Presidential Prescriptions for State Policy: Obama's Race to the Top Initiative

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Abstract

With increasing frequency, U.S. presidents have orchestrated relations between federal and state governments. A defining feature of this "executive federalism" is a pragmatic willingness to both borrow from and reconstitute very different types of past federalisms. A case in point is President Barack Obama's Race to the Top (RttT) initiative, which sought to stimulate the adoption of specific education reforms in state governments around the country through a series of highly prescriptive but entirely voluntary policy competitions. This paper evaluates the results of such efforts. To do so, it draws on four original data sets: a nationally representative survey of state legislators, an analysis of State of the State speeches, another of state applications to the competitions themselves, and finally, an inventory of state policymaking trends in a range of education policies that were awarded under the competition. This paper then relies upon a variety of identification strategies to gauge the influence of RttT on the nation's education policy landscape. Taken as a whole the evidence suggests that RttT, through both direct and indirect means, augmented the production of state policies that were central components of the president's education agenda. © 2017 by the Association for Public Policy Analysis and Management.

INTRODUCTION

Confronting a gridlocked Congress, and lacking the requisite authority needed to exercise their unilateral powers, President Barack Obama and his Education Secretary Arne Duncan shifted their attention to the states. Instead of updating the existing No Child Left Behind Act, which was overdue for reauthorization, Obama and Duncan sought to encourage state governments to adopt elements of their education agenda. They settled upon a series of policy competitions collectively known as Race to the Top (RttT), which would prove to be among the most ambitious and creative enterprises in the modern history of U.S. federalism.

Under RttT, state applicants competed for federal funds on the basis of their demonstrated willingness to adopt education policies. And because it was designed and implemented within the Department of Education (DOE), RttT fit squarely within the register of what Gais and Fossett (2005) call "executive federalism," an emergent set of political relationships that implicate "the strategic exercise of executive powers to promote major changes in state policies" (p. 507). It did so, moreover, by selectively borrowing features of at least two past waves of U.S. federalism: one promulgated by liberals in the 1960s, and the other by conservatives in the 1980s (Nathan, 1996, 2006; Peterson, 1995). Like the U.S. federalism during the John F.

Kennedy and Lyndon Johnson administrations, RttT retained a very clear sense for the specific kinds of policies that state and local governments ought to enact; unlike this kind of federalism, however, RttT eschewed legislative penalties and fixed financial inducements, preferring instead to "borrow strength," in Paul Manna's (2006) terminology, from outside the federal government in order to promote policies that could not be advanced within it. Like the U.S. federalism during the Ronald Reagan and George H.W. Bush administrations, meanwhile, RttT depended heavily on the voluntary participation of state governments; but unlike this type of federalism, RttT offered very little leeway in the choice of policies that states could adopt if they hoped to actually win.

This paper evaluates the results of Obama and Duncan's efforts. In doing so, it does not assess the efficacy of the particular policies promoted by RttT, as others have done (see, for example, Dieterle et al., 2015; Hemelt & Marcotte, 2013). Nor does this paper investigate how RttT altered practices within schools or districts around the country, a limitation about which more will be said in the conclusion. Rather, the core of this paper focuses on the politics of the education policymaking process itself, and it treats the adoption of education policies themselves as the relevant outcome of interest. To do so, it draws on four original data sets: a nationally representative survey of state legislators, an analysis of State of the State speeches, another of state applications to the competitions themselves, and finally, an inventory of state legislative trends in a range of education policies that were awarded under the competition. The paper then employs a variety of identification strategies to gauge the influence of RttT on the nation's education policy landscape.

A battery of fixed effects and matching models suggests that RttT had a meaningful impact on the production of education policy. When scoring RttT applications, the federal DOE rewarded states on both their past policy achievements and their expressed commitments to enact new policies. We do not find any evidence that RttT meaningfully altered the volume or content of gubernatorial speeches about education policy. In the aftermath of RttT, however, states that participated in the competitions were especially likely to adopt RttT policies, particularly those on which they made explicit policy commitments in their RttT applications. These patterns of policy adoptions, moreover, were confirmed by a nationally representative sample of state legislators who were asked to assess the impact of RttT on education policymaking in their respective states.

Differences in the policy actions of winning, losing, and nonapplying states, however, do not adequately characterize the depth or breadth of the president's influence. In the aftermath of RttT, all states experienced a marked surge in the adoption of education policies. And legislators from all states reported that RttT affected policy deliberations within their states. Part of the explanation for this general increase in policymaking activity has to do with the structure of the competition itself: uncertain about what it would take to win federal funds, all participating states devoted substantial energies to adopting policy reforms that they thought would increase their chances in each round of the competition. But policy diffusion, a phenomenon about which a great deal has been written (for reviews, see Karch, 2007; Shipan & Volden, 2012), also appears responsible for RttT's expansive influence. Throughout the time period under investigation, patterns of policy adoptions correlated closely among geographically proximate and demographically similar states, which constitute two of the most prominent channels of policy diffusion noted in the existing literature (Desmarais, Harden, & Boehmke, 2015). In this way, we show, RttT leveraged the forces of both vertical and horizontal policy diffusion in order to stimulate legislative activity across the country.

This paper proceeds as follows. The first section situates RttT in the relevant scholarly literatures on federalism and grantmaking, while the second section provides details about its design and execution. The third section presents evidence that

RttT rewarded state applicants on the basis of both their past policy achievements and their future policy commitments. The fourth presents and analyzes new survey data of state legislators and text analyses of gubernatorial speeches, while the fifth relates patterns in state policy adoptions to the design and implementation of RttT. The final section concludes the article.

THE CHANGING FACES OF U.S. FEDERALISM

In studies of U.S. federalism, Congress has historically been the representative face of the federal government. Legions of scholars have investigated the statutory requirements and legislative oversight mechanisms that encourage state governments to pursue policies that broadly comport with its members' underlying interests (see, for example, Huber & Shipan, 2002, chapter 5; Derthick, 1970; Smith, 1968; Wood, 1991). Going back at least to Key (1937), scholars have examined the ways in which the federal government structures grants and loans in order to stimulate the production of state and local policies that address specific problems (Cascio et al., 2010; Hale & Palley, 1981; Knight, 2002; Nathan, 1983; Peterson, Rabe, & Wong, 1986; Volden, 1999)—a practice that, since the 1958 National Defense Education Act, has supported education policies ranging from school construction to curricular reforms in math and science.

According to a number of scholars, however, the president's role in U.S. federalism is demonstrably ascendant. As Gais and Fossett (2005) observe, presidents have "become a primary locus for producing major changes in domestic policy" (p. 487). Likewise, Mehta and Teles (2011) call attention to a kind of "jurisdictional competition" in which "the government generally, [and] the president in particular, can empower an alternative governing coalition" and "leverage decentralized political action by actors sympathetic to its aims" (p. 198). In both of these schema, recent presidents have attempted to advance policies at the state level that cannot find traction within Congress. And given the rising polarization of the two major parties within Congress, presidents increasingly have turned their attention to the states.

Just as the president has played an increasingly prominent role in U.S. federalism, so too have the kinds of negotiations that occur between the federal and state governments evolved over time. Historians of U.S. federalism have documented pronounced changes in the federal government's relationship with the states (Conlan, 1998; Nathan, 1996, 2006; Peterson, 1980, 1995). While not fitting neatly within any one tradition, RttT borrows elements from at least two: the top-down federalism characteristic of the 1960s as well as the "devolution revolution" that followed.

As part of his Great Society programs, Lyndon Johnson and fellow Democrats in Congress sought to impose a whole host of welfare and antidiscrimination initiatives—from Head Start to Community Action Programs to educational aid to disadvantaged populations—upon states and localities that would just as soon avoid the meddling influence of an imperious federal government. Through targeted disbursements and punitive oversight mechanisms, Johnson wanted states to adopt policies that looked a good deal different from what they would have otherwise enacted on their own. The objective, as such, was "not to support traditional state and local functions but to change their priorities in favor of goals supported by national legislative coalitions" (Gais & Fossett, 2005, p. 493).

When Nixon assumed office in 1969, however, the orientation of federal and state governments shifted rather markedly. In addition to reducing the volume of federal programming, a new brand of federalism heralded by a string of Republican presidents sought to devolve decisionmaking and with it discretion back to the states. Through a variety of block grants and flexible regulatory enforcement mechanisms, states were allowed to devise policy solutions to a variety of social ailments.

Under this federalism, the federal government provided funds and lent administrative support to states bent on pursuing their own policy objectives on their own terms.

Obama's RttT represents a novel amalgamation of both these forms of federalism. Harkening back to the 1960s, RttT reaffirmed the interventionist and prescriptive tendencies of an older federalism. RttT decidedly did not support state governments in their independent efforts to solve education problems as they saw fit. Rather, it held out the possibility of receiving financial aid for adopting specific policies that the DOE—and with it, the president—supported. Like the newer federalism, however, RttT depended heavily on the voluntary cooperation of states. If states opted not to participate in the competition, they suffered no penalty. To win federal funding, states only needed to demonstrate their willingness to adopt policies that conformed to the president's education agenda.

As RttT was spearheaded by the president rather than Congress, and drew from multiple traditions of U.S. federalism, it is difficult to anticipate its likely effects on state policymaking. To be sure, a substantial body of work already demonstrates that congressional activities short of the actual adoption of federal legislation can nonetheless stimulate state policy activity (Baumgartner, Gray, & Lowery, 2009; Karch, 2012; McCann, Shipan, & Volden, 2015). Existing work also rather convincingly shows that presidents, too, can elicit policy reforms from state governments (Allen, Pettus, & Haider-Markel, 2004; Nicholson-Crotty, 2009; Welch & Thompson, 1980). None of this scholarship, however, studies a federal competition akin to RttT. And the primary reason is that RttT's blend of highly prescriptive policy requirements embedded within an entirely voluntary competition among states is altogether new to the federalism landscape. Based on the existing literature, we have little way of knowing whether RttT stimulated any state policy activity, and certainly not of assessing just how broad, deep, or enduring this activity proved to be.

A DESCRIPTION OF THE POLICY INTERVENTION

Congress funded RttT through the American Recovery and Reinvestment Act (ARRA). Signed into law on February 17, 2009, the ARRA contained $787 billion in tax cuts and economic stimulus spending. Roughly $100 billion of the ARRA was allocated for education, of which $53.6 billion went into the State Fiscal Stabilization Fund (SFSF).[1] Within SFSF, however, $5 billion was set aside for a competitive grant system, $4.35 billion of which established RttT.

Under ARRA, states were required to pass at least 50 percent of the funding received under the RttT competitions to local education agencies. Otherwise, however, the DOE retained considerable discretion over the design and operation of the competition. Within a handful of broad educational priorities, the Obama administration chose which specific policies would be rewarded under the RttT competitions, and by how much; how many states would receive financial rewards, and by what amount; and what kinds of oversight mechanisms would be used to ensure compliance. Subsequent to the ARRA's enactment, Congress did not issue any binding requirements for the design or administration of the RttT competitions. From an operational standpoint, RttT was nearly entirely the handiwork of the DOE.

[1] Nearly all of these latter funds were used to avoid mass layoffs of teachers as a result of the economic downturn. To qualify for these funds, state governors agreed to implement a series of reforms related to college and career-readiness standards, longitudinal data systems, and high-quality assessments. More information available at: http://www2.ed.gov/policy/gen/leg/recovery/factsheet/stabilization-fund.html, retrieved January 15, 2017.

Table 1. Policy categories and point allocations in RttT.

(1) *State success factors*: Articulating State's education reform agenda and LEA participation; building strong statewide capacity to implement, scale up, and sustain proposed claims; demonstrating significant progress in raising achievement and closing gaps; advancing standards and assessments (125 points).

(2) *Standards and assessments*: Developing and adopting common core standards; developing and implementing common, high-quality assessments; supporting the transition to enhanced standards and high-quality assessments (70 points).

(3) *Data systems to support instruction*: Fully implementing a statewide longitudinal data system; accessing and using state data; using data to improve instruction (47 points).

(4) *Great teachers and leaders*: Providing high-quality pathways for aspiring teachers and principals; improving teacher and principal effectiveness based on performance; ensuring equitable distribution of effective teachers and principals; improving the effectiveness of teacher and principal preparation programs; providing effective support to teachers and principals (138 points).

(5) *Turning around the lowest-achieving schools*: Intervening in the lowest achieving schools and LEAs; turning around the lowest achieving schools; demonstrating other significant reform conditions (50 points).

(6) *General*: Making education funding a priority; ensuring successful conditions for high-performing charter schools and other innovative schools (55 points).

[*]*Competitive Preference Priority 2*: Offering a rigorous course of study in mathematics, sciences, technology, and engineering (STEM); cooperating with industry experts, museums, universities, and other STEM-capable community partners to provide support to educators in integrating STEM content; providing applied student learning opportunities with particular emphasis on underrepresented groups and girls/women (15 points).

One month after the ARRA was signed into law, the DOE released a general notice about the competitions and their policy goals. On July 29, 2009, the Obama administration formally announced the RttT competitions and invited public comment. Later that year, on November 18, 2009, the DOE published an official notice in the Federal Register inviting Phase 1 applications and detailing timelines, requirements, and definitions for both Phase 1 and Phase 2 of the competition. Although informed of all deadlines in this official notice, states were not invited to participate in Phase 2 until April 14, 2010.

In both Phase 1 and Phase 2 of the competitions, states were asked to describe both their current policies and their plans to enact future ones within six different categories: "success factors" supporting the adoption and implementation of policy reforms, standards and assessments, data systems to support instruction, teacher preparation and evaluations, support for low-achieving schools, funding, and a competitive preference category that awarded extra points to states that are focused on STEM education. Table 1 describes the categories in greater detail and lists the maximum number of points awarded within each category. As is plain, the competition did not reward policy achievements across these categories equally. Although the DOE rewarded more than half of all possible points according to state success factors and support for teachers, it allotted only three percent on the basis of state STEM programs.

To assist states in writing their applications, the DOE offered technical assistance planning workshops, webinars, and training materials. Additionally, nonprofit organizations such as the National Council on Teacher Quality published reports intended to help states maximize their likelihood of winning. Nonetheless, substantial uncertainty shrouded some of the most basic components of the RttT competition including exact grading procedures, number of possible winners, total allocated prize amount per winning state, and the prize allocation mechanism and timeline.

Table 2. Race to the Top winners, losers, and nonapplicants by phase.

Phase 1		Phase 2	
Deadline: January 19, 2010		Deadline: June 1, 2010	
Winning States			
Delaware	Tennessee	DC	Massachusetts
Award: $120 million	Award: $500 million	Award: $75 million	Award: $250 million
		Florida	New York
		Award: $700 million	Award: $700 million
		Georgia	North Carolina
		Award: $400 million	Award: $400 million
		Hawaii	Ohio
		Award: $75 million	Award: $400 million
		Maryland	Rhode Island
		Award: $250 million	Award: $75 million
States that Applied but Lost (*Finalists)			
Alabama	Missouri	Alabama	Missouri
Arizona	Nebraska	Arizona*	Montana
Arkansas	New Hampshire	Arkansas	Nebraska
California	New Jersey	California*	Nevada
Colorado*	New Mexico	Colorado*	New Hampshire
Connecticut	New York*	Connecticut	New Jersey*
DC*	North Carolina*	Illinois*	New Mexico
Florida*	Ohio*	Iowa	Oklahoma
Georgia*	Oklahoma	Kentucky*	Pennsylvania*
Hawaii	Oregon	Louisiana*	South Carolina*
Idaho	Pennsylvania*	Maine	Utah
Illinois*	Rhode Island*	Michigan	Washington
Indiana	South Carolina*	Mississippi	Wisconsin
Iowa	South Dakota		
Kansas	Utah		
Kentucky*	Virginia		
Louisiana*	West Virginia		
Massachusetts*	Wisconsin		
Michigan	Wyoming		
Minnesota			
States that did not apply			
Alaska	Nevada	Alaska	South Dakota
Maine	North Dakota	Idaho	Texas
Maryland	Texas	Kansas	Vermont
Mississippi	Vermont	Minnesota	Virginia
Montana	Washington	North Dakota	West Virginia
		Oregon	Wyoming

Notes: List of states that did not apply does not include winners in previous rounds. RttT also included a Phase 3, the deadlines for which were November 22, 2011 and December 16, 2011. This phase was by invitation only, and all states that applied won, including: Arizona ($25 million), Colorado ($18 million), Illinois ($43 million), Kentucky ($17 million), Louisiana ($17 million), New Jersey ($38 million), and Pennsylvania ($31 million). Two states—California and South Carolina—were invited but did not apply. Four states did not apply in any round: Alaska, North Dakota, Texas, and Vermont.

Table 2 shows the breakdown of RttT winners, finalists, applicants, and non-applicants in each round of the competition. Phase 1 applications were due on January 19, 2010, and 40 states and the District of Columbia applied. Finalists were announced on March 4, 2010, and the two official winners were declared on March 29, 2010. Phase 1 winners Tennessee and Delaware were, respectively, awarded

roughly $500 million and $120 million, which that year amounted to 10.0 and 5.7 percent of the two respective states' budgets for K-12 education.[2] Phase 2 applications were due shortly thereafter, on June 1, 2010. The application criteria were the same for Phase 2, although Phase 1 winners could not apply and other states could resubmit amended applications. A total of 35 states and the District of Columbia participated in Phase 2. Finalists and winners were announced on July 27, 2010 and August 24, 2010, respectively. Phase 2 had a total of 10 winners, each awarded prizes of between $75 million to $700 million.[3]

Having exhausted the ARRA funds, the president in 2011 sought additional support for RttT. That spring, Congress allotted funds to support a third phase. In three important ways, Phase 3 differed from previous rounds. First, only losing finalists from Phase 2 of the competition were allowed to participate. Second, the policy scope of Phase 3 was significantly smaller, as each competing state needed only to reconfirm their commitments to a subset of reforms they had made in their Phase 2 applications. And finally, a significantly higher percentage of participating states won in Phase 3 of the competition, although the amounts of these grants were considerably smaller than those from Phases 1 and 2. On December 23, 2011, the DOE announced the seven Phase 3 winners, which received prizes ranging from $17.1 million to $42.8 million.[4]

Note that structural features of these competitions were explicitly designed to encourage broad policy change across the country. To receive their funding, winning states would have to follow through on their policy commitments outlined in their applications to the DOE. The effects of RttT, however, may go further still, as states that applied but eventually lost also had reason to adopt RttT policies. The staggered nature of the competitions and the considerable uncertainty that surrounded them encouraged all participating states to adopt RttT policies, if only to enhance their competitiveness in subsequent rounds. Moreover, the national media attention given to the specific policy reforms under RttT established a basis for unleashing the kinds of political forces that propel policy diffusion. In this sense, and as we discuss further below, a federal intervention of the sort commonly associated with vertical policy diffusion served as the impetus for subsequent horizontal policy diffusion across the states.

From the very outset, the president himself trumpeted the possibility of such wide-ranging policy change. As he noted in his July 2009 speech announcing RttT, Obama intended to "incentivize excellence and spur reform and launch a race to the top in America's public schools."[5] At the same press conference, Secretary Duncan called the initiative "a once-in-a-lifetime opportunity for the federal government to create incentives for far-reaching improvement in our nation's schools," "the equivalent of education reform's moon shot," and "a new federal partnership in education reform with states, districts, and unions to accelerate reform."[6] Media coverage echoed

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[2] Prize packages were based primarily on the share of a state's population of children ages 5 through 17. In this and subsequent Phases, winning states could immediately withdraw up to 12.5 percent of the overall award. Their subsequent ability to draw down funds depended upon their ability to meet the specific goals and timelines outlined in this scope of work.

[3] For empirical investigations into who applied and who won the RttT competitions, see Manna and Ryan (2011) and McGuinn (2010). For a General Accounting Office report on the subject, see: http://www.gao.gov/new.items/d11658.pdf, retrieved January 15, 2017.

[4] Although they will not be analyzed in this paper, Congress subsequently approved funding for still more competitions that focused on early childhood learning and policy adoptions within districts.

[5] Retrieved January 15, 2017, from https://obamawhitehouse.archives.gov/blog/2009/07/24/president-race-top.

[6] Retrieved January 15, 2017, from https://www2.ed.gov/news/speeches/2009/07/07242009.html. Later, in remarks announcing the finalists of the first phase of the competition, Duncan claimed that RttT was part

such sentiments, with the *Christian Science Monitor* calling the announcement of RttT a "massive incentive for school reform,"[7] and the *New York Times* subsequently arguing that participating states "would never have attempted reform on this scale without the promise of federal help."[8]

Wanting policy change, however, is not the same as achieving it. And for a variety of reasons, RttT may not have delivered on the president's promises.[9] Obama was intervening into a policy space that already was crowded with interest groups, governing boards, and political actors. To satisfy some steep policy demands, states stood to win grants that totaled only a small fraction of their annual education budgets. Although conducted in multiple phases, RttT did not become a permanent feature of the education landscape, which may have further compromised the DOE's ability to influence state-level policymaking. Rather than creating incentives for states to adopt new policies, RttT may have only rewarded states on the basis of past legislative achievements. The actual impact of RttT, therefore, remains very much an open question.

SCORING PAST ACHIEVEMENTS AND PROMISES OF FUTURE ACTION

In its public rhetoric, the Obama administration certainly emphasized its intention to use RttT to stimulate new education policy activity. But in the actual competitions, did the DOE reward states on the basis of past policy achievements or commitments for future policy actions? To investigate the matter, we identified policy initiatives that clearly fit the various criteria laid out under RttT. In some sections of the applications, a single such policy emerged. For example, in section D(2)(i), states were graded on the basis of their support for policies to measure student growth for each individual student. This specific policy, therefore, we tracked. Other sections of the grant applications assessed states' willingness to enact multiple related policies. For example, in section D(2)(iv), states were graded on the basis of five specific policy measures that related to alternative routes to teacher and principal certification. For tracking purposes, therefore, this section was broken into five distinct variables.[10]

For a variety of reasons, policies identified in some sections of the applications were excluded from the analysis. Policies that could be implemented without being codified into state law were systematically excluded, as were policies that were excessively vague or that lacked any variation across states. We also did not evaluate the extent to which either past policy achievements or future policy commitments translated into actual changes in schools or classrooms. States received credit exclusively on the basis of their documented claims about policy adoption, the implications of which are discussed at further length in this paper's conclusion.

Applying our selection criteria, we ultimately isolated 30 distinct policies that covered such topics as charter schools, data management, intervention into

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of a "quiet revolution" in education reform and that the competition had "unleashed an avalanche of pent-up education reform activity at the state and local level." See: https://www.ed.gov/news/speeches/quiet-revolution-secretary-arne-duncans-remarks-national-press-club, retrieved January 15, 2017.

[7] Gail Chaddock, "Obama's $4 Billion Is Massive Incentive for School Reform." *Christian Science Monitor*. July 24, 2009.

[8] Editorial. "Continue the Race." *New York Times*. August 28, 2010.

[9] Early reports, though limited in their ability to advance causal claims, suggested that RttT may have met with only modest success. See, for example, the October 2011 report by the National Council on Teacher Quality, which is available at: http://www.nctq.org/p/publications/docs/nctq_stateOfTheStates.pdf, retrieved January 15, 2017.

[10] Many of the policies that we tracked contained multiple elements. To receive credit for having either already enacted the policy or for promising to do so, we required that states meet the complete list of stipulated obligations. We did not assign partial credit for states that either already enacted or promised to enact selected elements of a policy initiative.
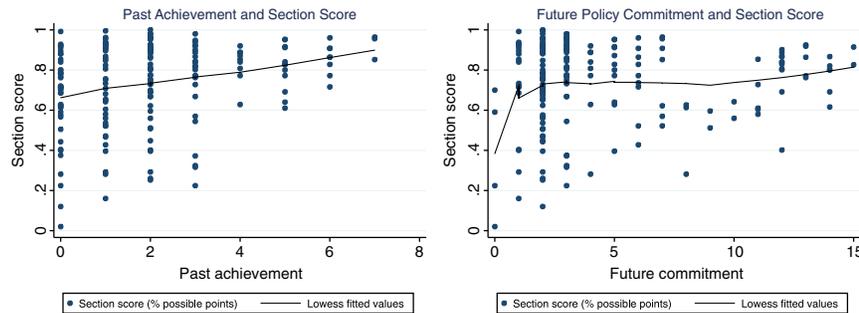
Notes: Dots represent state-by-section observations from the latest phase of 1 or 2 in which a state applied for RttT for all applicants (winners and losers). Included sections are A, C, D, E, and F. For both panels, the *y*-axis represents the section score that applications received as a proportion of possible points they could earn on that section. On the left panel, the *x*-axis identifies the number of past achievements of coded RttT policies within the relevant section. On the right panel, the *x*-axis identifies the number of future commitments of coded RttT policies within the relevant section.

Figure 1. Section Scores by Prior Achievement and Future Commitment.

low performing schools, and the use of test scores for school personnel policy.[11] Having selected the relevant education policies, we then assessed whether each state in its written application claimed to have already made significant advancement, promised to do so in the future, or a combination of both. So doing, we deliberately avoided any value judgment calls about whether the policies yielded their intended outcomes. Though RttT application guidelines periodically recognized the importance of "efficient" or "effective" state policies, they did not stipulate hard and fast rules for how such policies might be evaluated. Lacking clear indicators of what such qualifiers meant, therefore, we disregarded them. Instead, we focused on the substantive content of the policies themselves, and we then tracked whether each state applicant claimed to have enacted such a policy or expressed its clear intention to do so.

In Figure 1, we plot the number of points that the DOE rewarded states for the relevant section of their application against past policy achievements (in the left panel) and future policy promises (in the right panel). In both instances, a positive correlation is observed. States that claimed to have already enacted policies as well as states that expressed their clear intention to do so received systematically higher scores on the relevant subsections of their applications. In the former instance, the relationship is nearly linear across the entire distribution, whereas in the latter instance, the relationship increases sharply at the low end of the distribution and then more slowly thereafter. Regardless of whether we aggregate the scores at the relevant subsection level or over the entire application, whether we pool across different phases of the competition or examine them separately, and whether we estimate the relationships separately or jointly, we find a strong and statistically significant relationship between past policy achievement and a state's performance in the RttT application. Future policy promises, meanwhile,

[11] A complete list of policies and their descriptions is included in Appendix A. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

Table 3. Assessments of RttT influence by state legislators.

	All states (%)	RttT winning states (%)	RttT applicants (%)	RttT nonapplicants (%)
Massive influence	5.69	8.51	4.92	4.35
Big influence	26.24	52.13	20.08	8.70
Minor influence	49.01	37.23	53.79	45.65
No influence at all	19.06	2.13	21.21	41.30
Total	100.00	100.00	100.00	100.00
Number of respondents	404	94	264	46

Notes: This table reports responses from an online survey conducted in the spring of 2014 in which state legislators were asked the following question: "In an effort to encourage state governments to pass elements of his education agenda, President Obama in 2010 launched a series of competitions known as Race to the Top. In these competitions, states had a chance of winning federal monies in exchange for their commitments to enact a series of specific education policies that were supported by the federal Department of Education. We're wondering what impact, if any, these initiatives have had on education policymaking in your state. Have they had a massive impact, a big impact, a minor impact, or no impact at all?" A two-tailed *t*-test finds the responses of each paired combination of winners, losers, and nonapplicants to be statistically significantly different from one another at the $P < 0.01$ level.

have a statistically significant effect on application scores in some but not all specifications.[12]

DOCUMENTING THE VIEWS OF STATE POLICYMAKERS

In our assessment of RttT, we start by considering the views of those individuals who were primarily responsible for drafting and enacting education reforms across the nation: state legislators and governors. To the former, we fielded a survey that contained questions explicitly about RttT; and for the latter, we scrutinized gubernatorial speeches for mentions of RttT policies. In the main, these data suggest that while RttT did not introduce altogether new policies to the education landscape, the competitions did alter state evaluations of them.

State Legislators' Assessments

Embedded in a nationally representative survey of state legislators conducted in the spring of 2014,[13] we asked state legislators to reflect on the importance of RttT for the education policy deliberations within their states. Table 3 summarizes state legislators' responses. As can be seen in the first column, roughly one-third of legislators reported that RttT had either a "massive" or "big" impact on education policymaking in their state. Another 49 percent reported that it had a "minor" impact, whereas 19 percent claimed that it had no impact at all.

Columns 2 to 4 disaggregate the responses for legislators from states that won one of the three RttT competitions, states that applied but never won, and states that never applied, respectively. Two features of these responses warrant attention. First, state legislators' assessments corresponded quite closely with their experiences in RttT. Winners were fully 36 percentage points more likely to say that RttT had a

[12] More details available in Appendix Table B1. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[13] For details on how the survey was conducted see Butler & Porter (2014).

massive or big impact than losers, who, in turn, were 12 percentage points more likely than legislators who never applied to say as much (all differences are statistically significant at the $P < 0.01$ level). If these reports are to be believed, RttT did not merely reward winning states for their independent policy achievements. Rather, RttT meaningfully influenced education policymaking within their states.

The second point relates to the depth of RttT's influence. Even legislators from nonapplying states did not say that RttT was entirely irrelevant for their education policymaking deliberations. Indeed, a majority of legislators from states who never applied, nonetheless, reported that RttT had some influence over policymaking within their states. Although with varying dosages, all states appear to have been "treated" by this policy intervention, a possibility we revisit in the penultimate section of this paper.

Gubernatorial Speeches

In addition to surveying state legislators about their assessments of RttT's influence, we also canvassed the political speeches of governors. To gauge the prominence of RttT policies in state governments around the country, we read and coded all State of the State speeches for every state and the District of Columbia over a 12-year period, from 2001 to 2013.[14] Unlike the applications and legislative achievements, which we discuss below, when coding the State of the State speeches we focused on the larger policy objectives of the RttT contest. We therefore calculated the percentage of each speech devoted to different categories of RttT policies. Additional information about the coding of these speeches is available in Appendix C.[15]

Figure 2 documents the general trends in the proportion of State of the State speeches devoted to RttT policies. The top two panels plot the number of words in each speech devoted to RttT as a proportion of the total word count of the speech, averaged over states over the period from 2001 to 2013. The top left panel aggregates across all states, while the top right panel examines winning, losing, and nonapplying states separately.

The roll out of RttT competitions appears unrelated to the total volume of attention given to RttT policies in gubernatorial speeches. RttT certainly cannot claim to have introduced specific policies to public deliberations over education. Throughout the period, as the top left panel shows, roughly 5 percent of State of the State speeches concerned RttT policies. To the extent that differences are observed over time, mentions of RttT policies actually declined in number and length after the first two competitions. As the top right panel shows, meanwhile, winning states do not obviously distinguish themselves by the volume of mentions of RttT policies in their gubernatorial speeches. In the mid-2000s, the governors of states that would go on to win the competition did devote more space in their speeches to RttT policies. In the years immediately preceding RttT, however, governors in such states devoted less attention to RttT policies than did states that either would go on to apply but lose the competitions or not apply at all. In the aftermath of the RttT competitions themselves, meanwhile, the trend lines for all three types of states cluster closely around one another.[16]

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[14] State speeches were obtained from The Pew Charitable Trusts, retrieved January 15, 2017, from http://www.pewstates.org/states. When Pew tagged them as State of the State speeches, we also included some governors' inaugural addresses.
[15] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[16] A matching analysis confirms that there is no relationship between RttT and the amount of attention devoted to RttT: a policy-by-policy comparison of gubernatorial mentions between winners and losers
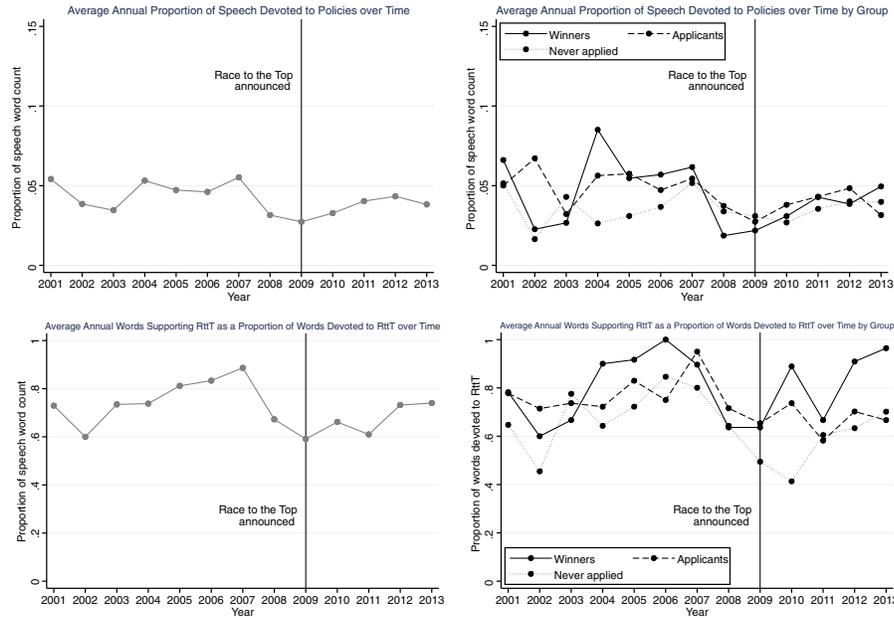
Notes: In the top panels, the unit of analysis is the total number of words devoted to all RttT priorities as a proportion of all words in the speech. In the bottom panels, the unit of analysis is the number of words in support of all RttT priorities as a proportion of the number of total words devoted to those priorities in the speech. Winners are states that won in any round of the competition and applicants are states that applied in at least one round but never won. Because this definition is not dynamic over time, Round 3 (2011) winners that had not yet won in 2010 are still counted as winners in that year.

Figure 2. Trends in RttT Policy Mentions.

Things do not look especially different when considering the content of gubernatorial speeches. In the bottom two panels, we calculate the proportion of words that supported (rather than opposed or appeared neutral to) the president's position.[17] We then average these proportions across all policy mentions and all states. Overall, as the bottom left panel shows, the tenor of discussions appears reasonably constant across the country during the time period under consideration. Governors appeared positively disposed, with roughly 60 to 75 percent of their discussions of RttT policies in any given year endorsing what was, or what would be, the Obama administration's position. As the bottom right panel shows, meanwhile, differences between states in the content of gubernatorial speeches are not especially large. In the years immediately preceding the RttT announcement, governors of eventually winning states did not appear any more supportive of RttT policies in their State of the State speeches than were governors of losing and nonapplying states. In

who got the most similar scores from application judges on the section score corresponding to the given policy reveals no effect of the competition (see Appendix Table B4). All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[17] These proportions are calculated as a function of the total words devoted to each distinct mention of an RttT policy. For policies that were not discussed at all in a speech, we assign a value of zero.

2009, support for RttT policies among governors of nonapplying states did decline, whereas governors of winning states appeared more enthusiastic about RttT policies. These observed differences in political speech, however, attenuate dramatically in regressions that incorporate state, policy, and year fixed effects and control for economic and political covariates, including the partisanship of the governor and the state legislature. Under these more demanding models, as shown in Appendix Tables B2 to B4,[18] we found no effect of the competition on gubernatorial speech making.

If RttT made a difference, it was not by foisting upon states altogether new policies. RttT policies were circulating in public discussions about education reform across the nation long before Obama's initiative was formally announced or executed. Rather, the influence of RttT, such that it existed, came from convincing state policymakers to reconsider education reforms with which they were already quite familiar. To investigate this possibility, we now examine trends in actual policy adoptions.

ESTIMATING THE EFFECTS OF RttT ON STATE POLICY

To identify the effects of RttT on state-level policymaking, ideally we would leverage some form of exogenous variation in either participation or eligibility requirements. Unfortunately, neither of these strategies is possible, as all states were allowed to enter the competition and participation was entirely voluntary. To discern RttT's policy consequences, therefore, we must exploit other kinds of comparisons between the 19 winning, 28 losing, and four nonparticipating states and the District of Columbia. We leverage variation in the timing of states' applications as well as longitudinal data spanning several years before and after the competition to provide causal estimates of RttT's impact on state-level policymaking. The assembled evidence, taken in aggregate, suggests that RttT did not merely reflect a changing education policy landscape; rather, it induced meaningful change.

We tracked the same 30 policies that constituted our coding of the RttT applications along with three additional control policies, which were similar to RttT policies but were neither mentioned nor rewarded under the RttT competitions.[19] In every instance, we examined whether a state legislature, governor, school board, professional standards board, or any other governing body with statewide authority had enacted a qualifying policy each year between 2001 and 2014. Whenever possible we used preexisting databases, such as National Council on Teacher Quality reports and edcounts.org, as starting points for our investigation. Both to verify and extend these data, we scrutinized the statutory language of each state policy to ensure it matched the specific criteria outlined in RttT. To qualify, a policy needed to have legal standing, whether statutorily or administratively acquired. Policies that were merely proposed or out for comment, therefore, did not qualify. Policies also had to apply across the entire state, which excluded pilot programs, in particular districts or metropolitan regions. And finally, a policy counted toward a state's annual policy achievement as long as it was passed within that calendar year.[20]

Figure 3 presents overall trends in policy adoptions. In both panels, observations reflect the average proportion of policies adopted by states within a given calendar

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[18] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[19] Control policies included high school graduation requirements, the establishment of third-grade testing regimes, and tax credits to support private-school scholarships.
[20] Likewise, if a state discontinued a policy within the calendar year, it was coded as not having had the policy.
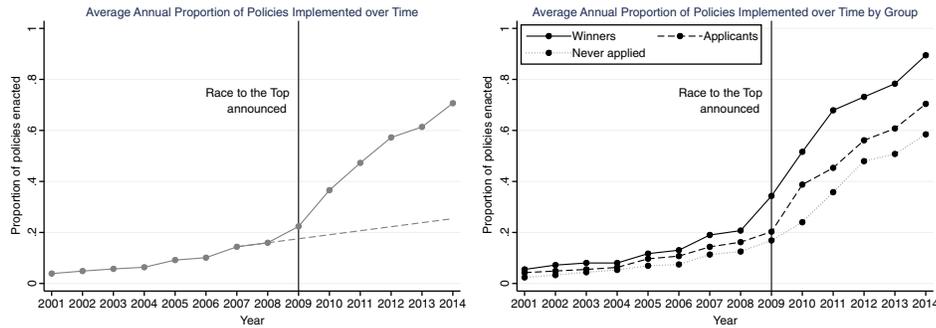
Notes: Unit of analysis is the proportion of RttT policies on the books in a given year. The dotted line in the left panel extends the trend line from 2007 to 2008. Winners are states that won in any round of the competition and applicants are states that applied in at least one round but never won. Because this definition is not dynamic over time, Round 3 (2011) winners that had not yet won in 2010 are still counted as winners in that year. The main policy areas covered by RttT were announced on March 7, 2009. All but one of the policies represented in the 2009 data point above were implemented before that date. The 2014 data point represents policy implementation as of April 2014.

Figure 3. Trends in RttT Policy Enactment.

year. The left panel, therefore, tracks the binary policy implementation variable, Y_{itp}, averaged across the 30 policies (p) for which we tracked legislative histories and the 50 states (i) and the District of Columbia, for each year (t) from 2001 to 2014. As this panel shows, states around the country enacted these policies at a much higher rate in the aftermath of RttT, signified by the solid vertical line. Between 2001 and 2008, states on average enacted about 10 percent of these policies. Between 2009 and 2014, however, 68 percent were enacted. And during this later period, adoption rates increased every single year. The rate of increase, moreover, appears distinctly higher than what one would have predicted if one simply projected the slope of change observed between 2007 and 2008, which is shown by the dashed line. At the rate established by preexisting trends, it would have taken states multiple decades to accomplish what, in the aftermath of RttT, was accomplished in less than 5 years.

Using the same method of calculation, the right panel of Figure 3 disaggregates the policy activities of three groups of states: those that won one of the three RttT competitions (which are represented by the solid line), those that applied to at least one competition but never won (dashed line), and those that never applied (dotted line). In nearly every year between 2001 and 2008, adoption rates in these groups were nearly indistinguishable from one another. In the aftermath of RttT's announcement, however, adoption rates for all three groups increased markedly, but the differences between the groups, which grew wider in every passing year, conformed to the survey results. By 2014, winning states had adopted, on average, 88 percent of the policies, as compared to 68 percent among losing states and 56 percent among states that never applied.[21]

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[21] Winning states first distinguished themselves in 2009. The burst of policymaking activity among these states, however, occurred after the RttT competitions were announced in March. The overwhelming majority of policies that were implemented by winning states in 2009 occurred in June (19 signatories to the Common Core) or later (36 additional policy adoptions across the winning states).

Fixed-Effects Estimates

To sharpen the comparisons of state policymaking activities, we estimate two types of regression models. The first takes the general form:

$$Y_{itp} = \beta_0 + \beta_1 won_{it} + \beta_2 lost_{it} + \lambda_i + \gamma_t + \rho_p + \varepsilon_{itp}$$

where Y_{itp} is a binary indicator for whether policy p is in place in state i and year t, which runs from 2010 to 2014; won_{it} is an indicator variable for winning the competition at any time up to and including year t; $lost_{it}$ identifies states that at any time up to and including year t applied for but did not win federal funds; and λ_i, γ_t, and ρ_p are state, year, and policy fixed effects, respectively. The coefficients β_1 and β_2 can therefore be interpreted as the deviations from the average state, year, and policy-specific rates of RttT policy adoption associated with winning and losing the competition, as opposed to not applying in that year. This design controls for differences across states in any observable or unobservable time-invariant factors that might confound the relationship between participation in the competition and RttT policy adoption. Thus, even hard-to-measure characteristics such as political culture, taste for educational innovation, and the influence of unions and other interest groups are controlled for in this model, giving us a clean estimate of RttT's policy impact.

While the state and policy fixed effects control for all time-invariant confounders, it is possible that some important determinants of state policy activity changed over the study period, and that they did so in ways that are not absorbed by the year fixed effects, which only account for common shocks. To account for this possibility, we estimate a second model with a set of key time-varying state-specific political covariates. This second model takes the following form:

$$Y_{itp} = \beta_0 + \beta_1 won_{it} + \beta_2 lost_{it} + \beta_3 X_{it} + \lambda_i + \gamma_t + \rho_p + \varepsilon_{itp}$$

where X includes per capita education revenue, whether the state had a Democratic governor, and whether there was a Democratic majority in both chambers of the state legislature. Education revenue is drawn from annual U.S. Census estimates, while the political variables are taken from Shor and McCarty's state legislative data (Shor & McCarty, 2014).

For both specifications, separate models are estimated for RttT policies and for a handful of control policies that are similar in form and function to RttT policies but for which no points were rewarded in any of the competitions.[22] These regressions serve as a placebo test to ensure that the effects we find are specific to RttT and not educational innovation more broadly. For ease of interpretation, linear probability models are estimated, and standard errors are clustered at the state level.[23]

The results are presented in Table 4. Columns 1a and 1b include identifiers for winners and losers (with nonapplicants serving as the baseline category) and year fixed effects. The next two sets of models add policy and then state fixed effects, and the last two also add time-varying state-specific covariates. The results reflect

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[22] Further details about these control policies are available in Appendix A. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

[23] We find similar results when estimating the models via logistic regressions, the results of which appear in Appendix Tables B6 and B7, although the difference between winning and losing states is somewhat attenuated. In fact, losers slightly outperform winners in both our main logit specifications. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

Table 4. RttT policy enactment among winners and losers.

	(1a) RttT policies	(1b) Control policies	(2a) RttT policies	(2b) Control policies	(3a) RttT policies	(3b) Control policies	(4a) RttT policies	(4b) Control policies
Won RttT (up to time t)	0.408***	0.289**	0.406***	0.283**	0.519***	0.064	0.592**	-0.287***
	(0.032)	(0.114)	(0.032)	(0.114)	(0.001)	(0.039)	(0.247)	(0.096)
Applied and lost RttT (up to time t)	0.207***	0.123	0.205***	0.120	0.549***	0.044***	0.620**	-0.305***
	(0.033)	(0.099)	(0.033)	(0.099)	(0.046)	(0.004)	(0.235)	(0.096)
State education revenue per capita							0.109	0.003
							(0.151)	(0.184)
Democratic governor							-0.019	-0.072*
							(0.032)	(0.040)
Democratic majority, both chambers							0.039	0.017
							(0.027)	(0.035)
Constant	0.160***	0.137	0.052	0.012	0.076	0.180***	-0.150	0.178
	(0.026)	(0.087)	(0.063)	(0.089)	(0.058)	(0.041)	(0.314)	(0.376)
Year fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Policy fixed effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	No	No	No	No	Yes	Yes	Yes	Yes
R^2	0.091	0.047	0.353	0.142	0.424	0.499	0.424	0.501
N	4,762	689	4,762	689	4,762	689	4,762	689

Notes: State education revenue per capita is measured in thousands of dollars. Standard errors are clustered at the state level.
*** $P < 0.01$; ** $P < 0.05$; * $P < 0.10$.

the basic trends observed in Figure 3. Depending upon the model, winning states were, on average, 41 to 59 percentage points more likely to have adopted a RttT policy after the competition than nonapplicant states. According to our complete fixed-effects specification, applying to RttT but losing had an effect of the same magnitude as winning (55 and 52 percentage points, respectively, with both effects being statistically significant at $P < 0.01$ but indistinguishable from one another). In the models with time-varying covariates, winning and losing states were about equally disposed to adopt policies (59 and 62 percentage points more likely than non-applying states, respectively, with both effects being statistically significantly different from zero at the $P < 0.05$ level but not from each other). For the control policies, by contrast, we find either null or negative effects of the competition on implementation in our two main specifications.

As an additional robustness check, we reestimate the models in Table 4 over the years 2002 to 2008, well before the announcement of RttT, to see how those states that would eventually win the competition differed in their prior policy adoption patterns from those that would ultimately lose or never apply. As shown in Appendix Table B5,[24] we find further evidence in support of the independent effect of RttT: while winners were slightly more likely than nonapplicants to adopt RttT policies throughout the prior period, the magnitudes of these estimates, which hovered around 5 to 8 percentage points, are dramatically smaller than those observed after 2009; under our full fixed-effects and time-varying covariate specification, these differences attenuate to zero.[25] The main findings on offer, then, suggest that the competition harnessed these states' energies toward the narrower set of policy goals preferred by the DOE.

To further clarify the relationship between RttT and state-level policymaking, we also can distinguish the subset of policies on which winning and losing states made explicit commitments in their applications. In so doing, we account not only for the results of the RttT competitions but also for the specific promises that states made in these competitions. We reestimate the models in Table 4, but this time we also include interactions between winning and losing states and whether they promised to adopt a specified policy in their last RttT application. Since nonapplicants made no promises, they are excluded from this analysis. The baseline category, therefore, is losing states that did not promise to implement a policy.[26]

Table 5 presents the results. The interaction effects suggest that both winning and losing states were especially likely to adopt policies about which they made clear commitments in their RttT applications. Where states did not make commitments, winners were either not or only slightly more likely to adopt a given policy than those states that applied and lost. As the interaction effects make clear, however, both winners and losers were substantively and statistically significantly more likely to implement those policies on which they had made explicit promises in their RttT application. Winners were 19 percentage points more likely to implement the policies they promised than losers who did not make commitments, while the effect of promising for losers was around 22 percentage points (not statistically significantly different from the effect for winners).

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[24] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[25] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[26] As previously discussed, states could apply to as many as three rounds of competitions. In their applications, however, states need not make the same policy commitments. In the main analyses, therefore, we consider whether a state made an explicit policy commitment in their most recent RttT application. We also have estimated models that account for whether states made a policy commitment in any of their applications, and the results are virtually identical.

Table 5. Linking RttT policy enactments to application promises.

	(1)	(2)
Won RttT (up to time t)	–0.011	–0.011
	(0.078)	(0.077)
Promise[*] won	0.200[***]	0.201[***]
	(0.063)	(0.062)
Promise[*] applied and lost	0.216[***]	0.217[***]
	(0.036)	(0.036)
State education revenue per capita		0.117
		(0.209)
Democratic governor		–0.016
		(0.035)
Democratic majority, both chambers		0.042
		(0.027)
Constant	–0.002	0.019
	(0.058)	(0.308)
Year fixed effects	Yes	Yes
Policy fixed effects	Yes	Yes
State fixed effects	Yes	Yes
R^2	0.446	0.446
N	4,384	4,384

Notes: State education revenue per capita is measured in thousands of dollars. Standard errors are clustered at the state level.
[***]$P < 0.01$; [**]$P < 0.05$; [*]$P < 0.10$.

The results in Table 5, it bears emphasizing, do not suggest that the effect of winning RttT is smaller than previously indicated. Winners, after all, made a more ambitious set of promises than losers, and so one would not want to condition policy achievements on the promises states made when trying to ascertain the policy effects of RttT. That said, our results do suggest that the very act of making a commitment was highly predictive of RttT policy adoption, whether or not the federal government delivered on the resources and oversight to ensure that states followed through. As the DOE intended, applying for RttT may have mobilized interest groups and created momentum for reform that would persist regardless of the outcome of the competition. It is possible, moreover, that RttT created a national network through which policies diffused from leaders (in this case, RttT winners) to similar or geographically proximate states. In this paper's penultimate section, therefore, we look more closely at both RttT's direct effects on those states that won the competition and its global effects on policy diffusion across nonwinning states nationwide.

Matching Estimates

We now exploit variation in the timing of the three phases of the competition to find a more credible counterfactual for winners: namely, states with similar policy agendas that came close to winning but lost. In the analyses that follow, we compare the policy adoptions of winners to adoptions of similar policies by losers with the most similar scores on the associated section of the RttT application. Our strategy recovers plausibly causal estimates of the effect of actually winning RttT, above and beyond merely participating in the competitions, as long as the way in which we match winning to losing states appropriately controls for any characteristics that might predict states' latent propensity to adopt RttT policies. Fortunately, states'

application scores function as a useful proxy for many important features of a state's proposal. When scoring the different sections of the application, competition judges evaluated how much progress states had already made in that policy domain, how well their activities aligned with RttT's goals, and how successful they were expected to be in the future given the available resources and level of buy-in from relevant actors. These scores, then, provide a solid foundation upon which to match states.

We conduct matching in two stages. First, for each treated observation—a policy in a winning state in a year—we construct a pool of potential matches from all other policies in the same domain in losing states in that same year. The five domains on which we have data, defined within the RttT application, are standards and assessments, data systems, teachers, low-achieving schools, and funding and charter schools. Within these policy domain and year strata, we match policies with the most similar scores on the relevant section of the application, computed as a proportion of the maximum possible points that could have been earned on that section. Our estimate of the average treatment effect on the treated therefore captures the added effect of winning the competition for analogously high-achieving, reform-motivated states rather than the effect of the competition globally.

We conduct three kinds of comparisons. Recall that Phase 1 and 2 winners were announced in early and mid-2010, whereas Phase 3 winners were announced at the end of 2011. Thus, our first analysis focuses on 2010 to 2011, when Phase 1 and 2 winners had been announced but Phase 3 winners had not. This analysis matches, policy by policy within a domain, Phase 1 and 2 winners to the losing states that received the closest possible score on the corresponding section of the application. Because Phase 3 applicants consisted exclusively of Phase 2 finalists, the recovered estimates largely reflect the difference between Phase 1 and 2 winners and eventual Phase 3 winners. Not surprisingly, therefore, our first approach finds good matches: whereas the overall pool of losing states might not offer the most believable counterfactuals for winners, early winners and eventual winners look much alike.

Next, we conduct the same matching procedures except this time we compare Phase 1 and 2 winners in the third (2012), fourth (2013), and fifth (2014) years of their granting periods to Phase 3 winners in the first (2012), second (2013), and third (2014) years of their granting period, respectively. The recovered estimates from this matching procedure reflect the effect of an additional year of being an RttT winner over time. Finally, we compare Phase 3 winners to Phase 1 and 2 losers that were not subsequently invited to participate in the third competition, again over the years 2012 to 2014. Each of the three analyses is conducted three separate ways: drawing the closest match from the entire data set, without replacement, whatever the distance from the treated observation; selecting matches from a bandwidth of one-tenth of a standard deviation of the section score around the treated observation, discarding those observations that do not find a match; and further narrowing the bandwidth to 0.05 of a standard deviation.

Figure 4 shows the improvement in balance on section score after matching. The points on the Q-Q plots indicate where the same quantile falls in the control group (*x* axis) and treatment group (*y* axis). The 45-degree line is plotted for reference; points falling along this line indicate strong evidence that the two groups follow the same empirical distribution. We see that, while the winners in the raw data tend to have much higher section scores than the losers, our matching technique successfully constructs comparable samples—not only in terms of means, but across their entire distributions—particularly as we decrease the caliper within which we select
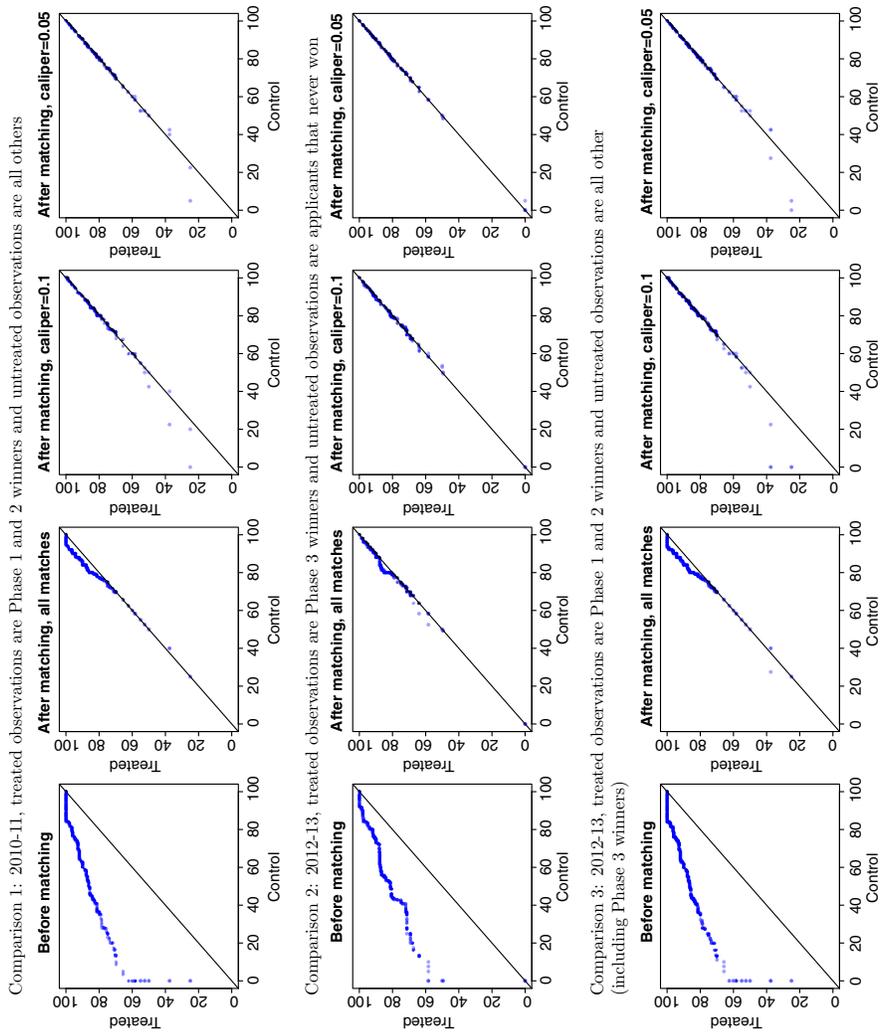
Figure 4. Q-Q Plots of Balance on Section Score Exact Matching on Year and Policy Domain, Nearest Neighbor Matching on Section Score.

Table 6. Average treatment effect on the treated, exact matching on year and policy domain, nearest neighbor matching on section score.

Comparison 1: 2010–2011, treated observations include Phase 1 and 2 winners and untreated observations include all others		
(1) Full data	(2) Cal = 0.10 SD	(3) Cal = 0.05 SD
ATT	0.120***	0.115***	0.098**
	(0.032)	(0.037)	(0.038)
N 936	676	652

Comparison 2: 2012–2013, treated observations include Phase 3 winners and untreated observations include applicants that never won		
(1) Full data	(2) Cal = 0.10 SD	(3) Cal = 0.05 SD
ATT	0.093***	0.156***	0.154***
	(0.033)	(0.036)	(0.037)
N 776	628	596

Comparison 3: 2012–2013, treated observations include Phase 1 and 2 winners and untreated observations include all others (including Phase 3 winners)		
(1) Full data	(2) Cal = 0.10 SD	(3) Cal = 0.05 SD
ATT	0.118***	0.094***	0.073**
	(0.025)	(0.029)	(0.030)
N 1,302	914	882

Notes: Standard errors are clustered at the state level.
***$P < 0.01$; **$P < 0.05$; *$P < 0.10$.

matches. Appendix Table B8[27] presents the mean difference between treated observations and matched controls on each covariate. It shows that we achieve perfect balance on the primary covariate of interest, section score, as well as reasonable balance on other covariates on which we did not explicitly match, suggesting that section score alone does a good job of capturing a state's propensity to adopt RttT policies.

Table 6 presents the point estimates from this matching exercise. Here, we find even more consistent evidence of RttT winners outperforming RttT losers. In the immediate aftermath of the first two phases of the competition (Comparison 1), which also precedes the DOE's practice of granting NCLB waivers to states, we find that states that won either of the first two phases of the competition were substantively and statistically significantly more likely—on the order of 12 percentage points—to adopt RttT policies in 2010 and 2011 than were the highest performing losing states. This effect continues to persist even as we narrow the bandwidth of potential matches to 0.05 standard deviations around the section score, decreasing slightly to 10 percentage points but remaining statistically significant at the $P < 0.05$ level.

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[27] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

These observed differences do not appear to be a strict artifact of the application process itself. When selecting winners in each of the three phases of the competition, the DOE assessed the likelihood that states would adopt RttT policies. When matching on this particular component of a state's score, rather than the section score as in Table 6, the results not only carry through, but appear somewhat larger (See Appendix Table B9[28]). Within the observable data, at least, it does not appear that winning a RttT grant merely signaled forthcoming policy changes that would have occurred absent the competition itself.

The differences registered in the second comparison point in the same general direction as those observed in the first. In nearly every instance, states that received a Phase 3 grant exhibited higher propensities to adopt RttT policies from 2012 to 2014 than did comparable states that did not win any funding at all. For the narrowest bandwidths on RttT score comparisons, Phase 3 winners were 15 percentage points more likely to have adopted a RttT policy than were similar losing states, a statistically significant effect at $P < 0.01$. In the third comparison, the observed differences remain positive and statistically significant. Because Phase 3 winners now are included in the comparison group, however, the size of these differences attenuates. Particularly when focusing on matched observations within the narrowest bandwidth, states that received the significantly larger funds associated with the Phase 1 and 2 competitions were seven percentage points more likely to adopt an RttT policy between 2012 and 2014 than were states that participated in and won the Phase 3 competition.

When employing alternative matching strategies and covariates, our main results appear largely unchanged. For instance, in our main analysis, we assume that policies within a domain are more or less interchangeable, as they constitute steps toward the same broader policy goal, such as using data to inform teacher hiring and retention practices or building up data systems to track student progress. Still, we verified that our results are robust to restricting the pool of potential matches to the exact same policy rather than policy domain (see Appendix Tables B10 and B11[29]). Additionally, in our main analysis we focus on achieving balance on section score, using other covariates such as prior policy achievement as a validity check on how well section score captures a state's propensity to adopt RttT policies. Achieving reasonable balance on these other covariates when matching on section score alone makes us confident that our measure is a good one. However, we can also match on these other covariates directly in addition to section score, an approach we take in Appendix Tables B12 to B13.[30] Our results are also robust to this specification of the propensity score.

Policy Adoptions in Losing and Nonapplying States

What accounts for the heightened policy activity in states that did not actually receive federal funding? For losing applicants, at least, an important part of the answer has to do with the structure of the competitions themselves. In an effort to improve their chances of winning, all participating states—winners and losers alike—had incentives to adopt new education policies. In a competition with private bids and an uncertain number of winners, many participating states had

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[28] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[29] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[30] All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

incentives to seek higher scores by first enacting some of the policies that RttT championed.

Consider the experience of Illinois, which submitted applications in all three rounds of RttT but did not win until the final one. Illinois's biggest policy accomplishments happened well before it received any funds from the DOE. According to a variety of reports,[31] the rapid enactment of RttT policies reflected a concerted effort by the state government to strengthen its application in each competition. On January 1, 2010, 18 days prior to the submission date for Phase 1 applications, Illinois enacted the Performance Evaluation Reform Act (PERA), which significantly changed teacher and principal evaluation practices.[32] Upon learning that it had the highest score among losing states in the Phase 1 competition, Illinois then set to work on strengthening its application for the next round. Indeed, Illinois started implementing policy promises from its Phase 1 application before it even drafted its Phase 2 application.[33] Efforts to shore up its credentials persisted when Illinois learned that it once again had the dubious honor of receiving the highest number of points among losing states in the Phase 2 competition. The state then enacted Senate Bill 7, which strengthened various provisions of PERA.[34] In every one of these instances, RttT served as a catalyst for education reform. As State Senator Kimberly Lightford noted, "It's not that we've never wanted to do it before. I think Race to the Top was our driving force to get us all honest and fair, and willing to negotiate at the table."[35]

More is at work, though, than just the selective and strategic efforts of state governments to increase their chances of winning. The DOE also benefited from another feature of U.S. state policymaking: diffusion. After RttT stimulated policymaking in some states, other states took notice and followed suit (Meredith, 2013). And as the following analysis makes clear, well-known factors that drive policy diffusion between states contributed to the proliferation of RttT reforms across the country.

A lively literature on diffusion has identified many possible mechanisms by which states may decide to emulate one another's policies (see Graham, Shipan, & Volden, 2013, for a review). Much of this work can be distilled into four basic arguments (Shipan & Volden, 2008): (1) states learn from each other's experiences (Glick & Hays, 1991; Mooney, 2001; Mooney & Lee, 1995; Walker, 1969); (2) economic competition between states drives them to adopt new policies in response to those of their neighbors (Berry & Berry, 1990); (3) organizations of states or the federal government engage in coercion; and (4) new ideas diffuse through socialization between decisionmakers. This typology is useful for pinning down the channels of diffusion. A first, obvious contender is geography, for it is easy to see how each of the proposed mechanisms might operate at the boundaries of contiguous states. Indeed, the bulk of the early literature focused on the diffusion of policies across neighboring states—driven in large part by competitive pressures, but also

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[31] In addition to those listed below, see Manna and Moffitt (2014).

[32] Illinois State Board of Education Performance Evaluation Advisory Council. "New Evaluation Systems Provide Illinois Educators Greater Support." Retrieved January 15, 2017, from https://www.isbe.net/Pages/Educator-Evaluations.aspx.

[33] Gilmer, Marcus. "State is 'Race to the Top' Finalist." March 4, 2010. *Chicagoist*. Retrieved January 15, 2017, from http://chicagoist.com/2010/03/04/state_is_race_to_the_top_finalist.php.

[34] Illinois State Board of Education. "Performance Evaluation Reform Act and Senate Bill 7." See also: U.S. Department of Education, "Nine States and the District of Columbia Win Second Round Race to the Top Grants." August 24, 2010. Retrieved January 15, 2017, from http://www.ed.gov/news/press-releases/nine-states-and-district-columbia-win-second-round-race-top-grants.

[35] Illinois Watchdog website. "Race to the Top Failure Spurs Senate Education Reform." April 18, 2011. Retrieved January 15, 2017, from http://watchdog.org/39598/ilshn-race-to-the-top-failure-spurs-senate-education-reform/.

acknowledging how convenience, political networks, demographic and political similarity, and overlapping media markets promote socialization and learning (Berry & Baybeck, 2005; Mintrom & Vergari, 1996; Mooney, 2001; Rogers, 1995; Walker, 1969). In keeping with this literature, our first analysis focuses on geographical contiguity as a pathway for RttT policy diffusion.

But the political networks through which policy innovation travels are not structured by geography alone (Walker, 1969). In fact, recent work examining a long time horizon and a multitude of policy domains has found that the vast majority of diffusion ties are between states that do not share a border, but rather similar demographic and political features (Desmarais, Harden, & Boehmke, 2015). According to this scholarship, governments tend to emulate others with whom they share ideological views (Grossback, Nicholson-Crotty, & Peterson, 2004; Volden, 2006); and elected officials look to places with similar social and demographic profiles and policy challenges to gauge how reforms will work in their particular context (Boehmke & Witmer, 2004), how their constituencies will react (Boehmke, 2000), and the risks involved (Bennett, 1991). Thus, in our second analysis, we trace the diffusion of RttT policies across ideologically, economically, and demographically proximate states, particularly with respect to the features that would be relevant for their education systems.

As our first measure of diffusion, we code each observation according to whether a given policy was in place in a bordering state in year t. For each state i, then, we assign every bordering state a weight of $1/n$, where n is the total number of bordering states, and every nonbordering state a weight of 0. We then compute the weighted sum of all other states' policy adoptions in the same year. For example, for the policy of intervening in persistently low-achieving schools in the state of California in 2012, we check whether Arizona, Nevada, and Oregon had the policy in place; since Arizona and Nevada did in 2012 but Oregon did not, our independent variable takes a value of 0.66.

For our demographic and political similarity analysis, we draw upon a rich set of state-specific time-varying controls including total state population; the percentage of the state's population that is Black and Hispanic; total elementary and secondary school enrollment; per capita income, education revenue, and education expenditure; whether the state had a Democratic governor and whether there was a Democratic majority in both chambers of the state legislature; and whether the state had right-to-work provisions. For this vector of (standardized) covariates in each state i and year t, we compute the Euclidean distance to each other state j's covariate vector, and construct a vector of weights that is the inverse distance between states i and j, divided by the sum of inverse distances between state i and all other states (so that the weight vector sums to 1).[36] As in the neighboring state analysis above, we apply this weight to compute the weighted sum of all other states' policy adoptions in the same year.

In Table 7, we reestimate our main models but this time we include our two measures of diffusion. For each potential diffusion channel, we estimate two models: one with the full panoply of fixed effects and a second with the addition of the same time-varying state-specific covariates used in our main model specifications.[37] In

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[36] This follows the approach of Case, Rosen, and Hines (1993), except that we use the Euclidean distance on a vector of standardized covariates rather than the absolute distance on one covariate.

[37] We additionally estimate models where we swap out state fixed effects for the full vector of political and demographic controls that we used to determine similarity between states. The inclusion of state-specific identifiers as covariates in our models allows us to recover estimates of both their direct effects on policy adoptions and their combined second-order effects as they determine which other states' policies a state chooses to emulate, and these results are similar to those reported in Table 7.

Table 7. Effect of adoption of same policy in proximate states.

	(1)	(2)	(3)	(4)
Won RttT (up to time t)	0.314***	0.335***	0.291***	0.326***
	(0.041)	(0.048)	(0.080)	(0.073)
Applied and lost RttT (up to time t)	0.188***	0.208***	0.157**	0.190***
	(0.039)	(0.044)	(0.077)	(0.070)
Same policy in similar states	0.258***	0.258***		
	(0.013)	(0.013)		
Same policy in neighboring states			0.145***	0.146***
			(0.017)	(0.017)
State education revenue per capita		0.019		0.031
		(0.019)		(0.024)
Democratic governor		0.006		0.004
		(0.016)		(0.016)
Democratic majority, both chambers		–0.006		–0.002
		(0.019)		(0.022)
Constant	0.199***	0.163***	0.185***	0.126*
	(0.035)	(0.052)	(0.048)	(0.073)
Year fixed effects	Yes	Yes	Yes	Yes
Policy fixed effects	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
R^2	0.520	0.521	0.487	0.488
N	12,101	12,101	12,101	12,101

Notes: Same policy in similar and neighboring states and education revenue variables are standardized, so that the interpretation of their coefficients is the change in the outcome associated with a one standard-deviation increase in the explanatory variable.
Standard errors are clustered at the state level.
***$P < 0.01$; **$P < 0.05$; *$P < 0.10$.

both instances, we find substantively large, positive, and statistically significant correlations between our measures of diffusion and policy adoptions. Depending on the model specification, a one-standard deviation increase in a state's diffusion index correlates with somewhere between a 15 and 26 percentage point increase in the chance that a state will adopt a given policy in a given year.

These findings are robust to numerous alternative specifications. When specifying models that assess policy adoptions within classes of RttT policies rather than exact policies, our estimates of the diffusion effects attenuate in magnitude but remain positive and statistically significant.[38] When including specific information about a state's educational expenditures into our measure of "similar" states, we recover nearly identical results.[39] We also investigated whether evidence of diffusion was confined to a particular period for either winners, losers, or nonapplicants. It was not. In models that estimate the effect of diffusion separately for each group before, during, and after RttT, we find significant and positive effects throughout. Though we can never reject the null that the estimates are the same during all periods for winners, we do find some evidence that the effects increased in magnitude over

[38] See Appendix Table B14. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.
[39] See Appendix Table B15. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

time for the losers and nonapplicants.[40] Although diffusion was a constant presence for this class of education reforms, RttT appears to have accentuated the influence of diffusion over precisely those groups that did not benefit financially from the competitions themselves.

CONCLUSION

In its announcement, media coverage, and basic structure, RttT plainly intended to impress. Through a highly prescriptive competition, the Obama administration sought to remake education policy around the nation. The evidence presented in this paper suggests that it succeeded in doing so. The testimonies of state legislators, most immediately, underscore the relevance of RttT for state policymaking. In the aftermath of RttT, states aggressively enacted policies that were explicitly rewarded under the competitions. States did so, moreover, in ways that comported with the outcomes of the competitions themselves and the policy commitments they made in them. The balance of evidence from this analysis indicates that winning states adopted RttT policies at significantly higher rates than both losing and nonapplying states. And both winning and losing states were especially likely to adopt policies on which they made explicit promises in their RttT applications.

The evidence of RttT's influence, however, extends well beyond the estimated differences between winning, losing, and nonapplying states. Fulfilling Obama's own ambitions for the competition, in the aftermath of RttT policy activity began to surge in all states. And the patterns of policy enactments, we show, comport remarkably well with existing theories of policy diffusion. In this way, we see how a minor infusion of federal funding can alter policy outcomes in states that do not receive, and in some instances do not even seek, those funds.

Conservatively, it seems safe to conclude that the effects of RttT were universally nontrivial and increasing in a state's involvement in the competition. Because of the clear selection and contagion effects present, however, it is nearly impossible to pin down a precise estimate of the magnitude of RttT's impact. Because observed differences in policy adoption rates between winning and nonapplying states ignore the presence of diffusion, they may understate the true effect of RttT, but such differences overstate the true effect of RttT insofar as the DOE chose winners, in part, on the basis of projections of each state's future behavior. Without making strong assumptions about the relative importance of either factor, it is impossible to discern exactly how much state-level policymaking RttT stimulated.

To be sure, when selecting winners in the RttT competitions, the DOE attempted to assess the likelihood that states would follow through on their policy promises. Additionally, it is at least possible that RttT appeared on the scene at a time when states already were poised to enact widespread policy reforms. Several facts, however, suggest that RttT is at least partially responsible for the rising rates of policy adoption from 2009 onwards. First, winning states distinguished themselves from losing and nonapplying states more by the enactment of RttT policies than by other related education reforms. Second, at least in 2009 and 2010, RttT did not coincide with any other major policy initiative that could plausibly explain the patterns of policy activities documented in this paper. While the ARRA established a host of education funds to support state policymaking in education technology, school improvement, and data systems, the disbursements of these funds looked very different from those of RttT funds. Meanwhile, the provision of NCLB waivers had not

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[40] See Appendix Tables B16 and B17. All appendices are available at the end of this article as it appears in JPAM online. Go to the publisher's website and use the search engine to locate the article at http://onlinelibrary.wiley.com.

yet begun. Third, and finally, both local media reports and state legislators' own testimony confirm the central role that RttT played in the adoption of state policies between 2009 and 2014, either by directly changing the incentives of policymakers within applying states or by generating cross-state pressures in nonapplying states.

The evidence on offer does not illuminate the exact mechanisms at work (McCann, Shipan, & Volden, 2015). The core empirical estimates in this paper speak to the fact of RttT's influence rather than the avenues through which such influence was exercised. For a full exploration of this topic, we refer readers to a companion paper (Howell & Magazinnik, 2017), which illuminates how financial considerations and heightened media attention affected the willingness of states to participate in RttT, the specific promises they made in their applications, the patterns of voting within state legislatures, and the policies they ultimately enacted.

It also is difficult to ascertain the generalizability of the findings contained in this paper. RttT came along at a time of severe fiscal austerity, when states had ample reason to seek out new sources of education funding. But it was hardly a foregone conclusion that RttT would stimulate new policy activity. The competitions, after all, relied upon a modest amount of federal money in order to advance education policies that organized stakeholders, notably teachers' unions, had previously opposed. It therefore remains very much an open question whether similar competitions could realize comparable policy changes in other policy domains.

Finally, we must not lose sight of this paper's scope conditions. None of the preceding analyses speak to the translation of policy enactments into real-world outcomes. And for all sorts of reasons—as Moe (2015), Patashnik (2008), Pressman and Wildavsky (1984), Cohen and Moffitt (2009), and many others have documented—the possibility that RttT influenced the production of education policy around the country does not mean that it changed goings-on within schools and districts. Stakeholders who opposed these reforms may have worked assiduously to dampen their impact. The interest of citizens who supported them, meanwhile, may have drifted to other topics. Coalitions in support of a policy enactment may have dispersed, and procedural restrictions that once strengthened a policy may have come undone.[41]

Nonetheless, the policy activity spurred by RttT constitutes a major accomplishment for the Obama administration. With a relatively small amount of money, lacking formal constitutional authority in education, and without the power to unilaterally impose his will upon state governments, Obama managed to jumpstart policy processes that had languished for years in state governments around the country. RttT did not introduce charter schools, accountability measures, or data administration processes to policy discussions occurring around the country. But RttT did create a set of new incentives for states to actually adopt them. So doing, Obama and the federal DOE situated themselves at the very center of legislative and administrative policymaking processes in a domain that historically had been the subjects of state and local control.

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[41] Such concerns are borne out in a series of media reports documenting weaknesses in the implementation of newly enacted accountability measures. See, for example: Jenny Anderson, "Curious Grade for Teachers: Nearly All Pass," *New York Times*, March 30, 2013; and Stephen Sawchuk, "Teachers' Ratings Still High Despite New Measures," *Education Week*, February 5, 2013.

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