Converging on Choice: The Interstate Flow of Foundation Dollars to Charter School Organizations

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A growing body of research has been documenting the pivotal role that philanthropic funding plays in advancing state and local charter school reform. However, there is little understanding of the geographic flow of these funding patterns and the market, policy, and organizational conditions that have concentrated funding in some clusters of states more than others. To address this limitation, we use descriptive cartography and quadratic assignment procedure (QAP) regression to analyze longitudinal funding data from 15 philanthropic foundations along with data related to the contexts of the states where grant recipients reside. We find that between 2009 and 2014, foundations were increasingly converging their funding flows to charter school organizations in select clusters of states as they shifted the concentration of funds away from individual charter schools to charter management organizations (CMOs) and advocacy organizations. A substantial portion of the variation in this interstate convergent grant funding was associated with previously established funding flows. However, the local market and policy contexts of states and certain forms of evidence of charter school effectiveness were also associated with interstate convergent funding. These findings point to the potential ways public policy and research can shape the flow of private money into public education and yet illuminate substantial geographic inequality in the ways these funds are distributed.

Keywords: descriptive analysis; educational policy; educational reform; finance; networking; organization theory/change; regression analyses; research utilization

In just a few decades, school choice policies have shifted from the fringe of education policy discussions to a central focus of contemporary education reform. The rise in support for charter schools in particular has taken shape alongside a long-standing discourse that says our traditional public schools are in crisis and require a shift toward market-oriented practices (Chubb & Moe, 1990; Friedman, 1955). Indeed, this discourse points to democratic governance—and the bureaucratic structures that arise in the process—as the fundamental problem facing public education. As this discourse has gained traction in the collective imagination of U.S. citizens, new organizational alliances have pushed for the expansion of charter schools in the vast majority of states (Scott, Lubienski, & DeBray-Pelot, 2008). By all measures, these efforts have been effective, as 44 states now have laws authorizing charter schools and the proportion of students attending such schools is steadily increasing (National Alliance for Public Charter Schools, 2016).

Philanthropic foundations have played a central role in this transformation. In the 2000s, major philanthropic foundations in the United States dramatically increased their funding flows to charter school organizations and other nontraditional education providers (e.g., Teach For America) while proportionately decreasing funding to traditional public schools and associated institutions (Reckhow & Snyder, 2014). This increase in funding to charter school organizations has taken shape in a systematic fashion in which multiple foundations have awarded grants to the same recipients (e.g., Green Dot) or organizations in the same educational subsystem (e.g., Louisiana). This practice has been termed *convergent grant funding* (Reckhow & Snyder, 2014) because it involves the flow of funding from different philanthropic sources into the same organizational units. Convergent

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grant funding is common among strategic (or venture) philanthropists and corporate elites working to shape education policy through private foundations (Reckhow, 2013; Scott, 2009; Tompkins-Stange, 2016). Whether intentional or not, convergent grant funding practices give foundations considerable leverage to influence organizational capacity and have enabled some charter management organizations (e.g., KIPP) and subsystems (e.g., New Orleans) to expand the supply of charter schools at a dramatic rate.

Recent evidence indicates that philanthropic foundations prefer to fund national-level advocacy and charter management organizations (CMOs) to advance charter school reform (Ferrare & Reynolds, 2016; Reckhow & Snyder, 2014). Due to the decentralized structure of the American education system, however, foundations also target substantial funds at the state and local levels. This strategy aligned well with the Obama administration's own tactics of mobilizing nontraditional education providers at the state and local levels through competitive grant programs such as Race to the Top (RTTT). For the federal government, this marked a shift away from adopting policy ideas toward the practice of supporting policy actors who share similar beliefs (Mehta & Teles, 2012). Contemporary philanthropic foundations function in a similar manner by awarding grants directly to charter school organizations in states and districts working to expand school choice infrastructure. The geographic context is important because philanthropic foundations seek to strategically move their resources where they can have the greatest impact (Ferris, Hentschke, & Harmssen, 2008). Ostensibly, foundations use research evidence to inform these decisions (Scott & Jabbar, 2014), but the policy environment and organizational capacity of states must also be favorable for their efforts to move forward (Tompkins-Stange, 2016).

The practice of convergent grant funding is central to understanding these efforts because the capability of foundations to influence education policy comes not from individual endowments but rather the combination of funding flows working through a network context (Reckhow, 2013; Scott & Jabbar, 2013; Tompkins-Stange, 2016). This is especially true at state and local levels where grants from individual foundations, while significant, pale in comparison to state budgets. As a result, a growing body of research has been documenting the pivotal role that convergent grant funding plays in advancing state and local charter school reform. However, there is little understanding of the interstate convergence of these funding flows and the market, policy, and organizational conditions that have facilitated this movement to some clusters of states more than others. In addition, while much of the work to date has powerfully described philanthropic convergence on school choice policy in cities and states around the country, few researchers have attempted to model these descriptive patterns to uncover the conditions through which these practices arise (Snyder & Reckhow, 2017).

In this paper, we make use of a longitudinal data set to address the following questions:

Research Question 1: What types of organizations do philanthropic foundations fund to advance charter school reform, and how have these funding patterns changed over time?

Research Question 2: In which states have philanthropic foundations converged to support charter school reform?

Research Question 3: What are the market, policy, and organizational conditions associated with state-level processes of convergent grant funding?

To address these questions, we use statistical modeling techniques from social network analysis and basic principles of cartography to analyze funding data from 15 foundations in 2009, 2012, and 2014. We find that over this time period, foundations maintained a consistent distribution of funds across geographic scales (i.e., national vs. state/local) but increased the proportion of funds directed to CMOs and advocacy organizations in select clusters of states. A meaningful portion of the variation in this interstate convergent grant funding was associated with supply and demand for charter schools and select evidence of charter school effectiveness. However, the policy contexts of states and prior funding patterns were also associated with changes in the frequency with which the same foundations funded charter school organizations in the same clusters of states.

The findings from our analysis identify some of the conditions through which private foundations work to influence charter school reform at the state level. Although our observational design constrains causal conclusions, the results reveal substantial geographic inequality in how foundations fund charter school reform and provide insight into the potential ways public policy and research can shape how these funds are distributed in the future. These insights thus have direct implications for researchers, stakeholders, and policymakers given the extent to which charter school reform has become dependent on investment from private foundations.

Foundations and Charter School Reform

Foundations seeking to support organizations that promote charter school policies must navigate multiple contexts that can both challenge or facilitate their efforts. On the surface, these decisions may reflect simple economic exchanges through which foundations choose to fund organizations that appear able to produce outcomes most closely aligned to their objectives. Our theoretical approach, however, assumes these exchanges are embedded in a variety of strategic action fields that shape these relationships (Fligstein & McAdam, 2012; Granovetter, 1985). For example, while foundations may base their funding decisions on evidence supporting a program's effectiveness or the demand for charters in a given area, organizational field theory assumes these decisions interact with multiple (potentially conflicting) sources of evidence and the political and organizational conditions of a given policy subsystem.

Foundations that practice strategic philanthropy in the realm of education policy operate in a networked environment (Reckhow, 2013; Scott, 2009; Tompkins-Stange, 2016). These policy networks are constituted by informal sets of organizations that exchange information and leverage resources within and between policy subsystems in an effort to achieve desired outcomes (Knoke, 2011; Rhodes, 2006). Education policy scholars have argued that private foundations serve as key actors in these policy networks by channeling resources (money, information,

etc.) to a wide variety of intermediary organizations such as think tanks, charter management organizations, and advocacy groups (Scott & Jabbar, 2014). Foundations thus form a unique type of network—called an *affiliation network* (Borgatti, Everett, & Johnson, 2013)—in which they become affiliated not through direct ties to each other but via the organizations and subsystems they co-fund. The affiliations do not arise coincidentally, however; rather, these co-funding patterns often reflect calculated efforts among foundations to provide funding in areas where other foundations are awarding grants to leverage their investments against existing organizational capacity (Tompkins-Stange, 2016).

Aside from providing financial capital, foundations play an important role in these contexts by acting as knowledge brokers (Scott & Jabbar, 2013). Indeed, a growing body of research has examined the impact of the information flows working through education policy networks (Lubienski, Scott, & Debray, 2014). For instance, scholars have found that disparate sources of research often flow redundantly through advocacy coalitions, resulting in the appearance of a consensus (Lubienski, Weitzel, & Lubienski, 2009). Many of these coalitions lack the capacity to critically engage with technical research and rely on the reputations of research producers rather than the quality of the research itself (Debray, Scott, Lubienski, & Jabbar, 2014). Furthermore, there is a tendency for a select number of reports produced by intermediary organizations (think tanks, etc.) to be more influential than peer-reviewed studies appearing in academic journals, creating what has been termed an "echo chamber" effect (Goldie, Linick, Jabbar, & Lubienski, 2014).

Finally, foundations operate within and between political fields that facilitate or complicate the capacity for charter school policies (Holyoke, Henig, Brown, & Lacireno-Paquet, 2009) and broader education reforms (Snyder & Reckhow, 2017). These fields are constituted by the political coalitions and governance structures working to maintain power in their respective jurisdictions (Reckhow, 2013) as well as the policies influencing charter schools within these contexts. As noted previously, for example, the Obama administration's RTTT program incentivized states to develop infrastructure to support jurisdictional challengers in the charter school sector (Mehta & Teles, 2012). States without charter school laws or those states that placed caps on the number of authorized charter schools were penalized during the grant application process. This approach was guided by the popular belief among charter advocates that the most effective charter school policies can be found in states without limits on charter school growth (Ziebarth & Palmer, 2014).

Numerous testable hypotheses can be derived from the theoretical perspective outlined previously. First, market theory expects that foundations will converge in state subsystems with a relatively low supply (e.g., minimal funding or support) and high demand for charter schools (e.g., low-achieving public schools). These flows should also converge in clusters of state subsystems where there is evidence that charter schools outperform traditional public schools. As identified in the aforementioned literature, evidence acquired from reports disseminated outside of academic journals should be more influential than evidence appearing in peer-reviewed journals. Third, we hypothesize that foundation convergence will more frequently occur in states with policy conditions favorable to charter school reform. This includes states without caps on charter school growth, automatic exemptions from collective bargaining agreements, and states that have been awarded RTTT grants. Finally, foundations should converge their funding flows in state subsystems where other foundations are headquartered and previous convergent funding relationships have been established. Given the uncertainty involved with funding in education policy, previous funding activity is likely to signal that other foundations are already working to build the capacity for charter school growth.

Data and Methods

The sources of data for the analysis included foundation grants, state-level attributes, and journal articles and reports concerning state- and local-level charter school outcomes. First, we collected and entered information related to grants awarded by 15 foundations to charter school organizations in 2009, 2012, and 2014. We chose to use 2009 as our initial data point because we wanted to capture funding flows to charter school organizations immediately before and after the Obama administration's RTTT initiative. The 2009 cutoff creates a potential source of bias toward more recent patterns of funding, but prior research suggests patterns of convergent funding have been accelerating since at least 2005 (Reckhow & Snyder, 2014). The foundations in our sample were chosen based on three criteria. First, we chose foundations known to support charter school reform as identified in the literature (e.g., Au & Ferrare, 2014; Reckhow & Snyder, 2014; Scott, 2009) and our own review of their mission statements. Next, we sought to capture foundations who varied in the scope and strategies they used to influence education policy (e.g., outcome focused vs. field-oriented; see Tompkins-Stange, 2016). Finally, we attempted to include foundations in a wide variety of states to mimimize the potential for geographic bias.

Grant data were collected through a combination of foundations' 990 tax documents, databases on foundation websites, and annual reports.[1] For each grant awarded by a foundation in the sample, we entered the following information about the recipient and their award: organization name, geographic location (city/state), type of organization (CMO, school, advocacy, etc.), amount of the award, geographic scale of the award (national, state, or local), and year the grant was awarded. In total, the sample of 15 foundations gave 667 grants—totaling $375 million—to 398 charter school organizations across the three years under analysis. See Appendix A for a list of the foundations in the sample.

We then collected attribute data for each state where charter schools were legal prior to 2009. These 39 states and the District of Columbia included those where local charter school organizations did not receive any grants from the foundations in the sample during the time period under analysis. For each state, we created dummy variables for a variety of attributes related to supply and demand, policy context, and organizational capacity. In particular, the variables indicated whether or not each state: (a) offered startup funds to charter schools, (b) was below basic proficiency on National Assessment of Eduational Progress (NAEP)

assessments in either math or reading for Grades 4 and 8, (c) removed caps on charter school growth, (d) provided charters with automatic exemptions from collective bargaining agreements, (e) received RTTT funds, and (f) houses the organizational headquarters of one or more of the sampled foundations. Note that some variables were measured at different times depending on whether they were included in the 2012 or 2014 model (see additional details in the following).

For the evidentiary data, we searched the literature for studies released or published between 2009 and 2013 that attempted to measure the effectiveness of student achievement in charter schools at state and local levels. Thus, studies that measured the effects of charter schools at the national level and those that did not reveal the geographic location of the schools were excluded from our analysis. Each study was then coded based on the evidence of charter school effectiveness in terms of student achievement relative to traditional public schools: higher, lower, same, or mixed. We also coded whether the studies had appeared in peer-reviewed journals. In the end, a total of 25 studies with state-level data were included in our evidence sample (see Appendix B for the list of studies). We then added four dummy vectors to the state-level attribute data set (see aforementioned) indicating whether there was published evidence—in peer-reviewed journals or other sources—that charter schools in each state increased student achievement between 2009–2011 and 2012–2013. A 1 was assigned if there was any evidence that charter schools increased student achievement in that state—even if the evidence was mixed (e.g., gains for low-income students and no effect for middle-class students). Our intent was to be judicious and assume that foundations could view any evidence of improvement as worthy of future investment.

Analytic Strategy

Our analytic approach began with a descriptive look at the foundations' giving patterns to charter school organizations between 2009 and 2014. We first examined changes over time in the types of charter school organizations receiving funding (e.g., CMOs, education managements organizations [EMOs], advocacy). Next, we explored the geographic context of these giving patterns by identifying the states where organizations received the most funding from the sample of foundations. To do this, we used choropleth maps of the United States and a two-mode matrix to illustrate the geographic distribution of the funding flows across all three years under analysis. For the state-level results, we focused on those grants awarded to organizations with clearly defined roles at the state or local level and excluded those grants to organizations whose work focuses on a national scale. For example, 50CAN is headquartered in Washington, D.C., but engages in advocacy efforts in numerous states. Thus, it cannot be assumed that an award to 50CAN is an award intended to impact charter reform in the District of Columbia.

The descriptive findings help set the stage for testing our model of interstate funding flows. One approach to testing this model would be to use individual states as the unit of analysis in which the dependent variable measures the number of foundations awarding grants to charter school organizations in each state. However, since our objective is to understand interstate

convergence, we used a dyadic unit of analysis indicating the number of foundations that each pair of states shared in common. These state-by-state dyads provided a measure of the extent to which the same foundations funded charter school reform in the same sets of states (i.e., interstate convergent grant funding). This dyadic approach allowed us to directly identify the market, policy, and organizational conditions through which multiple states attract the same funders.

To prepare the data for our model, we first created foundation-by-state affiliation matrices for 2009, 2012, and 2014. Each affiliation matrix indicated whether or not foundation i had funded one or more charter school organizations in state j. Each matrix was then pre-multiplied into a state-by-state matrix in which the off-diagonal cells indicate the number of foundations that funded charter school organizations in both states j and k. For example, if California and New York shared six foundations in common in 2012, then we know that six of the foundations from our sample converged in those two states to fund charter school organizations during that year. The state-by-state dyads in the 2012 and 2014 matrices comprised the dependent variables in our analysis, and the 2009 matrix was used as a set of independent variable dyads measuring previous interstate convergent grant funding activity (analogous to prior test scores in a model of student achievement). Thus, as described in the following, we tested our model of interstate convergent funding on the 2012 and 2014 matrices.

For the independent variables in the analysis, we converted the state-by-attribute vectors into the same state-by-state matrices discussed previously, with the values indicating whether or not states j and k shared a given attribute in common. This means there were as many matrices as attribute vectors in the original file. In the 2009–2011 peer-reviewed journal evidence matrix, for example, a value of 1 in the California/New York cell indicated that peer-reviewed journal evidence of student achievement gains in charter schools were present for both states during those years. Just as the dependent variable is a matrix of interstate convergence dyads, the independent variables are also made up of matrices of interstate attribute dyads.

The primary analytical objective in the analysis was to model changes in interstate convergent grant funding as a function of the independent dyadic variables. However, standard ordinary least squares (OLS) regression was not appropriate since by definition we could not assume the interstate dyads were independent observations but instead interdependent conditional on the row or column location. Krackhardt (1988) described this as a complex autocorrelation problem. While autocorrelation is typically a problem for time-series data, in the present analysis, Krackhardt argued that we can expect the error terms to be autocorrelated within the rows and columns of the matrix. In fact, Monte Carlo simulations demonstrate that Type 1 error rates skyrocket at even moderate degrees of autocorrelation (see Figure 2 in Krackhardt, 1988, p. 369). In the present analysis, the Durban-Watson test suggested significant evidence of autocorrelation, which means we needed an alternative estimation strategy to avoid an unacceptably high probability of Type 1 errors.

The standard practice for testing hypotheses with dyadic units of analysis—which is common in social network analysis—is quadratic assignment procedure (QAP) regression. QAP regression

allows researchers to model changes in dyadic dependent variables using dyadic independent variables while keeping Type 1 error rates at an acceptable level—even if autocorrelated errors are observed (see Figure 2 in Krackhardt, 1988, p. 369).[2] The procedure accomplishes this objective by using a permutation test that compares the observed correlation between matrices to that of thousands of permutations known to be independent due to the random rearrangement of one of the matrices (Borgatti et al., 2013). The ingenuity of the procedure is that since the permutation is a rearrangement of the original matrix, it retains the same properties (e.g., means).

We used QAP regression to test our model of interstate convergent grant funding on the 2012 and 2014 matrices.[3] The 2012 interstate convergence model was specified as follows:

$$Y_{ij} = B_0 + B_1 \left(non\ journal \right) + B_2 \left(peer\ review\ journal \right) +$$
$$B_3 \left(below\ basic\ NAEP\ 4th \right) + B_4 \left(below\ basic\ NAEP\ 8th \right) +$$
$$B_5 \left(startup \right) + B_6 \left(no\ caps \right) + B_7 \left(RTTT \right) +$$
$$B_8 \left(autoexempt \right) + B_9 \left(in\ state\ found. \right) + B_{10} \left(prior\ converge \right) + e_{ij},$$

where convergent grant funding (Y) between states i and j was regressed on the co-presence of: non–peer reviewed journal and peer-reviewed journal evidence, below basic proficiency on fourth- and eighth-grade NAEP scores, startup funds provided to charters, the absence of caps on charter school growth, receipt of RTTT funds, an in-state foundation, and frequency of prior interstate convergent grant funding. The model was tested in stepwise fashion beginning with the sources of evidence and supply/demand ($B_1 − B_5$), then policy context capacity ($B_6 − B_8$), and finally, resident foundation(s) and preexisting convergent grant funding activity ($B_9 − B_{10}$). The specifications were the same for the 2012 and 2014 models, but some variables were measured at different times. For example, in the 2012 model, we measured receipt of RTTT funds between 2010 and 2011, and for the 2014 model, we only looked at RTTT funds received between 2012 and 2013. Similar temporal adjustments were made for the evidence and NAEP proficiency variables.

Results

We begin with a descriptive look at the overall patterns of grant funding from the major foundations in our sample to charter school organizations. Figure 1 illustrates the changes in the distribution of total funds across the different types of charter school organizations. It is immediately apparent that the organizational priorities of these foundations shifted over time away from charter school funds and individual schools toward advocacy organizations and CMOs. The latter organizations received 26.9% and 30.0% of the total funds given by these foundations to charter school reform organizations in 2014—up from 12.2% and 19.9%, respectively, in 2009. The National Association of Charter School Authorizers ($5 million), California Charter Schools Association ($4.7 million), and Black Alliance for Educational Options ($3.5 million) were the top funded advocacy organizations in 2014, while the top CMOs included Building Excellent Schools ($12.9 million), Success Academy ($6.3 million), and KIPP ($3.5 million). However, some CMOs

have foundations and local operations. For example, in 2014, KIPP Foundation ($9.7 million) and KIPP's local CMOs (e.g., KIPP NYC) also received grants that brought the total KIPP funding to $13.5 million during that year alone.

While the total funding for advocacy organizations and CMOs grew to be greater than that of charter school funds and schools, individual organizations within the latter categories still received some of the largest amounts of funding overall and in 2014. For example, the Charter School Growth Fund received more grant funding than any other organization across all three years, with a three-year total of $45.6 million and $9.5 million in 2014 (third overall).[4] NewSchools Venture Fund was also among the most highly funded organizations overall, with $16.1 million in total funding and $3.6 million in 2014. Despite the substantial gifts these organizations received in recent years though, it remains clear that major foundations shifted their strategies toward building organizational capacity in the charter school advocacy sector and among CMOs. In contrast, these foundations gave very little to EMOs, which is expected since awards to for-profit entities would not count toward the minimum 5% payout of foundations' endowment value.

The geographic distribution of the funds awarded was highly concentrated, with 80% of the total funding across all three years being awarded to organizations in only 10 of the 39 states and District of Columbia. The tendency to increase funding to advocacy organizations and CMOs over time (see Figure 1) was generally consistent among each of these states.[5] The choropleth maps in Figure 2 illustrate overall (2a) and per charter school student (2b) funding aggregated across all three years. Some of the most highly funded states overall (2a) served the largest population of public school students (e.g., California, New York, and Texas), while other states receiving a large proportion of the awards served comparably smaller populations (e.g., Louisiana and Massachusetts). These same states were also among the most highly funded per charter school student (2b). Washington, D.C., received the highest amount of funding per capita, followed by Rhode Island and Massachusetts. Meanwhile, charter school organizations in 13 of the 39 states (plus Washington, D.C.)—one-third of states with a charter school law prior to 2009—did not receive a single grant during any of the three years under analysis.

Figure 3 adds greater context to the geographic findings by illustrating the number of years each foundation granted funds to at least one charter school organization in a given state. The rows and columns are sorted to show the foundations that tended to fund organizations in the same states while also illustrating the states where organizations received funding from the same foundations. Next to Walton's funding in 25 states (plus Washington, D.C.), what comes to the fore is the cluster of states—New York, California, and Louisiana—that shared a substantial portion of funders in common. There are a number of other states that shared two or three funders in common and many more that did not share any funders. Among the funders, Walton, Calder, and Gates were especially consistent in the geographic distribution of their support for charter school organizations. Broad, Dell, and Kellogg formed a second tier of foundations whose geographic activity in the charter sector was similar across these years. The remaining foundations focused
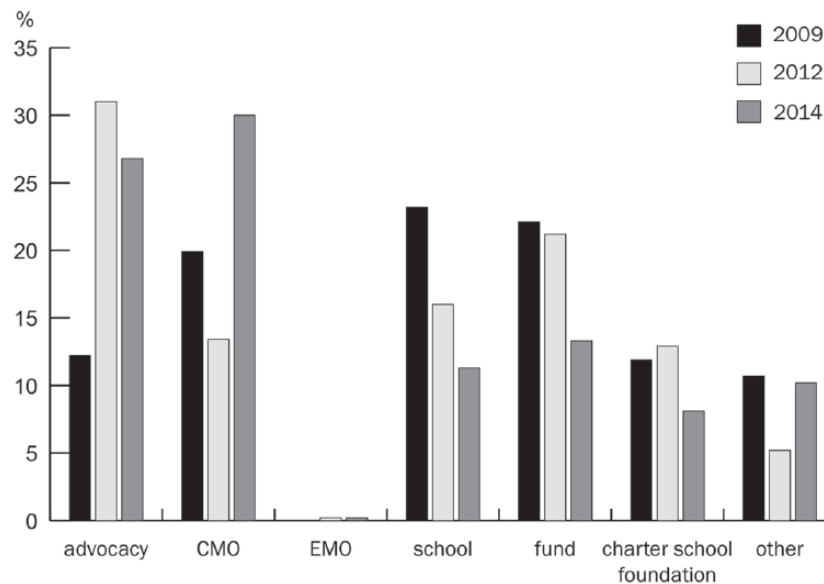
FIGURE 1. *Distribution of funding across categories of charter school organizations for 2009, 2012, and 2014*

primarily on one or two states in addition to the national-level organizations they may have funded (not shown in Figure 3).

It is clear from Figures 2 and 3 that foundations often shared geographic preferences in their support of charter school reform. But what draws foundations to fund organizations in the same set of states while excluding others? To gain insight into this question, we now turn to the QAP regression of interstate convergence. Table 1 provides the coefficients and standard errors in three blocks for the 2012 model, beginning with the evidentiary, supply, and demand variables, followed by the policy context variables, and finally, the measures of prior foundation activity (2009 convergence and in-state foundation).

In Model 1, both of the evidentiary variables were significant, indicating that 2012 interstate convergence was positively associated with evidence of charter school effectiveness appearing in both peer-reviewed journals and non–peer reviewed journal sources. About a quarter (4 of 17) of these sources of evidence were funded by one or more of the foundations in the sample.[6] However, by Model 2, only the non–peer reviewed journal variable was significant, which suggests the association of peer-reviewed journal evidence observed in Model 1 was mediated by policy contexts and preexisting interstate convergence. Meanwhile, on average, organizations in states that shared in common a below basic proficiency on fourth-grade NAEP scores in reading or math shared fewer foundations in common. This suggests that the foundations in the sample were less likely to converge in states where high demand for alternatives to low-performing public schools would be expected. However, there was no relationship at Grade 8, and by Model 2, the significance of Grade 4 scores disappeared. As a measure of supply, states that provide start-up funds for charters were not initially associated with changes in interstate convergence, but there was marginal evidence that supply was positively associated in Model 3 when controlling for all covariates.
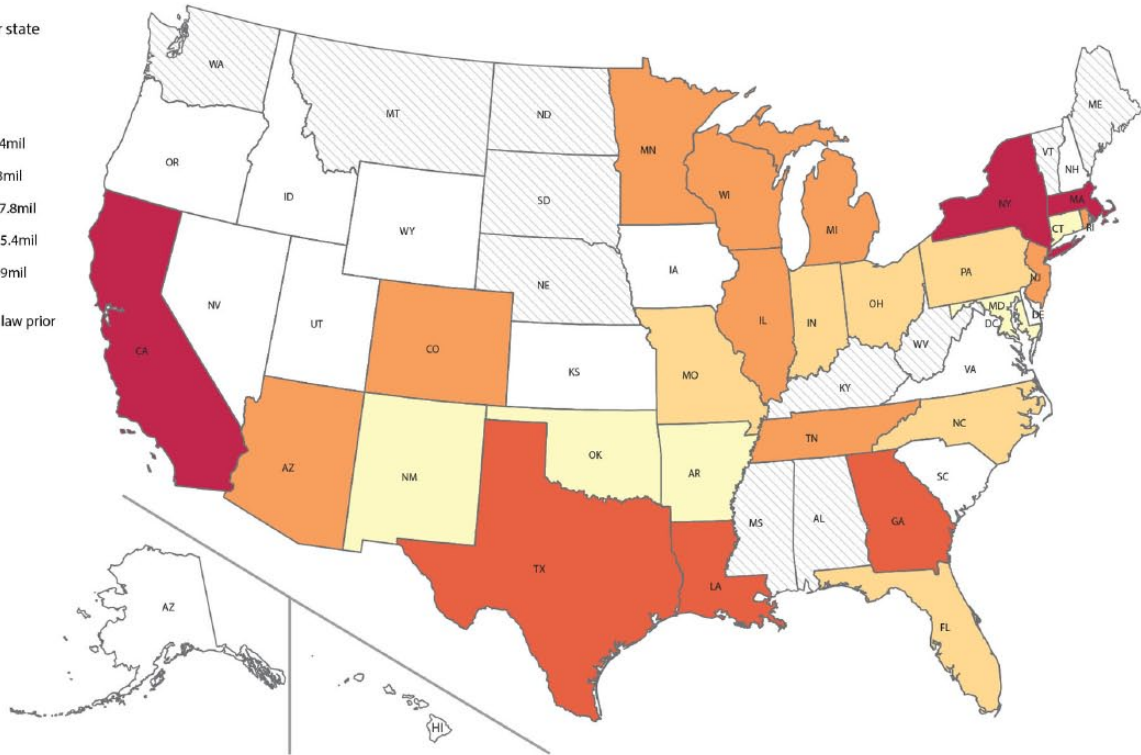
Among the policy variables added in Model 2, only the receipt of RTTT funding accounted for any variation in 2012

interstate convergence. The RTTT coefficient was positive, suggesting that states receiving these funds also attracted higher levels of interstate convergent grant funding than those states that did not receive RTTT awards. The positive coefficient observed in Model 2 decreased but remained significant in Model 3 after controlling for all covariates in the model. Since the removal of caps on charters was a key component of RTTT, controlling for the absence of caps means the positive association of RTTT funds serves as a proxy for broader support of major reforms. The coefficients for absence of caps on charters and automatic exemptions from collective bargaining agreements were negative but not significantly different from zero across Models 2 and 3.

Previous interstate convergence and the co-presence of an in-state foundation were both significant, as expected. In other words, the more foundations a pair of states shared in common in 2009, the more they tended to share, on average, in 2012 when controlling for all variables in the model. Once the 2009 interstate convergence and in-state foundation variables were included, the full model accounted for 58% of the variation in 2012 interstate convergence. This is nearly double the proportion of variation explained in Model 2 (0.30) and nearly triple that of Model 1 (0.20). Overall, previous interstate convergence (0.557) and co-presence of an in-state foundation (0.176) were the largest standardized coefficients in the full model, followed by RTTT funding (0.170) and non–peer reviewed journal evidence (0.150).

The results for the 2014 model of interstate convergence were similar to those in 2012 (see Table 2), but some notable differences were observed. First, both forms of evidence were again significant and positively associated with the number of foundations that states tended to share in common (and again, some of these studies were funded by the foundations in the sample). However, unlike the 2012 model, the coefficient for peer-reviewed journal evidence remained positive (and significant) through Model 2. None of the supply or demand variables were significant in any of the models.

2a. Dollars per state

Legend:
- 0
- $250k – $1.4mil
- $1.6mil – $3mil
- $3.4 mil – $7.8mil
- $11mil – $15.4mil
- $20mil – $49mil
- No charter law prior to 2009

2b. Dollars per charter school student

Legend:
- 0
- < $100
- $100 – $199
- $200 – $299
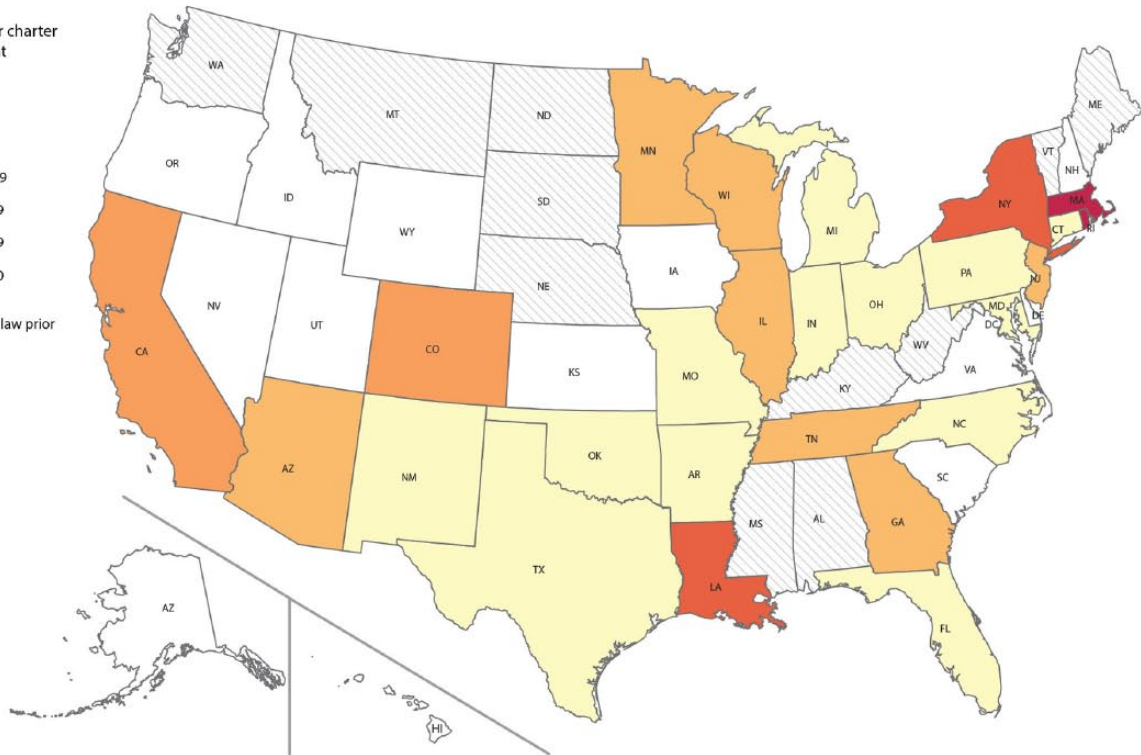- $300 – $399
- $500 – $700
- No charter law prior to 2009

FIGURE 2. *Choropleth maps showing geographic distribution of (a) total and (b) per charter school student funding aggregated across 2009, 2012, and 2014*

State dyads receiving RTTT funds from the later round of awards (2012–2013) were also positively associated with inter-state convergence in 2014 across all models. The coefficient for state convergence in 2014 across all models. The coefficient for the absence of charter caps was again negative, yet in the 2014 model, it was significant in Model 2 and appears to have been mediated through prior convergence. This suggests that in 2014,

FIGURE 3. *Foundation by state matrix showing geographic funding activity among the sample of foundations across 2009, 2012, and 2014*
Cell values range from 0 to 3 and indicate the number of sample years (2009, 2012, 2014) a foundation funded at least one organization in a given state.

foundations in our sample converged in states less frequently when those states did not have caps on charter schools. Finally, while still significant, the in-state foundation variable was negative in the 2014 model despite a positive bivariate correlation with the dependent variable (0.149, $p < .05$). When controlling for prior convergence in 2012, the co-presence of an in-state foundation was then associated with a decrease in interstate convergence in 2014. Once again, next to previous interstate convergence (0.726) and co-presence of an in-state foundation (−0.095), the co-presence of non–peer reviewed journal evidence (0.129) and RTTT funds (0.089) had the largest absolute standardized coefficients.

Discussion and Conclusions

Our primary objectives in this paper were to describe and model the interstate convergence of foundation grants to charter school organizations in the United States between 2009 and 2014. At the outset, we argued that a focus on interstate convergent grant funding was needed to better understand the strategies foundations pursue to influence charter school reform. This argument rests on the notion that the power of foundations is greatest when leveraged through affiliations with other funders rather than as individual organizations. Thus, our focus on modeling variation in the number of foundations that states shared in common allowed us to gain insights into why some foundations are concentrating on building organizational capacity in certain clusters of states and not others.

Our theoretical perspective assumed that the frequency with which states shared foundations in common covaried with multiple state-level attributes related to supply and demand,

evidence, policy, and prior funding affiliations. Overall, we found some evidence supporting each dimension of our theoretical model. First, we found support for our hypothesis that foundations converged in states where evidence from studies—some of which were funded by the foundations in our sample—suggested charter schools were associated with positive student achievement outcomes. Although evidence from peer-reviewed journals appeared to have been mediated through prior funding activity, evidence appearing outside of academic journals was consistently significant (and of larger magnitude) when controlling for all variables in the 2012 and 2014 models. This finding was anticipated by previous research that has explored the use of research in education policy (Goldie et al., 2014). One possible reason why peer-reviewed journal evidence emerged as a more consistent finding in the 2014 model is the proliferation of such studies in recent years. Whereas reports disseminated outside of academic journals (e.g., CREDO) garnered substantial attention in 2009 and 2010, more recent peer-reviewed studies using lottery designs and other robust methods may be penetrating these echo chambers and having a more direct influence on foundations' policy decisions.

We also saw that features of the policy climate in states were associated with changes in the frequency of interstate convergent funding patterns. Most notably, states that received RTTT grants during both time periods under analysis shared more foundations in common when controlling for all other covariates in the models. Thus, foundations tended to converge in states that had been awarded federal funds to, among other things, expand school choice options. These federal investments in states working to bolster jurisdictional challengers further leveraged the power of foundations interested in promoting charter school reform (Mehta &

Table 1
Quadratic Assignment Procedure Regression of 2012 Interstate Convergence on Forms of Evidence, Supply and Demand, Policy Contexts, and Prior Funding Activity

	Model 1		Model 2		Model 3	
	B	*S.E.*	*B*	*S.E.*	*B*	*S.E.*
Intercept	0.386***	0.000	0.291***	0.000	0.066***	0.000
2009–2011 non–peer reviewed journal evidence	0.946***	0.211	0.933***	0.188	0.395**	0.122
2009–2011 peer-reviewed journal evidence	0.523*	0.239	0.239	0.213	−0.079	0.155
2011 below basic proficiency, Grade 4	−0.228*	0.143	−0.147	0.130	−0.078	0.090
2011 below basic proficiency, Grade 8	0.095	0.158	0.064	0.142	0.014	0.099
State start-up funds for charters	0.139	0.142	0.107	0.129	0.130~	0.091
No charter caps			−0.119	0.140	−0.048	0.096
2010–2011 Race to the Top funding			0.553***	0.148	0.290**	0.100
Automatically exempt from collective bargaining			−0.009	0.127	−0.052	0.092
2009 interstate convergence					0.645***	0.092
In-state foundation					0.640***	0.142
r^2	0.20		0.30		0.58	

Note. ~$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 2
Quadratic Assignment Procedure Regression of 2014 Interstate Convergence on Forms of Evidence, Supply and Demand, Policy Contexts, and Prior Funding Activity

	Model 1		Model 2		Model 3	
	B	*S.E.*	*B*	*S.E.*	*B*	*S.E.*
Intercept	0.291***	0.000	0.323***	0.000	0.124***	0.000
2012–2013 non–peer reviewed journal evidence	0.872***	0.154	0.810***	0.142	0.227**	0.085
2012–2013 peer-reviewed journal evidence	0.978**	0.230	0.914**	0.211	0.125	0.143
2013 below basic proficiency, Grade 4	−0.134	0.118	−0.098	0.108	−0.007	0.073
2013 below basic proficiency, Grade 8	−0.054	0.173	−0.096	0.164	−0.014	0.105
State start-up funds for charters	0.121	0.118	0.104	0.114	−0.032	0.074
No charter caps			−0.172*	0.109	−0.069	0.070
2012–2013 Race to the Top funding			0.341*	0.138	0.177*	0.089
Automatically exempt from collective bargaining			−0.050	0.113	0.023	0.075
2012 interstate convergence					0.684***	0.076
In-state foundation					−0.325**	0.116
r^2	0.35		0.39		0.68	

~$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Teles, 2012). In fact, these investments emerged as the most important facet of the policy contexts measured in our analysis. In this sense, we can see how, intentional or not, the federal government and foundations worked in concert to advance charter school reform. Future research should attempt to address this question causally to gain insight into the ways policy can influence how private wealth shapes public education.

Finally, prior affiliations in states were evidently a driving force in interstate convergent funding of charter school organizations. In both models, these affiliations explained a substantial portion of the variation in the patterns of interstate convergence. This suggests that foundations working to build the organizational capacity of charter schools look across multiple states to existing investments and infrastructure established by other foundations (Tompkins-Stange, 2016). This practice likely reduces the uncertainty of investing in a contentious policy domain (Reckhow, 2010), an insight anticipated by new institutional theorists (DiMaggio & Powell, 1983). At the same time, we saw that this practice came at the expense of other states where charter school organizations received little to no financial support from our sample of major charter school donors. Future research should examine how this geographic inequality is impacting charter schools and associated organizations—especially in states where local organizations do not receive any support from major foundations. This is especially important given that many of the states that received little to no funding were also among the lowest ranked states according to *The Nation's Report Card* (Institute for Education Sciences, 2013).

The findings that emerged from our analysis provide important insights for policymakers and researchers paying attention to the ways that private wealth is shaping public education in the United States. Foundations have historically played an influential role in constructing and transforming the education system, but a new wave of philanthropists are implementing strategies previously unseen in the education sector (Colvin, 2005; Saltman, 2010; Scott, 2009). Thus, we argue in closing that more work is needed to uncover the economic, political, and social processes driving these decisions, especially as they relate to partnerships between private foundations and publicly elected governing bodies (Tompkins-Stange, 2016). These relationships blur the boundaries of public and private and suggest the need for new ways of fostering a robust public education system in an era of intensifying private investment.

NOTES

[1]Form 990s were gathered from the Foundation Center (http://foundationcenter.org/findfunders/990finder/) and Economic Research Institute (http://www.eri-nonprofit-salaries.com/?FuseAction=NPO.Search).

[2]The analysis was first run using UCINET software (Borgatti, Everett, & Freeman, 2002) and was retested in R (R Development Core Team, 2008) using the SNA package (Butts, 2008). Both programs produced identical results.

[3]We estimated the model using ordinary least squares (OLS) and compared the results to quadratic assignment procedure (QAP) regression. As anticipated given the evidence of autocorrelation, the standard errors in the OLS model were smaller and resulted in a greater number of significant coefficients than in the QAP regression.

[4]All amounts are expressed in 2014 inflation-adjusted dollars.

[5]Some exceptions were observed. For example, the funding in Texas followed a similar pattern of increased awards to advocacy organizations over time. However, unlike the aggregate pattern, funding to charter management organizations (CMOs) disappeared after 2009 and increased for individual charter schools.

[6]As suggested by one of the reviewers, there may be a feedback loop in which foundations fund the research evidence that drives their subsequent investment. While there was a weak correlation between 2012 convergence and research sponsorship by foundations (0.071, $p <$ .10), the variable was not significant in the model.

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APPENDIX

A: Sample of Foundations Included in the Analysis (State Location of Headquarters)

1. Bill and Melinda Gates Foundation (WA)
2. Eli and Edythe Broad Foundation (CA)
3. Carnegie Corporation of New York (NY)
4. Michael and Susan Dell Foundation (TX)
5. William and Flora Hewlett Foundation (CA)
6. Ford Foundation (NY)
7. James Irvine Foundation (CA)
8. Ewing Marion Kauffman Foundation (MO)
9. Louis Calder Foundation
10. Joyce Foundation (IL)
11. Silicon Valley Community Foundation (CA)
12. Wallace Foundation (NY)
13. Walton Family Foundation (AR)
14. W. K. Kellogg Foundation (MI)
15. Robert W. Woodruff Foundation (GA)

B: Sources of Evidence of State-Level Charter School Effectiveness, 2009–2013

2009

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