature is willing to adopt the policy provision *without* evidence tracking the provision’s performance when adopted. Inventing means that an adopting state cannot free-ride off of the experiences of other states and means that it adopts without relying on other states to determine the provision’s effectiveness. If they believe that an untested policy provision represents a congruent ideological worldview, then ideological legislatures may have a positive opinion about the provision and adopt it despite lacking evidence about the provision’s performance. Diffusion scholars have shown that governments are more likely to learn from and adopt policies when such policies have been implemented by ideologically similar governments rather than ideologically dissimilar governments (Carley, Nicholson-Crotty, and Miller 2016; Gilardi 2010; Grossback, Nicholson-Crotty, and Peterson 2004).

In ideological diffusion, belief trumps evidence in that a borrowing government pays attention to *who* adopts rather than *what* is adopted. A novel policy provision has no other-state precedents, meaning that the inventing government cannot look at ideologically similar governments across the states (the *who*) to determine whether it should adopt that particular novel policy provision. However, ideology also trumps evidence with respect to *what* is being adopted. Specifically, different areas of policymaking have different ideological connotations. Right-leaning governments tend to adopt more regulations concerning abortion (Kreitzer 2015). Alternatively, left-leaning governments adopt more regulations concerning energy and the environment (Potrafke 2010). A right-leaning government may adopt a novel policy provision concerning abortion simply because the novel provision is a new abortion regulation; similarly, a left-leaning government may adopt a novel policy provision concerning the environment because the novel provision

is a new environmental regulation. Ultimately, ideologically extreme governments use shortcuts (Lupia 1994; Weyland 2007) and believe that novel regulations fitting their worldview are worth adopting in spite of lacking evidence.

Ideologically extreme legislatures are thus more likely to invent compared to moderate legislatures for two reasons: Ideology provides the interest and impetus to learn about novel proposals that could be incorporated into policy; and ideologically extreme legislatures are more likely to accept the risk of adopting novel policy provisions because they are predisposed to believe (based on the area of policymaking) that such provisions are worth adopting. This claim resonates with formal theoretic work by Volden, Ting, and Carpenter (2008) and Callander (2011a, 2011b), who suggest that policy maker preferences play a large role in explaining novel policy choice. I build on that work by showing empirically through RPS that an important component of policy maker preference (ideology) predicts inventing. Although RPSs were originally a libertarian idea, RPS is broadly an example of energy and environmental regulation and comports with a left-leaning ideological orientation (Rabe 2004, 2007). I therefore expect that a state legislature will be more likely to invent in this area (which is left-leaning) as that legislature becomes more left-leaning ideologically. I situate the following hypothesis in a leftward direction due to using RPS data but give guidance in the conclusion about how researchers might investigate inventing in right-leaning areas by right-leaning legislatures.

*Legislative Ideology and Inventing Hypothesis:* As a state legislature becomes more left-leaning ideologically, that legislature is more likely to invent in left-leaning policy areas during policy provision adoption.

It is possible that government ideology may not play such a pronounced role with respect to borrowing. This is because borrowed policy provisions have a track record, meaning that evidence of performance can be used in adoption decisions. Whereas the passion of ideologically predisposed legislatures can cause them to overlook evidence and invent during policy provision adoption, ideologically moderate legislatures may rely more on evidence in guiding adoption decisions and may be more likely to borrow during policy provision adoption. Moreover, to the extent that ideologically hostile legislatures (right-leaning legislatures in the case of renewable energy) actually consider adopting RPS policy provisions, evidence will play an outsized role in helping some of those legislatures override their own predispositions against the policy and ultimately adopt RPS policy provisions (Butler et al.

2017). The ideological composition of legislatures that borrow may consequently be more heterogeneous than the composition of legislatures that invent, implying that the influence of the ideological composition of a legislature may be more relevant with respect to inventing than borrowing.

The importance of evidence to borrowing sheds light on how electoral considerations relate to inventing and borrowing during policy provision adoption. Members of a state legislature are accountable to their respective district median voters and show that they are acting in the interest of these voters. A classic way that legislators cater to the median voter to improve reelection chances is by adopting policies that they claim advance the interests of this voter (Mayhew 1974). In deciding to adopt a policy, a legislature pays attention to each possible provision that, taken together with all other provisions, composes a policy, and the legislature can invent by adopting a novel policy provision or borrow by adopting a policy provision that already exists in another state.<sup>5</sup>

Since legislators seek reelection, I assume that they do not adopt policy provisions that they believe will not be supported by the median voter regardless of whether those provisions are novel or borrowed. Nonetheless, for legislators, an important criterion in choosing between inventing and borrowing relates to how legislators believe the median voter can visualize the benefits of each action. The ability to grasp the benefit(s) of an adoption decision is what Makse and Volden, building on prior work by Berry and Berry (1992), call “observability” (2011). Makse and Volden define observability as “the degree to which the results of an innovation are visible to others” (2011, 111). Applying their definition, an observable adoption is one whose benefits are immediately and easily visible to the median voter, whereas a less observable adoption is one whose benefits are harder to discern for the median voter. Legislators may think that borrowed policy provisions, which have a visible track record, are generally more observable to the median voter than are invented policy provisions. Legislators may believe this because the median voter has a template (a state that has already adopted the policy provision under consideration) that he or she can use to grasp the potential benefits of borrowing that provision (Pacheco 2012; Volden 2006).

<sup>5</sup>While one may view policy adoption as a two-stage process where legislatures decide to adopt a policy and then decide how to craft the content of the policy regarding inventing and borrowing, I disagree. This is because a bill often passes or fails based on agreement about its content, suggesting that the inventing versus borrowing distinction is a first-order concern that relates simultaneously with the decision to adopt the bill. I therefore model policy provision adoption in one stage.

There is no existing template with respect to inventing, meaning that the median voter is less likely to be able to immediately grasp the benefits associated with inventing. The burden of proof for legislators is greater with inventing.

The observability of a policy provision adoption's benefits especially matters when legislators are vulnerable electorally. Increased electoral vulnerability may cause legislators to believe they are facing more skeptical median voters, and the belief that voters are more skeptical will cause legislators to adopt policy provisions they think are more observable to the median voter so the legislators can claim credibly that they are replicating "successes" that have been adopted elsewhere (Gilardi 2016). As the electoral vulnerability of members of a legislature increases, that legislature experiences an increased likelihood of borrowing during RPS policy provision adoption.

*Electoral Vulnerability Borrowing Hypothesis:* As the electoral vulnerability of members of a legislature increases, that legislature experiences an increased likelihood of borrowing during policy provision adoption.

I suspect that electoral vulnerability increases borrowing but do not think it influences inventing. My argument linking observability to borrowing rules out increases in electoral vulnerability producing increased inventing, as vulnerable legislators would be hard-pressed to sell novel policy provisions to median voters who they believe are skeptical. However, I also do not believe that increased electoral vulnerability decreases the likelihood of inventing: Even if electorally vulnerable lawmakers primarily borrow when crafting policy, some inventing occurs naturally, suggesting that inventing may not decrease substantially. In short, since some inventing occurs automatically in bill adoption, we should not expect even electorally vulnerable legislators to abandon inventing during adoption.

Some may express skepticism that observability matters for borrowing, but evidence links a track record to borrowing. For state legislators considering adopting a policy, Volden (2006) finds that adoption is more likely if a track record exists of that policy's effective adoption in another state. Volden does not find similar results with nonlegislative policy makers and surmises that "the electoral connection is critical to states functioning as policy laboratories" (2006, 310). A reason why the electoral connection matters may be that observability gives lawmakers assurance that they can make credible claims to voters. Other work suggests that voters use performance cues to judge incumbents. Kogan, Lavertu, and Peskowitz (2016)

link school performance metrics to levy passage and show that voters use perceived evidence in political decision making. It is not far-fetched to assume that lawmakers know this and highlight the record of borrowed policies to cue impressions of favorable performance among voters.

## Data and Empirics

I investigate legislative inventing and borrowing using RPS policy provision adoption. An RPS program is a set of provisions encouraging renewable energy use through specifying that utilities supply energy from renewable sources (Rabe 2007). RPS is useful for studying legislative inventing and borrowing. There is a long history of state RPS adoption, with Iowa adopting the first RPS precursor in 1983 (Sarkisian 2016). The states crafted diverse programs, meaning variation exists to analyze inventing and borrowing. State RPS policymaking has occurred without federal guidance, meaning that federal input does not dampen observed inventing and borrowing (McCann, Shipan, and Volden 2015). Last RPS provision adoption occurred overwhelmingly through legislatures, allowing us to study how ideology and electoral accountability influence inventing and borrowing. The study starts in 1983, with Iowa's adoption. It ends in 2011, coinciding with the end of most diffusion of RPS policy across the states.<sup>6</sup>

To evaluate legislative inventing and borrowing, I identify when states initially adopt and amend their RPS programs (these occasions are when provision adoption happens). I also identify the individual provisions and combinations that states adopt, code those individual provision and combination adoptions as inventing or borrowing, and extract legislative cases of inventing and borrowing to construct two binary dependent variables.<sup>7</sup> While no data set details when states adopted individual provisions or combinations, the Database of State Incentives for Renewables and Efficiency (DSIRE) has overviews of every state's RPS program. In these, DSIRE lists individual provisions included in each program. Categories of individual provisions include sources and

<sup>6</sup>Although provisions were mainly adopted legislatively, some states adopted them through public utilities (PUC) rulemaking or ballot initiative: Of 705 cases of provision adoption, 566 (80%) are legislative. The 705 cases break down to 252 of inventing and 453 of borrowing: 199 (78%) of inventing and 367 (81%) of borrowing is legislative. Additionally, 19% of inventing and 13% of borrowing occur through PUCs, and 1% of inventing and 5% of borrowing occur through ballot initiative.

<sup>7</sup>The list of all individual provisions and combinations is in Table A7 in the supporting information (SI).



technologies a state considers as “renewable,” the final target rate or level (mandatory or voluntary) a state sets, whether a state requires using a specific source to meet part of its standard, and whether a state lets utilities trade credits for compliance.<sup>8</sup>

DSIRE lists the names of all enacted documents pertaining to each state’s RPS but does not identify *when* a particular state adopts a particular provision. After reading through every state’s documents, I identify when each state adopts each of its individual provisions.<sup>9</sup> When a document contains an adoption, I use the document’s final passage date as the adoption date. Knowing when states adopt their individual provisions lets me identify and date each combination of individual provisions adopted by a given state at a given time. This lets me characterize the decision to adopt a particular combination as *another* category of provision that can be added to the data on individual provision adoptions. Like the individual adoptions, combinations can be classified as novel or borrowed. Including combinations is desirable since it lets us gauge inventing and borrowing across a state’s individual provisions, or at the program level. I specifically include any combination that contains at least one eligible renewable source or technology *and* one final target rate or limit. This is because an RPS must specify an eligible source and one rate or limit to actually be a “portfolio standard.” Including combinations is not double-counting since a combination is different from an individual provision (in short, the whole is different from its parts).<sup>10</sup> For reproducibility and usability, on pages 40–41 of the supporting information, I provide a thorough description with an example of how combinations were folded into the analysis.

I describe coding adoptions as inventing or borrowing. I define inventing as occurring when a state is either the first to adopt a specific provision or adopts it within the next calendar year after another state was the first to adopt that same provision. Borrowing occurs if a state adopts a provision after the next calendar year following the first adoption of that same provision by any state. I build the grace period into defining inventing to account for when state B adopts a provision at nearly the same time as state A even though state B technically follows first

adopter state A.<sup>11</sup> Distinguishing inventing from borrowing based on comparing when states adopt the same provision comes from an assumption in diffusion research (Beck, Gleditsch, and Beardsley 2006; Volden, Ting, and Carpenter 2008) that at least 1 year must pass for state B to learn about state A’s adoption. I use this process to code all adoptions (including individual provisions *and* combinations) regardless of whether adoptions are legislative or not (though I only investigate legislative instances).<sup>12</sup>

As for data structure, inventing and borrowing are types of adoption, and scholars use pooled event history analysis (PEHA) to study provision adoption (Boehmke 2009; Boushey 2016; Makse and Volden 2011). With PEHA, scholars combine the risk sets of different provision adoptions, set state-year-provision adoption choice as the unit of analysis, and estimate how independent variables influence adoption across the pooled risk set. Scholars also set a “period of observation” when states have the opportunity to adopt a particular provision (Boushey 2016, 205). I follow these conventions. However, I set different periods of observation for inventing and borrowing to match the definitions of these concepts. A state gains the opportunity to invent for *all* provisions in 1983 (when Iowa created a proto-RPS) but loses this opportunity if it invents or if 2 years pass from the year when the first state invents.<sup>13</sup> A state gains the opportunity to borrow a provision 2 years after the first state invented that provision and loses this opportunity upon borrowing.<sup>14</sup> The risk sets of inventing and borrowing do not overlap, so a state cannot simultaneously invent and borrow the same provision. A state loses the opportunity to adopt a provision (and hence invent or borrow) once it adopts regardless of whether it adopts legislatively. A state legislature cannot adopt a provision that the state’s

<sup>8</sup>I employ the same definitions of inventing and borrowing for rates as for all other adoptions. This is because an unprecedented rate is technically novel even if it is near an existing rate. Although this may lump marginal with substantial inventing, I account for the issue in robustness.

<sup>9</sup>I read 280 documents from 37 states (this list is in SI Table A8).

<sup>10</sup>Nonetheless, in Table 3, I drop combinations from the analysis.

<sup>11</sup>Suppose Ohio invents by being the first state to include microturbines in its RPS in August 2009. If Michigan adopts microturbines in October 2009, we cannot claim that Michigan borrows from Ohio. I therefore allow any other state’s adoption of microturbines between August 2009 and the end of 2010 to count as inventing (adopting microturbines after 2010 is borrowing). Defining inventing with the grace period accommodates when Michigan nearly contemporaneously adopts microturbines alongside Ohio and also accommodates when a third state desires to adopt microturbines at the same time as Ohio but cannot until 2010 since its legislature does not meet during Ohio’s adoption.

<sup>12</sup>Coding *regardless* of which institution (legislative or not) adopts avoids mistaken assignment of inventing and borrowing.

<sup>13</sup>If the first state invents a provision in 1997, that state has the opportunity to invent from 1983 to 1997. Assuming no other state invents the same provision by 1997, all other states have this opportunity from 1983 to 1998 but lose it from 1999 onward.

<sup>14</sup>Using the same provision from the inventing example, states can borrow from 1999 onward and lose this opportunity once they adopt the provision.



PUC adopted; hence, the opportunity to adopt in my legislative dependent variables disappears once a nonlegislative actor in the same state has adopted.<sup>15</sup> The rules regarding risk sets are the same for individual provisions and combinations.

My binary dependent variables are *Legislative Inventing*, which has a value of 1 if a legislature invents during adoption and 0 otherwise, and *Legislative Borrowing*, which has a value of 1 if a legislature borrows during adoption and 0 otherwise. Successful legislative inventing describes the adoption of individual provisions and combinations that are coded as inventing and occur legislatively. Successful legislative borrowing describes the adoption of individual provisions and combinations that are coded as borrowing and occur legislatively. Inventing and borrowing have disjointed risk sets, and the sizes of each risk set are different. For the main inventing data, there are 230,970 opportunities for legislatures to invent with 199 instances of legislative inventing. For the main borrowing data, there are 54,093 opportunities for legislatures to borrow with 367 actual instances. I evaluate claims through logistic regression using state-clustered errors.

A motivation here is to evaluate how key explanations can differentially impact inventing and borrowing. I use a near-identical set of independent variables and controls in the models of inventing and borrowing. *Legislative Ideology* is contemporaneous state elite ideology as devised in Berry et al. (1998) and updated. A positive significant relationship between legislative ideology and legislative inventing lends support for the Legislative Ideology and Inventing Hypothesis. *Median Incumbent Vote Share* is the median vote share received by an incumbent in the most recent state legislative election and captures electoral vulnerability whereby a lower vote share reflects greater anti-incumbent mood. This variable comes from Klarner et al. (2013), and a negative significant relationship between this variable and legislative borrowing lends support to the Electoral Vulnerability Borrowing Hypothesis. Although the means of this variable are above 50% for inventing and borrowing (70.24 and 72.97), in several instances (e.g., many races in New Hampshire), candidates won an election with vote shares smaller than 50%. It is possible for this variable to be under 50%.

I include controls. *Real Energy Price* reports the end-use energy price (in 2011 dollars) per million British thermal units, comes from the U.S. Energy Information Administration (2013), and captures how price influences

inventing and borrowing (Besley and Coate 2003; Stokes and Warshaw 2017). *State Citizen Ideology* comes from an updated version of the variable in Berry et al. (1998) and captures citizen demand for inventing or borrowing with respect to RPS. *Legislative Professionalism* comes from Squire (2007) and captures how legislative resources influence inventing and borrowing. *State per Capita Income* (measured as a percentage of federal per capita income where the federal level is 100), and the *Urban Percentage* of a state's population captures how fiscal resources influence inventing and borrowing. *Change in State Unemployment* addresses whether lawmakers invent and borrow with RPS to combat rising unemployment (Lyon and Yin 2010).

*Fossil Fuel Production* (the percentage of a state's energy produced from fossil fuels) addresses whether higher fossil fuel production reduces RPS provision adoption. I include whether a state has a *Deregulated* electricity sector because a number of states introduced RPS as part of deregulation legislation (Carley, Nicholson-Crotty, and Miller 2016). *Unified Democratic Government* measures whether a state has a unified government controlled by the Democrats and captures whether unified Democratic states are more likely to invent RPS policy provisions. *Party Decline* comes from Volden (2002); is binary; and has a value of 1 when a party holds unified government in the current period, held unified government in the previous period, lost seats since the previous period, and controls less than two-thirds of the seats in either legislative chamber. Volden argued that declining partisan regimes in state legislatures give bureaucrats discretion to preserve policy choices in the aftermath of the partisan regime's demise. I use it to see whether a declining partisan regime tries inventing policy provisions before losing power.

Additional variables show how interdependence affects state provision adoption. *Geographic Neighbor* records the fraction of total RPS provision adoptions (irrespective of whether those were inventing or borrowing) that have occurred by the year  $t-1$  in states bordering state  $i$ . A state may be more likely to adopt RPS policy provisions if its geographic neighbors have already adopted a large fraction of them.<sup>16</sup> This variable captures the true extent of neighbors' policymaking activity on state  $i$ , as it indexes neighbors' adoption over systemic (50-state) adoption.<sup>17</sup> *Ideological Neighbor* records the fraction of

<sup>15</sup>Landlocked states cannot make any adoption (including individual and combination-based provisions) specifying the ocean as a source. I define *landlocked* on page 40 in the SI.

<sup>16</sup>For state  $i$  in year  $t$ , this variable equals the sum of provision adoptions that occurred in neighbors as of year  $t-1$  divided by the sum of provision adoptions that occurred in all states as of  $t-1$ .

<sup>17</sup>Adjusting this variable so grace period inventors in year  $t-1$  are uninfluenced by first adopters in year  $t$  does not substantially

total RPS provision adoptions that have occurred by the year  $t-1$  in states considered to be ideological neighbors of state  $i$ .<sup>18</sup> A state may be more likely to adopt RPS policy provisions if its ideological neighbors have adopted a large fraction of RPS policy provisions.

Remaining controls account for a state's previous inventing and borrowing activity and time's influence on legislative inventing and borrowing. For inventing models, *Prior Inventing* is the total number of previous instances of inventing that occurred in state  $i$  divided by the total number of previous instances of inventing that occurred across all states and implies that a given state may be inventive naturally. For borrowing models, *Prior Borrowing* is the total number of previous instances of borrowing that occurred in state  $i$  divided by the total number of previous instances of borrowing that occurred across all states. *Year* occurs in inventing and borrowing models and reports the calendar year for a given state-year policy provision adoption choice under the assumption that provision adoption is more likely as time progresses. *Provision Year* appears for borrowing models and is a counter beginning at 1 during the year in which a specific policy provision is first adopted by some state across all states. Provision year captures the possibility that a state is more likely to adopt a specific policy provision as time elapses since that provision was first adopted across the states.<sup>19</sup> Table 1 displays variable sources and summary statistics.

## Results

Table 2 displays results from four logistic models with state-clustered errors. Models 1 and 2 show results for the binary legislative inventing and borrowing dependent variables, respectively, using the main inventing and

impact results. Moreover, its link with inventing corroborates Karch's (2007) view linking diffusion to customization. Using traditional measures like the proportion or count of neighbors adopting RPS produces no link with inventing.

<sup>18</sup>I define state  $i$ 's ideological neighbors to be those states whose government ideology scores (using Berry's et al. 1998, measure) from year  $t-1$  are within 10.22 points of state  $i$ 's government ideology score in year  $t$ ; 10.22 points represents 20% of the mean of government ideology (51.10), and I use the bandwidth of plus or minus 10.22 instead of the standard deviation because using the latter would include over half of all states. I relate state  $i$  in year  $t$  to ideological peer states in year  $t-1$  since the government in state  $i$  is looking at prior (and not contemporaneous) adoptions that occurred in peer states.

<sup>19</sup>I cannot concurrently estimate higher orders of the *Year* variable (Carter and Signorino 2010) due to perfect collinearity. Substituting higher orders of *Year* and including higher orders of *Provision Year* do not change results.

borrowing data sets. Models 3 and 4 are included for robustness and show results for legislative inventing and borrowing using what I call the synonyms data sets. In Models 1–4, I include adoptions of individual provisions as well as adoptions of combinations of individual provisions in the analysis.<sup>20</sup> DSIRE identifies the names of RPS provisions adopted across the states, but states sometimes use different names for the same individual policy provision. New York stipulates that its RPS requirements be met through “customer-sited” sources, whereas Arizona mandates using “distributed generation” (North Carolina Clean Energy Technology Center 2013). Electricity generated through customer-sited or distributed generation processes refer to the same provision, as both terms refer to using local resources and facilities to generate electricity rather than transmitting it over long distances. Treating these terms as different would lead to overcounting inventing and undercounting borrowing.

DSIRE lists but does not define RPS provisions. I consult descriptions from the U.S. Department of Energy, the National Renewable Energy Laboratory, the U.S. Environmental Protection Agency, the U. S. Energy Information Administration, and industry associations to distinguish provisions from one another and create alternate pooled event history data sets for inventing and borrowing where synonymous provisions are regarded as the same provision.<sup>21</sup> The synonyms data sets are necessarily smaller than the main data sets due to synonymous provisions, being combined.

In Table 3, I drop instances of adopting or not adopting *combinations* of individual policy provisions from the analysis. Although my definitions of inventing and borrowing allow for a state legislature to invent or borrow based on when it adopts a particular combination of individual policy provisions compared to when other states do so, including combinations potentially creates complications since a given combination may include cases of inventing *and* borrowing among its constituent individual provisions. Combinations thus may muddy the distinction between inventing and borrowing and are dropped. Models 5 and 6 pertain to the main inventing and borrowing data sets, whereas Models 7 and 8 utilize the synonyms data sets. I estimate Models 5–8 via logistic regression with state-clustered errors.

Results from Tables 2 and 3 corroborate hypotheses. The positive and significant relationship between

<sup>20</sup>Recall that I treat the adoption of combinations of individual provisions as provisions in themselves that can be coded as inventing or borrowing and folded into the analysis.

<sup>21</sup>Details on the synonyms procedure are on page 28 (notes and List A1) of the SI. Sources consulted for synonyms are in SI List A2.

**TABLE 1 Variable Sources and Summary Statistics for Inventing and Borrowing<sup>†</sup>**

Variable	Sources	Means	St. Dev.
Leg. Inventing	Provision adoption master data <sup>^</sup>	0.00/NA	0.03/NA
Leg. Borrowing	Provision adoption master data <sup>^</sup>	NA/0.01	NA/0.08
Leg. Ideology	Berry ideology	51.83/51.35	24.78/29.73
Mdn. Inc. Vote Share	Klarner legislative elections	70.24/72.97	21.30/21.31
Real Energy Price	Energy Information Administration	15.00/18.22	3.43/4.43
Citizen Ideology	Berry ideology	50.13/51.95	15.03/15.72
Leg. Professionalism	Squire index	0.21/0.19	0.13/0.12
State per Capita Income	Bureau of Economic Analysis <sup>*</sup>	96.62/96.96	14.18/13.87
Urban Percentage	Census Bureau	69.67/72.04	14.47/14.52
Change in Unemployment	Bureau of Labor Statistics <sup>*</sup>	−0.14/0.37	0.90/1.28
Fossil Fuel Production	Energy Information Administration	40.94/39.29	40.63/40.58
Deregulated	Delmas, Russo, and Montes-Sancho 2007 <sup>^^</sup>	0.15/0.36	0.36/0.48
Unified Dem. Government	Multiple <sup>^^^</sup>	0.26/0.24	0.44/0.43
Party Decline	Multiple <sup>^^^</sup>	0.05/0.09	0.22/0.29
Geographic Neighbor	Provision adoption master data <sup>^#</sup>	0.09/0.08	0.24/0.09
Ideological Neighbor	Provision adoption master data <sup>^#</sup>	0.23/0.21	0.34/0.16
Prior Invention	Provision adoption master data <sup>^</sup>	0.02/NA	0.10/NA
Prior Borrowing	Provision adoption master data <sup>^</sup>	NA/0.02	NA/0.03
Year	Provision adoption master data <sup>^</sup>	1,994.66/2,006.10	7.44/4.77
Provision Year	Provision adoption master data <sup>^</sup>	NA/7.49	NA/4.28

Note: <sup>†</sup>Since inventing and borrowing have separate data sets, I display *sets* of means and standard deviations in the form of “inventing/borrowing.” I show statistics for the main data sets of the article.

<sup>^</sup>Provision names are from DSIRE (as of 2013). Adoption dates are from documents mentioned in DSIRE. The document list is on page 8 of the SI.

<sup>\*</sup>I gathered these variables in 2013. Results do not change with updated estimates.

<sup>^^</sup>I supplement Delmas, Russo, and Montes-Sancho (2007) data with information from ElectricChoice.com.

<sup>^^^</sup>I supplement Klarner et al. (2013) data with Book of the States and National Conference of State Legislatures records.

<sup>#</sup>For Geographic Neighbor, I use census maps to identify neighbors. For Ideological Neighbor, I use Berry et al. (1998) ideology data to identify ideologically similar states.

legislative ideology and legislative inventing gives support for the Legislative Ideology and Inventing Hypothesis. The negative and significant relationship between median incumbent vote share and borrowing suggests that legislators are more likely to borrow in hopes of promising voters observable benefits.

Figure 1 displays predicted probabilities associated with legislative ideology and the dependent variables of legislative inventing and borrowing using synonyms data sets from Table 2 with binary controls set to common values and other controls set at their means. Similar slopes for inventing and borrowing are unsurprising since both represent adoption and increased liberal ideology should result in greater RPS provision adoption. The smaller-scaled y-axis for inventing makes sense given that it has fewer successes but more opportunities than borrowing. Comparing the 2007–2011 adoption behavior of Illinois and Indiana illustrates the link between legislative ideology and inventing; Illinois was more left-leaning than Indiana (average state scores for 2007–2011 were 89.72 ver-

sus 21.02) and invented four times more than Indiana.<sup>22</sup> The nonsignificance concerning borrowing is intriguing: Perhaps ideologically diverse states borrow more. Analysts could address this possibility further by applying the framework here to multiple policy areas.

Figure 2 uses synonyms data sets from Table 2 and shows how median incumbent vote share from a state's most recent legislative election influences inventing and borrowing. Decreases in electoral vulnerability (increases in median incumbent vote share) decrease borrowing more intensely than inventing. The same Illinois–Indiana comparison illustrates the link between vulnerability and borrowing; Indiana borrowed over three times as many provisions as Illinois in the same span and had an average vote share value of 65.96 versus 94.74 for Illinois. Note again that inventing is less common than borrowing, resulting in a smaller-scaled y-axis for the former.

<sup>22</sup>This time span corresponds to substantial RPS policymaking in the Midwest.

TABLE 2 Legislative Inventing and Borrowing

Variable	Inventing (1)	Borrowing (2)	Inventing (3)	Borrowing (4)
Legislative Ideology	0.016* (0.007)	0.013 (0.010)	0.014* (0.007)	0.011 (0.010)
Median Incumbent Vote Share	−0.009 (0.006)	−0.022** (0.007)	−0.007 (0.005)	−0.022** (0.007)
Real Energy Price	−0.092 (0.050)	−0.042 (0.060)	−0.082 (0.051)	−0.037 (0.062)
Citizen Ideology	0.023 (0.013)	0.028* (0.013)	0.019 (0.014)	0.029* (0.013)
Legislative Professionalism	−0.073 (1.134)	0.314 (1.643)	−0.566 (1.254)	0.385 (1.673)
State per Capita Income	0.002 (0.016)	−0.016 (0.012)	0.010 (0.015)	−0.015 (0.012)
Urban Percentage	0.011 (0.013)	0.034* (0.013)	0.008 (0.015)	0.034* (0.014)
Change in Unemployment	−0.133 (0.178)	−0.006 (0.165)	−0.190 (0.155)	0.003 (0.165)
Fossil Fuel Production	−0.001 (0.003)	0.001 (0.004)	−0.002 (0.003)	0.001 (0.004)
Deregulated	−0.232 (0.363)	0.660 (0.394)	−0.087 (0.352)	0.659 (0.399)
Unified Democratic Government	−0.383 (0.409)	−0.080 (0.521)	−0.487 (0.389)	0.016 (0.514)
Party Decline	0.104 (0.460)	0.307 (0.465)	0.183 (0.391)	0.313 (0.495)
Geographic Neighbor	2.053* (0.805)	1.535 (1.151)	1.929** (0.739)	1.541 (1.109)
Ideological Neighbor	−1.011 (1.338)	−2.095 (1.205)	−0.475 (1.040)	−1.413 (1.124)
Prior Inventing	0.845 (2.897)		1.171 (2.513)	
Prior Borrowing		−62.038** (16.610)		−62.854** (16.635)
Year	0.257** (0.047)	0.070 (0.042)	0.241** (0.045)	0.066 (0.042)
Provision Year		0.158** (0.007)		0.160** (0.007)
Wald $\chi^2$	166.54**	941.20**	168.71**	827.84**
Observations	230,970 (199)	54,093 (367)	182,984 (169)	47,433 (357)

Note: \*\* = .01 and \* = .05 with respect to critical thresholds. Model numbers are in heading row. Numbers in parentheses in observations row show positive occurrences of DV.

Robustness

I include robustness checks, all involving permutations on data from Table 2. One concern is that my conceptualization of inventing lumps marginal and substantial inventing together. I tackle this issue in two ways. In SI Table A1, I drop all rates from the analysis and find results

unchanged. In SI Table A2, I consider all rate provisions sharing a similar percentage threshold (being within the same percentage decile) and similar status regarding being required or voluntary to be the same provision.<sup>23</sup>

<sup>23</sup>For example, all *required* retail rates from 20 to 29.9% are considered as the same provision.



TABLE 3 Legislative Inventing and Borrowing without Combinations

Variable	Inventing (5)	Borrowing (6)	Inventing (7)	Borrowing (8)
Legislative Ideology	0.019* (0.007)	0.011 (0.009)	0.019* (0.008)	0.011 (0.010)
Median Incumbent Vote Share	−0.005 (0.012)	−0.022** (0.007)	−0.0004 (0.010)	−0.022** (0.007)
Real Energy Price	−0.121 (0.078)	−0.032 (0.061)	−0.112 (0.086)	−0.032 (0.062)
Citizen Ideology	0.029 (0.019)	0.028* (0.013)	0.020 (0.020)	0.029* (0.013)
Legislative Professionalism	0.407 (1.352)	0.312 (1.702)	−0.208 (1.585)	0.431 (1.720)
State per Capita Income	0.015 (0.029)	−0.016 (0.012)	0.030 (0.029)	−0.015 (0.012)
Urban Percentage	0.004 (0.018)	0.036* (0.014)	−0.004 (0.021)	0.035* (0.014)
Change in Unemployment	−0.141 (0.290)	−0.005 (0.164)	−0.328 (0.263)	0.003 (0.167)
Fossil Fuel Production	−0.002 (0.004)	0.001 (0.004)	−0.004 (0.004)	0.001 (0.004)
Deregulated	−0.236 (0.525)	0.661 (0.378)	0.033 (0.545)	0.697 (0.390)
Unified Democratic Government	−0.525 (0.490)	−0.020 (0.515)	−0.843 (0.508)	0.038 (0.516)
Party Decline	−0.105 (0.694)	0.278 (0.464)	0.031 (0.518)	0.290 (0.497)
Geographic Neighbor	1.566* (0.791)	0.843 (1.383)	1.586 (0.841)	0.872 (1.386)
Ideological Neighbor	−0.010 (0.869)	−1.383 (1.218)	−0.315 (0.976)	−1.355 (1.193)
Prior Inventing	−3.805 (8.581)		−3.553 (8.238)	
Prior Borrowing		−60.239** (16.615)		−60.317** (16.513)
Year	0.233** (0.064)	0.079 (0.040)	0.221** (0.070)	0.089* (0.041)
Provision Year		0.136** (0.007)		0.134** (0.007)
Wald $\chi^2$	246.73**	695.14**	274.54**	601.19**
Observations	130,994 (122)	37,236 (367)	90,924 (96)	30,926 (357)

Note: \*\* = .01; and \* = .05 with respect to critical thresholds. Model numbers are in heading row. Numbers in parentheses in observations row show positive occurrences of DV.

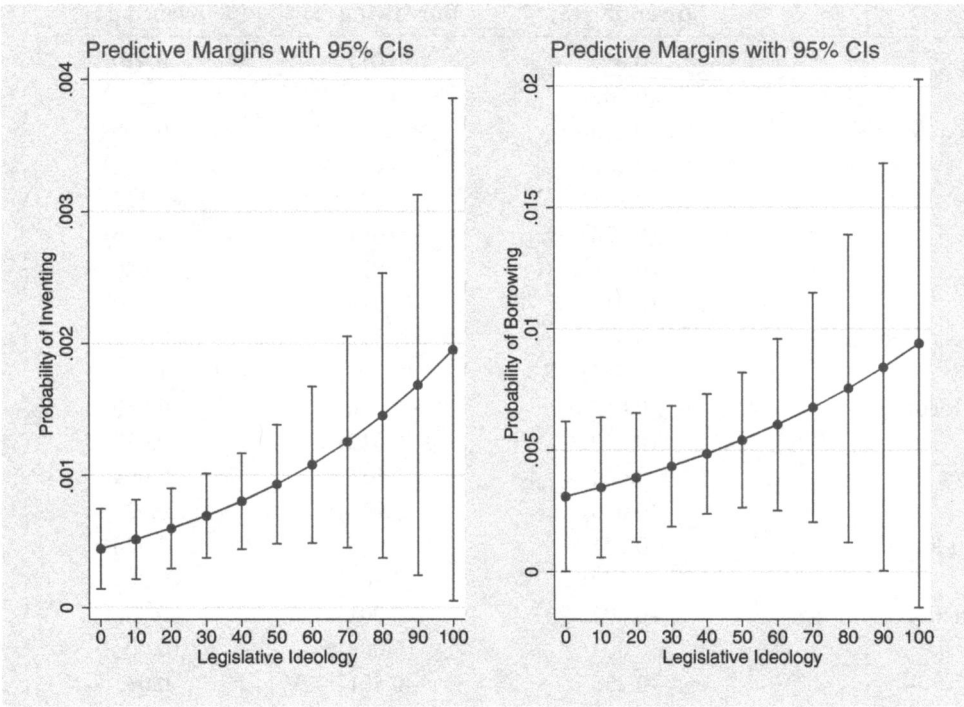
My logic here is that jumping to a new decile is a departure from the old regulatory environment. Results are unchanged.

In SI Table A3, I include a binary *Weak Unified Legislature* variable to capture macro electoral vulnerability. This variable has a value of 1 if a state has a unified legislature but the dominant party holds under 55%

of the seats in each chamber. Vulnerability stems from holding a weak majority, and including the variable leaves results unchanged.

In SI Table A4, I use a standard version of ideological similarity, a state government’s ideological distance in absolute value to the median ideology of states that have already adopted RPS programs, instead of the

FIGURE 1 Legislative Ideology on Invention versus Borrowing



ideological neighbor variable. Including this *Ideological Distance to Median RPS State* variable leaves results unchanged. Dropping the ideological neighbor variable (SI Table A5) also leaves results unchanged. While the nonsignificance of ideology and ideological similarity regarding borrowing may be an artifact of RPS data, it is possible that at the provision level of analysis, the observability of borrowing (Berry and Berry 1992; Makse and Volden 2011) may make it more amenable across the ideological spectrum and blunt the importance of ideology and ideological similarity. Future work across multiple policy areas could confirm this possibility.

In SI Table A6, I substitute the Berry et al. (1998) measure with measures from Shor and McCarty (2011) and Pacheco (2011). Although the Shor and McCarty measure barely fails to achieve significance at a .05 threshold, it corroborates the key finding regarding legislative ideology and inventing. Pacheco’s measure does not, and I offer two reasons why: The measure ends in 2006, meaning many cases of inventing and borrowing are dropped; and the measure captures resident rather than elite-level ideology.

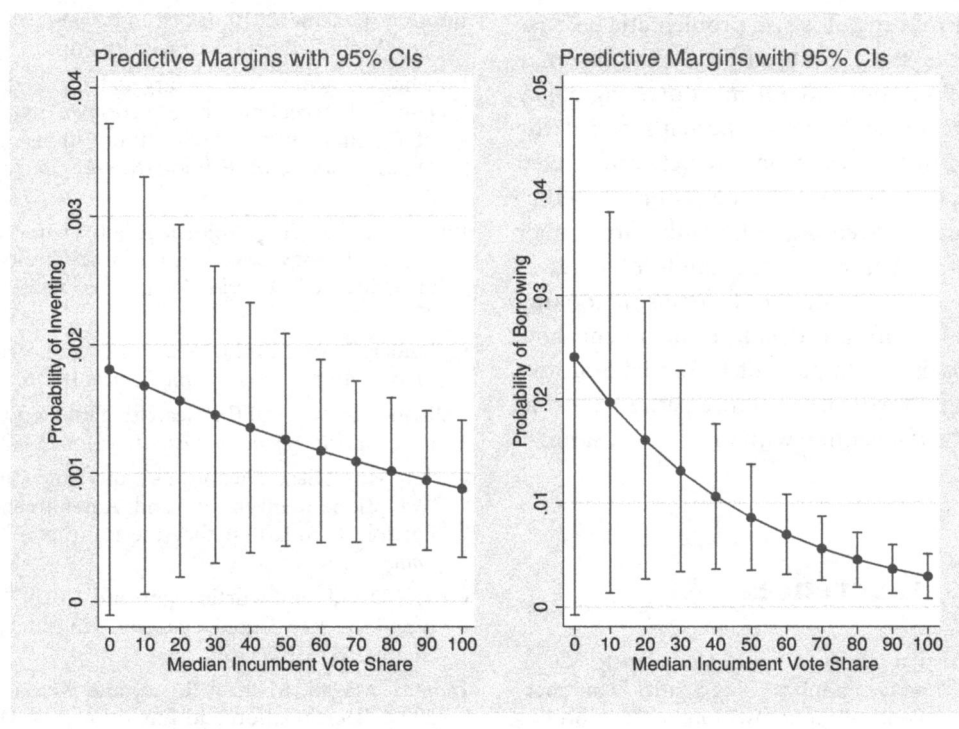
I make a note (on page 40 of the SI) about year and state fixed effects: Year effects address temporal shocks influencing adoption, and results pertaining to inventing are

unchanged when using them. Models using year effects with state-clustered errors to predict borrowing do not converge, and models using state fixed effects with state-clustered errors to predict inventing and borrowing do not converge. In SI Table A9, I use a rare events logit (King and Zeng 2001) and find results unchanged. The rareness of inventing and borrowing is not a “problem” but a feature of analyzing provisions using the event history method.

Conclusion

Although much scholarship has investigated policy diffusion, scant attention has been given to how states invent rather than borrow. I examine legislative RPS provision adoptions to determine whether factors influence inventing and borrowing differentially. Using the RPS data, I find that inventing occurs mainly among left-leaning legislatures, whereas borrowing occurs due to electoral vulnerability.

I offer insights for the future study of diffusion. I show tentatively that inventing and borrowing are distinct and give scholars a framework for distinguishing them. This framework could be used to broaden the analysis

**FIGURE 2 Median Incumbent Vote Share on Invention versus Borrowing**

provided here. While some conservative governments (e.g., Utah) adopted RPS, this policy leans left, meaning that we do not observe whether conservative governments invent more in policy areas with right-leaning connotations. Insofar as ideologues are more likely to know about and believe that novel policy proposals fitting their worldviews should be adopted, I believe the logic upholding liberal inventing in RPS could explain conservative inventing in anti-abortion policy, school choice, and increasing firearms access. One could apply the framework here to the large SPID database by Boehmke et al. (2018). SPID includes hundreds of policies from liberal and conservative orientations, and a researcher could extend the analysis here to that database and explore conservative inventing and robustness across other liberal policies. This extension would also allow for exploring whether government ideology systematically influences inventing more than borrowing, for fully evaluating the formal theoretic work of Volden, Ting, and Carpenter (2008) empirically, and for working toward an empirical treatment of Callander (2011a, 2011b).<sup>24</sup>

<sup>24</sup>The same extension could test whether liberalism (greater appreciation for government action) or extremism drives inventing. I think the former is less likely since it overlooks many areas in which right-leaning governments could invent and since many analyses here indicate greater support for legislative ideology influencing inventing more than borrowing. This question is answerable by

Other extensions exist. Kreitzer and Boehmke (2016) use random coefficients to show how independent variable effects vary across policies in predicting state adoption of abortion-restriction law. Scholars could use provision-specific random intercepts to capture heterogeneous adoption probabilities for each of the provisions in the RPS data, or they could use provision-specific random coefficients to show how the effect of a variable like geographic contiguity differs for each of the provisions. I do not pursue these goals here, given space constraints and the different theoretical focus implied by provision-specific random modeling, but I consider this an ideal follow-up.<sup>25</sup>

The results of the study matter for the larger body politic. If the roots of inventing are ideological, as the finding linking leftward legislatures to novel RPS provision adoption suggests, then future research should explore how inventing could be more ideologically broad-based in nature, especially if such broadness increases feelings of legitimacy about policymaking. While the finding linking

applying my method to a full breadth of provision data across many areas.

<sup>25</sup>Inventing results do not change with state random effects, but the influence of vulnerability on borrowing flips and is at odds with prominent diffusion literature. The strong assumption of noncorrelation between state dispersions and independent variables might be the issue.

vulnerability to borrowing is encouraging because it shows that electoral accountability shields citizens from potentially risky inventing, it is also problematic because it suggests that the same electoral accountability may not produce novel solutions to our most pressing policy challenges. Future research should perhaps revisit the classic distinction in political economy between elected and appointed policy makers to determine whether appointees approach inventing differently from their elected counterparts. Ultimately, the ability of states to serve as laboratories is a strength of federalism. Looking at lawmakers in significant detail, I document how the inventive capacity so important to the laboratories metaphor is brought forth and outline a path forward to integrate the study of inventing with that of diffusion.

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## Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Table A1:** Results Dropping Rate/Threshold Policy Provisions

**Table A2:** Results Using Deciles/Bandwidths

**Table A3:** Results Including Weak Unified Legislature Variable

**Table A4:** Results Using Standard Ideological Similarity Variable

**Table A5:** Dropping the Ideological Neighbors Variable

<b>Table A6:</b> Alternate Measures of Ideology	<b>List A2:</b> Sources Used to Validate Synonym Classification Process
<b>Table A7:</b> List of Policy Provisions in Main Dataset	<b>Note on Using Year Fixed Effects and State Fixed Effects</b>
<b>Table A8:</b> List of Documents Used to Identify Policy Provisions	<b>Note on Landlocked States</b>
<b>Note on Synonyms</b>	<b>Table A9:</b> Rare Events Logit Results
<b>List A1</b> of Synonyms with Justification	<b>Note on Combinations</b>