Free-Riders or Competitive Races? Strategic Interaction across the American States on Tobacco Policymaking

Julianna Pacheco, PhD

julianna-pacheco@uiowa.edu

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Abstract: The majority of research on strategic interaction among the American states makes two assumptions. First, we assume that strategic interaction induces *competitive races* whereby policy adoption in one state increases the probability of adoption in another. Yet, strategic interaction need not be positive. Instead, states may engage in *free-riding dynamics* if policies in neighboring states are associated with positive externalities. A second assumption is that strategic interaction occurs during the policy enactment stage. If states are strategic actors, then they are not only influenced by the policies that are enacted in neighboring states, but also by policies that are being *introduced* in neighboring states. Using a unique dataset on four different types of tobacco policies that are introduced and enacted in the states from 1990-2010, I find evidence that states engage in free-riding dynamics and that strategic interaction exists in the early stages of agenda-setting as well as during policy adoption. Overall, the results stress the importance of scholars to explore the conditional nature of policy diffusion dynamics by focusing on variations in policy content and stages of the policymaking process other than policy enactment.

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State politics scholars have long been interested in studying the effects of interstate competition on policy diffusion across the American states. According to this theory, state officials make policy choices to gain an advantage, often economically, over proximate states and attract the "best residents" (Tiebout 1956).[1] The diffusion of lottery adoptions across states, for instance, occurs because states are fearful of losing revenues when residents travel to nearby states to play the lottery (Berry and Berry 1990; Berry & Baybeck 2005). Interstate competition also explains the "race to the bottom" (RTB) dynamics of welfare policy as well as other redistributive programs whereby states cut their benefits in response to their neighbors' cuts to avoid becoming "magnets" for undesirable populations (Peterson and Rom 1990; Berry, Fording, and Hanson 2003; Bailey and Rom 2004; but, see Volden 2002).

An implicit assumption with studies on interstate competition is that there is strategic interaction among the states (Volden, Ting, and Carpenter 2008). State A adopts a policy strategically to gain some benefit over State B. This is a reasonable assumption, particularly since policy diffusion occurs most frequently across neighboring states. Yet, scholars have overwhelmingly assumed that strategic interaction necessarily causes a *positive* effect of policy adoption across contiguous states. In other word, actions in State B promote similar actions in State A. As explained by Franzese and Hays (2007), however, strategic interaction need not be positive. Instead, the impact of State B's actions on the actions of State A depends on the

[1] The majority of articles concentrate on learning and economic competition as mechanisms, although others also exist. Other mechanisms include coercion, imitation, or socialization (e.g., Shipan and Volden 2008) as well as migration (Franzese and Hays 2007) and social contagion (Pacheco 2012). Regardless of the specific mechanism, the point is that interedependence likely exists prior to enactment.

externalities of those actions. Negative externalities like lost revenue are likely to create *competitive races* such that behavior in State B positively influences similar behavior in State A. On the other hand, positive externalities like the spillover benefits that State A receives from environmental regulations in State B are likely to induce *free-rider* dynamics (Franzese and Hays 2006), whereby the actions of State B negatively influence similar actions in State A.

From a theoretical perspective, most researchers assume that strategic interaction starts at the policy adoption stage (e.g., Baybeck, Berry, and Siegel 2011). Alternatively, it is likely that strategic interaction occurs well before policy adoption whereby state actors are continuously monitoring and evaluating ideas that emerge from neighboring states, even if these ideas are never enacted or implemented. For instance, a state may quickly pass a law when neighboring states are introducing similar laws that have negative externalities like lost revenue. If this is the case, then the early stages of agenda setting (e.g., Kingdon 1995) are crucial components of policy diffusion and by concentrating on policy adoptions, previous researchers have potentially truncated the competitive process that explains the spread of policies.[2]

This paper provides a more complete view of how policies spread (or not) from one state to another by focusing on the interdependence of *policy content* associated with tobacco legislation. I focus on four types of tobacco policies including those that aim to control the consumption and sale of tobacco, to regulate environmental smoke, to pursue litigation, and to raise revenue or direct funds associated with tobacco. Not only are these four types of policies

[2] Additionally, scholars may have mischaracterized state innovativeness by focusing solely on policy adoptions. For instance, a state would be classified as innovative if it was the first to pass a particular bill, even if it enacted a similar bill that was introduced in another state, but that failed to pass into law.

substantively interesting, but they are also associated with different externalities which allow me to consider how the types of policies induce *free-rider dynamics* or *competitive races* (e.g., Franzese and Hays 2007) across the American states. In addition, I explore strategic interaction in the early stages of the policy-making process by looking at bill introductions as well as policy enactments.

Using dynamic spatial-lag models, I find evidence of both free-rider dynamics and competitive races, depending on the type of policy. There is evidence that states engage in free-riding with the introduction of tobacco bills in the control category and the enactment of bills associated with environmental smoke, presumably because both are associated with positive externalities. Competitive races are present in the introduction of tobacco bills associated with litigation due to negative externalities. On other hand, I find that states are *more* likely to introduce bills regarding the environment after neighboring polices introduce similar bills; and states are *less* likely to enact bills regarding litigation after neighboring policies enact similar bills. Both of these results go against expectations if strategic interaction depends on policy externalities alone. Lastly, there is no empirical evidence that strategic interaction occurs in the realm of finance tobacco bills, which is surprising given that many of these bills deal directly with the increase of cigarette taxes.

Overall, the results stress the importance of scholars to explore the conditional nature of policy diffusion dynamics by focusing on variations in *policy content*. Because previous research focuses primarily on policy adoptions, we are likely missing nuances about the diffusion process by not exploring the policy content of those adoptions (e.g., Graham, Shipan, and Volden 2013; Karch 2007). By looking at policy content, we gain insight about how states are strategically motivated by the externalities of policies. In addition, evidence suggests that

strategic interaction occurs in the early agenda-setting stages of the policymaking process whereby states are deciding which issues to pay attention to and the types of policy solutions to pursue. Scholars are encouraged to consider other stages of the policymaking process, such as the early stages of agenda setting and the later stages of implementation, when studying policy diffusion dynamics.

Strategic Interaction in State Policymaking

According to Franzese and Hays (2008), "strategic interdependence arises whenever the actions of some unit(s) affect the marginal utility of alternative actions for some other unit(s)" (4). In short, diffusion is not spurious (Volden, Ting, and Carpenter 2008). Instead, for example, the actions of State A are dependent on the actions of State B and vice versa. The implication is that the polities of states affect policymaking in other states. For instance, when making policy decisions, state actors not only rely on internal factors, such as public opinion, electoral competition, or problem severity, but also on external factors, such as the number of policies adopted in neighboring (Berry and Berry 1990) or ideologically similar (Grossback, Nicholson-Crotty & Peterson 2004) states.

While scholars have identified important factors that influence the interdependence in state policymaking, we have largely ignored how policy characteristics impact this process. Theories of strategic interdependence, for instance, suggest that *how* the actions of State B impact State A depends on the *externalities* of the specific actions. Externalities may be positive (e.g., anti-pollution policies) or negative (e.g., tax increases). Positive externalities induce *free-rider* dynamics whereby policies are strategic substitutes (Franzese and Hays 2006). That is, policy changes in one state create incentives for other states to not adopt any policies or even adopt policies in the opposite direction. Redoano (2003), for instance, finds such free rider

dynamics among military allies with defense expenditures as does Franzese and Hays (2006) in EU active-labor-market policies. Free-rider dynamics encourage strategic delay, inaction, and, consequently, a slower rate of diffusion across the states. For policies with positive externalities, the slope of the S-shaped curve that typically describes the diffusion process is comparatively flat, indicating slow diffusion across the states (Mahajan and Peterson 1985; Boushey 2010).

By contrast, negative externalities create *competitive races* whereby policies are strategic complements (Franzese and Hays 2006). Policy changes in State B create incentives for other states to adopt similar changes. The classic example of a negative externality is lost revenue; tax increases in one jurisdiction have negative externalities for competitors, thereby spurring them to increase taxes as well. As another example, states who are fearful of attracting lower income residents from neighboring states may adjust their welfare policies when neighboring states adopt new policies (Berry, Fording, and Hansen 2003). Competitive races encourage states to be early-movers (e.g., innovators) so they reap greater economic or other benefits. Policies that have negative externalities are expected to produce an S-shaped curve with a steep slope indicating a fast diffusion process across the states.[3]

To date, the majority of research on policy diffusion in the American states finds little evidence that states engage in free-rider dynamics (but, see Woods 2006). Instead, scholars generally find that once a state adopts a policy, the probability that another state will adopt is great (Gray 1973). In addition, diffusion is more likely to occur across neighboring states; for instance, as the number of neighbors that have adopted a policy increases so does the probability of adoption (e.g., Berry & Berry 1990). The positive influence of neighboring states is well

[3] Boushey (2010) explores how some policies are adopting very quickly across governments, calling into question whether any diffusion processes are involved.

documented in past research across a variety of different policy issues such that scholars assume that policy diffusion always creates positive feedback.

The overwhelming finding that strategic interaction among the American states results in competitive races and not free-rider dynamics is likely a result of scholars ignoring the conditional nature of diffusion dynamics. The diffusion of policies likely depends on the policies, themselves (Shipan and Volden 2012). To be fair, a few studies explore how policy characteristics influence the diffusion process. For instance, Makse and Volden (2011) find that complex policies spread more slowly compared to compatible policies. Nicholson-Crotty (2009) finds that the rate of diffusion increases as issue saliency increases. Here, however, scholars focus largely on how policy characteristics impact the social learning mechanism of diffusion instead of interstate competition. According to the social learning theory, diffusion is a process of social learning (Glick & Hays 1991; Gray 1973; Mooney & Lee 1995; Walker 1969). Political officials, in their search for answers to complex problems, engage in a form of "satisficing" (Simon 1955), where they wait and see how a policy works out before adopting it in their own state (Volden 2006). If policy diffusion is occurring due to social learning, then it makes sense to consider how policy characteristics, such as complexity, comparability or saliency, impact the social learning process. If, on the other hand, policy diffusion is occurring due to strategic interaction and interstate competition, then we need to focus on policy externalities, particularly given that positive externalities may create free-rider dynamics.

Additionally, I argue that because states are strategic, they are not only influenced by the policies that are enacted in neighboring states, but also by policies that are being *introduced* in neighboring states, especially if polices have negative externalities. If driven by strategic interaction, the mere threat of policy adoption in neighboring states may induce policy adoption

in the home state. For instance, State A is likely to adopt policies quickly to gain a competitive edge if neighboring states are considering similar policies with potentially negative externalities. If this is the case, then it is important to explore strategic interdependence in policy considerations as well as policy enactments.

The Interdependence of Tobacco Policy in the American States, 1990-2010

To test whether the externalities associated with policies impact the strategic interaction across the states, I use a unique dataset on bills that were introduced and enacted in state legislatures from 1990-2010 on tobacco legislation. While the public health and economic consequences of cigarette smoking are vast, federal activity has been quite limited compared to the regulation of other toxic substances. For instance, Congress continues to exempt tobacco products from the purview of the law (Warner 2006) and in 2000, the Supreme Court ruled that the FDA lacks jurisdiction to regulate tobacco products.[4] The federal government periodically issues Surgeon General Reports on the health consequences of tobacco; however, these reports aim mostly to inform the public about the dangers of tobacco as opposed to influencing federal activity.

As a result, state governments have considerable autonomy in developing public health policy in response to population health threats posed by tobacco. Even still, states have devoted varying attention to the *types* of policies to regulate tobacco. These policies include smoke free policies, cigarette or tobacco taxes, regulations on youth access to tobacco and sales to minors, and funding of tobacco prevention and cessation programs. Several states, most notably

[4] In 2009, however, President Obama signed The Family Smoking Prevention and Tobacco Control Act into law, which allows the FDA regulate what goes into tobacco products, make public the ingredients and prohibit marketing campaigns geared toward children.

California and Massachusetts, have comprehensive tobacco control policies aimed to alter community norms concerning smoking, and in the process, the smoking behavior of individuals (Warner 2006). In addition, some states have preempted localities from enacting more stringent regulations or have laws in effect that elevate smokers to a protected class. And, state tobacco policy garnered national attention in 1998 after the tobacco industry approved to a 46-state Master Settlement Agreement (MSA), totally a nearly $206 billion payout to states to be paid through the year 2025. States still have large discretion over how these funds are used and state allocation decisions are diverse with some states allocating moneys to areas other than tobacco control and health (Sloan et al. 2005).

Most important for this paper, tobacco bills may have either positive or negative externalities associated with them, depending on the policy content. As I explain below, tobacco bills dealing with cigarette taxes or the MSA are associated with negative externalities and should induce competitive races whereas bills dealing with regulation have positive externalities and should induce free rider dynamics. By looking at the policy content of tobacco bills, I am able to test for both free rider dynamics as well as competitive races using the same underlying policy of tobacco regulation.

Measuring Policy Differences in Tobacco Legislation

To test whether policy content influences the strategic interdependence among the American states, I use data collected by Pacheco and Boushey (2014) on the number of bills introduced in state legislatures related to tobacco from 1990-2010. [5] Employing bill

[5] As explained by Pacheco and Boushey (2014), they use the State Bill Tracking database on Lexis Nexis State Capital to gather bill introductions. The database is maintained by LexisNexis, a division of Reed Elsevier Inc. and is available at http://web.lexis-nexis.com. The database

introductions to assess legislative attention is common at the national level (e.g., Adler and Wilkerson 2010) as well as in the states (e.g., Baumgartner et al. 2009). A total of 20,671 bills related to tobacco were introduced across the fifty states from 1990-2010.[6] Of those bills, 1,568 (8%) were enacted into law. To be consistent across states with different legislative schedules, I divide the times series data into 11 legislative sessions: 1990, 1991-1992, 1993-1994, 1995-1996, 1997-1998, 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, and 2009-2010.[7]

To measure policy content, I employ supervised machine learning software, using human and automated coding to classify bill introductions (Collingwood and Wilkerson 2011) according to a major topic classification scheme. Tobacco bills are classified into eight major topics that capture the typology of policy alternatives considered within the realm of tobacco control (Smith et al. 2002). These categories include control, environment, agriculture, insurance, advocacy, litigation, finance, and miscellaneous.[8]

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contains bill synopses for each bill introduced by each state house in a calendar year. More details about data collection methods, including keywords used and intercoder reliability can be found in the Supplemental Text from Pacheco and Boushey (2014).

[6] Detailed descriptive information is available in Table S1 in the Supplemental Text from Pacheco and Boushey (2014).

[7] Five states (Kentucky, Louisiana, Mississippi, New Jersey, and Virginia) have legislative sessions on even years. Consequently, the 11 sessions are 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, and 2010.

[8] Intercoder reliability, as measured by Cohen's Kappa is .73 for the tobacco categories. Table S1 in the Supplemental Text in Pacheco and Boushey (2014) provides more details about the major

I focus on four specific types of policies including control, environment, finance, and litigation. To clarify, policies under the control topic category are bills that aim to control the consumption, access, and sale of tobacco products, once they are harvested, to the general population or age specific populations. Policies that fall under the control category include the sale of cigarettes to minors, the packaging of tobacco products (e.g., warning labels), and youth access laws. Policies under the environment category are measures that aim to protect nonsmokers from environmental smoke including clean indoor air acts that limit where people can smoke. The majority of bills that fall under the finance category deal specifically with cigarette taxes, but some also deal with the allocation of funding from the MSA or tax revenues. Finally, bills that are labeled as litigation include court cases against tobacco companies as well as the decision to participate in the MSA.

I focus on these four types of tobacco bills for two reasons. First, the majority of the tobacco bills fall into three of these categories: control, environment, and finance, although the dominant category varies across states and time. For instance, 48% of all the bills introduced in New York from 1990-2010 addressed controlling access to tobacco compared to only 15% in Montana. Meanwhile, 63% of the bills introduced in Wyoming from 1990-2010 concerned the financing of tobacco compared to only 16% in Massachusetts. Similarly, the number of bills introduced across all the states dealing with the hazards of environmental exposure to second hand smoke was high in the early 1990s, decreased in the early 2000s, and gradually rose to 24%

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subject categories for tobacco control. The Supplemental Text also provides detail on the software and computer assisted coding techniques used to download and categorize bills.

in 2009-2010. As expected, the number of bills introduced across all the states dealing with the financing of tobacco increased sharply in the years following the MSA.

The number of tobacco bills that are enacted is far fewer than the number of bills that are introduced across state legislative sessions from 1990-2010; only 8% of all tobacco bills that were introduced eventually got enacted. The majority of policy adoptions occurred in the control or finance categories. Overall, 35% of the tobacco bills that were enacted dealt with control while 38% dealt with finance. Only 5% of the bills enacted are in the litigation category while 15% are in the environment category. Mississippi, Colorado, and New York led the way with 45%, 43%, and 42% of their enacted tobacco bills dealing with control, respectively. On the other hand, the majority of tobacco bills enacted by Alabama fell into the finance category, while only 9% were classified in the control category. Rhode Island, Maine, and Massachusetts enacted the highest number of tobacco bills dealing with environmental smoke, while Missouri and North Carolina enacted the highest number of tobacco bills dealing with litigation. Descriptive data on all of these variables is included in the Appendix.

The second reason that I focus on these four types of tobacco policies is because they differ in their expected externalities. The expectation is that the two categories dealing with the regulation of cigarettes (e.g., the control category) and environmental smoke (e.g., the environment category) are associated with positive externalities and will induce free-rider dynamics. Similar to anti-pollution regulations, these types of laws create spillover effects that neighboring states benefit from without adopting similar policies. Take the regulation of the sale of cigarettes as an example. If State B adopts stringent rules regarding where and to whom cigarettes can be sold, this enhances the probability that State B residents will migrate to State A to purchase cigarettes. More specifically, the expectation is that *states will be less likely to*

introduce/enact bills associated with the control of tobacco or environmental smoke when neighboring states introduce/enact similar tobacco bills.

On the other hand, the other two categories dealing with cigarette taxes (e.g., the finance category) and the MSA (e.g., the litigation category) are associated with negative externalities. Take cigarette taxes as an example. State A stands to lose out on revenue garnered through cigarette taxes if State B raises taxes on cigarettes. The MSA has similar negative externalities; State A will lose out on financial damages paid by the tobacco corporations if it does not join in litigation against them with neighboring jurisdictions. Thus, the expectation is that *states will be more likely to introduce/enact bills associated with the finance of tobacco and litigation when neighboring states introduce/enact similar tobacco bills.*

Empirical Strategy

To evaluate the strategic interaction in the types of tobacco bills considered and enacted across the American states empirically, I estimate a dynamic spatial-lag model.[9] This approach has been used by others to study policy diffusion, primarily in fields outside of American politics, including Franzese and Hays (2006; 2007), Case et al. (1993), Redoano (2003), and Elkins and Simmons (2004), among others. The dependent variable is the number of bills that were introduced or enacted across the American states from 1990-2010 in each of the four policy types described above. The key independent variable that allows me to evaluate the existence

[9] Descriptive statistics suggest some degree of time dependence in the dependent variables. The correlation between current values and lagged values for bills introduced on control, environmental smoke, litigation, and finance are .80, .64, .47, and .54, respectively. The correlation between current values and lagged values for bills enacted on control, environmental smoke, litigation, and finance are .21, .30, .10, and .27, respectively.

and direction of strategic interaction (e.g., free rider dynamics versus competitive races) is the *spatial lag* of the dependent variable. I also include a number of control variables in the analyses, which I discuss below.

More precisely, the model I estimate is (see Franzese and Hays 2006)

$$Y_t = \emptyset Y_{t-1} + \rho W Y_t + X_t \beta + \varepsilon_t$$

Y_t is a N x 1 vector of tobacco bills (either introduced or enacted) in the N=48 states for each year, *t*.[10] ρ is the spatial autoregressive coefficient, which gauges the overall strength of interdependence. The expectation is that policies with positive externalities, e.g., control and environmental smoke bills, will have a ρ that is negative, indicating that states are engaging in free-riding. For these policies, the expectation is that states are less likely to introduce or enact tobacco bills after introduction or enactment in neighboring states. For tobacco bills with negative externalities, e.g., finance and litigation bills, the expectation is that ρ is positive, indicating that states are engaging in competitive races such that states are more likely to introduce or enact bills after similar activity in neighboring jurisdictions.

W is an N x N (48 x 48) *spatial weighting matrix,* with elements w_{ij} reflecting the relative degree of connection from state *j* to state *i*. WY_t is the *spatial lag*, which gives the weighted sum of the other states' tobacco bills for each state *i*, with the weights given by the relative connectivity from *j* to *i*. X_t is an N x K matrix of observations on K independent variables, including fixed state and session effects. β is a K x 1 vector of coefficients on those X, and ε is an N x 1 vector of residuals. I calculated WY_t using a standardized binary contiguity weights matrix, which begins by coding w_{ij} =1 for states *i* and *j* that share a border and w_{ij}=0 for states

[10] Alaska and Hawaii are deleted from the analyses since they do not have any values in the weight matrix.

that do not border. Then, I row-standardize the resulting matrix by dividing each cell in a row by that row's sum. This gives the unweighted average of the dependent variable in "neighboring" states. Using a standardized binary contiguity weights matrix is common for spatial models, for instance see Franzese and Hays (2006; 2008).

As Franzese and Hays (2005) explain, the most important issue methodologically in obtaining good estimates of the spatial interdependence is to properly model alternative mechanisms by which the outcomes might correlate spatially, such as common exogenous shocks (e.g., national policy activity) or correlated domestic factors (e.g., ideological similarity) (see also Franzese and Hays 2006 176). Failure to account for these factors results in a bias spatial-lag coefficient, with bias typically in a positive direction (Franzese and Hays 2004). As a result, all models reported below include state and session dummies. These variables also account for temporal dependence and unit and period heterogeneity.

Analyses: Strategic Interaction in the Introduction of Tobacco Bills

Table 1 presents the estimation results using the introduction of the four types of tobacco bills as dependent variables. The first models provide estimates for the base-line model, which includes a time-lag of the dependent variable plus state and session dummies. The coefficient of the spatial lag gives an estimate of the strength and direction of strategic interaction in the introduction of tobacco bills. The estimate of the spatial-lag coefficient is statistically significant for three of the categories, although the direction of the spatial effect varies.

For tobacco bills in the control category, the spatial-lag coefficient is statistically significantly negative, which implies that a one unit increase in the introduction of tobacco bills on control in neighboring states leads to an immediate .04 decrease in bill introduction in the home state, suggesting some degree of free-riding among American states. This is consistent

with the expectation that the positive externalities associated with tobacco bills aimed to control the consumption and access of cigarettes creates incentives for neighboring states to not introduce similar bills. On the other hand, the spatial-lag coefficients for both the environment and litigation categories are statistically significantly positive, which implies that a one unit increase in the introduction of these types of bills in neighboring states leads to an immediate increase in bill introductions in the home state, suggesting competitive races. The results for the environment category are against expectations, since these types of laws are associated with negative externalities. However, the results for the litigation category are consistent with expectations, since these types of laws are associated with positive externalities. Finally, results suggest that there is no strategic interaction among the states on the introduction of tobacco bills related to finance.

In the next set of models, I control for various internal state characteristics that may impact the introduction of tobacco bills. These include variables that tap into the political orientation of residents, such as state ideology and state partisanship, as measured by Pacheco (2011). In general, states with large numbers of liberals or Democrats are more likely to adopt health-related bills (e.g., Paul-Shaheen 1998; Kousser 2002). Second, I include a measure of democratic strength with the typical expectation that states under Democratic control will be more likely to introduce health-related bills. This variable is the sum of percentages of state house and senate that are Democrats plus 100 if the governor is a Democrat (Bailey & Rom 2004).[11] Problem severity also matters (e.g., Armstrong et al. 2006, Nice 1994). To control for

[11] An annual estimate was not available for the 2009-2010 session, so 2007-2008 estimates were included.

problem severity, I include a measure of the percentage of smokers in a state with the expectation that states with a high number of smokers will introduce more tobacco-related bills.

Pacheco and Boushey (2014) find that states are more likely to introduce tobacco-related bills when governors mention tobacco in their State of the State (SOS) address. To measure gubernatorial attention to tobacco, I code whether tobacco was mentioned in each year during the SOS. I then averaged the number of mentions per legislative session so that the variable ranges from 0 to 1. For example, a value of .5 on this measure indicates that the governor mentioned tobacco in one of the two years during a legislative session. Thirty-four percent of the governors mentioned tobacco in their SOS addresses across the states over the 11 legislative sessions. Finally, I account for differences in the capacity of state public health agencies by including a measure of the per capita health expenditures by state, taken from the US census survey of state governments. The expectation is that states that spend more on public health agencies will, by nature, by more likely to pay attention to tobacco and other emerging health issues. To ease statistical interpretation, all control variables are standardized and range from 0 to 1.

Results are shown in the second models in Table 1. As shown in Table 1, inferences regarding the spatial interaction among the states remain consistent even after control variables are included. This is unsurprising since many of the control variables fail to reach statistical significance. Exceptions include the positive impact of health expenditures on the introduction of control and environment bills and the positive impact of gubernatorial attention to tobacco on environment bills.

Analyses: Strategic Interaction in the Enactment of Tobacco Bills

Table 2 presents the estimation results using the enactment of the four types of tobacco bills as the dependent variable. As before, the first models provide estimates for the base-line

model, which includes a time-lag of the dependent variable plus state and session dummies. The estimated coefficient of the spatial lag gives an estimate of the strength and direction of strategic interaction in the enactment of various types of tobacco bills. The estimate of the spatial-lag coefficient is statistically significant for two of the categories of tobacco bills.

For tobacco bills in the environment category, the spatial-lag coefficient is statistically significantly negative, which implies that a one unit increase in the enactment of tobacco bills on environmental smoke in neighboring states leads to an immediate .03 decrease in bill enactment in the home state, suggesting some degree of free-riding among American states. This is consistent with the expectation that the positive externalities associated with tobacco bills aimed to regulate secondhand smoke creates incentives for neighboring states to not enact similar bills. Similarly, for tobacco bills in the litigation category, the spatial-lag coefficient is statistically significant and negative, which implies free-riding. This is against expectations since the externalities associated with the enactment of litigation bills are negative. The spatial-lag coefficients are not statistically significant with either the control or finance categories, suggesting that strategic interaction does not occur with the enactment of these types of bills.

The second models in Table 2 include various control variables, measured identically to the previous analyses. As before, inferences regarding the strength and direction of the spatial interdependence among the states are unchanged with the additional of control variables. There remains empirical evidence of free-riding in the enactment of tobacco bills related to environment and litigation. In addition, many of the control variables are not significantly related to the enactment of tobacco bills.

Conclusion

A large and growing literature in state politics research finds evidence of strategic interaction across the American states. Yet, this research has rested largely on two assumptions. First, there is an assumption that strategic interaction induces *competitive races* whereby policy adoption in one state increases the probability of adoption in another. As shown in this paper, strategic interaction need not always induce positive feedback. Using dynamic spatial models, I find evidence that states may also engage in *free-riding dynamics* if policies enacted in neighboring states have negative externalities, like those associated with the regulation of tobacco products. Such free-rider dynamics explain why states often solve collective action problems through intergovernmental compacts. According to the Council of State Governments, more than 200 interstate compacts across a variety of policy areas, including medical licensing, health care, resource management, education, energy and public safety, are active today (DeGolian 2014).

A second assumption is that strategic interaction occurs during the policy enactment stage. On the contrary, if states are strategic actors, then they are not only influenced by the policies that are enacted in neighboring states, but also by policies that are being *introduced* in neighboring states. As shown in this paper, there is empirical evidence that spatial independence occurs across the American states in both the policy adoption stage as well as the agenda-setting stage of bill introduction. Consequently, the early stages of agenda setting (e.g., Kingdon 1995) are crucial components of policy diffusion.

Even still, the results in this paper do not tell a consistent story regarding how policy externalities impact the diffusion process and strategic interaction. I find that certain policies induce free-riding dynamics or competitive races that are consistent with theoretical expectations. For instance, free-rider dynamics are present in the introduction of tobacco bills

dealing with control and the enactment of bills associated with environmental smoke. Competitive races are present in the introduction of bills associated with litigation that have negative externalities. On other hand, I find that states are *more* likely to introduce bills regarding the environment after neighboring polices introduce similar bills; and states are *less* likely to enact bills regarding litigation after neighboring policies enact similar bills. Both of these results go against expectations. Lastly, there is no empirical evidence that strategic interaction occurs in the realm of finance tobacco bills, which is surprising given that many of these bills deal directly with the increase of cigarette taxes.

Overall, the results underscore the need for scholars to dig deeper into how policy characteristics impact the strategic interaction in policymaking across the American states. To this end, scholars can benefit from constructing dependent variables that measure differences in *policy content*, as I have done in this paper. By exploring policy content, we gain insight about how policies evolve and expand as they spread (Glick and Hays 1991) as well as how the externalities of these policies impact the diffusion process. In doing so, we will only advance our knowledge about the nuances of strategic policymaking in the American states.

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Table 1 Dynamic Spatial-Lag Model Predicting the Introduction of Types of Tobacco Bills, 1990-2010

	Control				Environment				Litigation				Finance			
	M1		M2		M1		M2		M1		M2		M1		M2	
Spatial Lag	-.04	**	-.04	***	.04	***	.04	***	.03	**	.03	***	.02		.02	
	(.01)		(.01)		(.01)		(.01)		(.01)		(.01)		(.01)		(.01)	
Temporal Lag	5.51	***	5.43	***	1.01	***	3.95	***	1.33	***	1.33	***	6.73	***	6.73	***
	(.17)		(.17)		(.12)		(.12)		(.04)		(.04)		(.21)		(.21)	
Percent Democrat			3.48				4.16				1.27				6.95	
			(3.89)				(2.84)				(.96)				(4.83)	
Percent Liberal			-4.28				2.35				-1.05				-2.16	
			(3.00)				(2.18)				(.74)				(3.73)	
Percent Smokers			.75				-2.03				-1.00				-1.43	
			(5.30)				(3.85)				(1.30)				(6.57)	
Democratic Strength			-.60				1.63				-.54				2.06	
			(1.89)				(1.38)				(.467)				(2.35)	
Governor Mention of Tobacco			.83				1.19	***			.23				1.24	
			(.62)				(.45)				(.15)				(.77)	
Health Expenditures			13.88	***			3.95	*			.91				-4.26	
			(3.26)				(2.37)				(.80)				(4.04)	
Constant	.10		-1.78		2.52		1.085		-.32		0.11		9.69		7.211	
	(1.93)		(5.24)		(1.37)		(3.79)		(.45)		(1.28)		(2.33)		(6.47)	
N	521		509		521		509		521		509		521		509	
Log Likelihood	-1629.70		-1584.46		-1463.57		-1422.62		-889.89		-869.87		-1733.18		-1693.01	

Note: All regressions include fixed period and unit effects; those coefficient estimates are suppressed to conserve space. All the spatial weights matrices are row standardized. All control variables are standardized and range from 0 to 1.
***Significant at the .01 level; ** at the .05 level; * at the .10 level with a two-tailed test.

Table 2 Dynamic Spatial-Lag Model Predicting the Enactment of Types of Tobacco Bills, 1990-2010

	Control				Environment				Litigation				Finance			
	M1		M2		M1		M2		M1		M2		M1		M2	
Spatial Lag	-.01		-.004		-.03	**	-.03	*	-.03	*	-.03	*	.01		.01	
	(.01)		(.01)		(.02)		(.02)		(.01)		(.01)		(.01)		(.01)	
Temporal Lag	.90	***	.90	***	.64	***	.63	***	.25	***	.26	***	1.10	***	1.10	***
	(.03)		(.03)		(.02)		(.02)		(.01)		(.001)		(.03)		(.03)	
Percent Democrat			.88				-1.05	**			-.21				.76	
			(.64)				(.45)				(.18)				(.79)	
Percent Liberal			-.91	*			.41				.13				-.42	
			(.50)				(.34)				(.14)				(.61)	
Percent Smokers			.04				1.53	**			-.24				-2.06	*
			(.88)				(.61)				(.25)				(1.07)	
Democratic Strength			-.048				-.15				-.101				-.09	
			(.31)				(.22)				(.089)				(.39)	
Governor Mention of Tobacco			.06				-.03				.01				.34	***
			(.10)				(.07)				(.03)				(.13)	
Health Expenditures			-.78				.64	*			-.03				-.05	
			(.54)				(.38)				(.15)				(.66)	
Constant	.02		-.10		-.05		-.66		.07		.33		2.65		3.99	
	(.30)		(.86)		(.21)		(.60)		(.08)		(.24)		(.37)		(1.05)	
N	528		511		528		511		528		511		528		511	
Log Likelihood	-694.04		-670.67		-511.52		-486.58		-25.51		-30.46		-803.43		-774.64	

Note: All regressions include fixed period and unit effects; those coefficient estimates are suppressed to conserve space. All the spatial weights matrices are row standardized. All control variables are standardized and range from 0 to 1.
***Significant at the .01 level; ** at the .05 level; * at the .10 level with a two-tailed test.