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ABSTRACT

Do High Schools Choose Financial Education Policies Based on Their Neighbors?

Financial Education courses required for high school graduation make a difference in students' future financial lives. Given that schools exercise local control, there are a variety of types of courses offered and required by US high schools. It remains unclear why and where this variation exists. Using a novel data set of unique high school personal finance course offerings and requirements paired with distances between high schools in the US, we approximate a network of nearby peer high schools. We use this network of peer schools to measure the potential influence of nearby schools on an individual high school's decision to offer financial education courses. We find that high schools are more likely to require or offer financial education courses similar to those of their peer schools. Having an additional peer that incorporates financial education into their curriculum makes it more likely a high school will change their curriculum to do the same. This is true across types of courses: required standalone courses, required courses that incorporate but do not solely focus on personal finance, and standalone electives. The results indicate that schools' nearby peers are related to what types of services to offer their students, and these networks are more predictive than economic or demographic characteristics of the school in determining personal finance course requirements. Local networks can potentially provide momentum in expanding access to financial education.

JEL Classification: G53, I20, L14
Keywords: financial education, financial literacy, networks

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1. Introduction

In 2019, a quarter of Americans had no retirement savings, 40% were one missed paycheck away from poverty, and 20% of student loans were in default (McCarthy, 2019; Picchi, 2019; Group, 2020). The Coronavirus pandemic and recession have not improved these statistics. The difficult financial conditions of these Americans create a burden on society and improving it would increase both individual (Cottle Hunt and Findley, 2020) and aggregate welfare (Lusardi and Mitchell, 2014). Early financial education may be an important tool in accomplishing this.

A 2020 meta-analysis of all randomized controlled trials finds that financial education improves both financial knowledge and financial behaviors in a cost-effective manner (Kaiser et al., 2020). A growing body of literature also shows the promise of financial education in high schools. For example, Frisancho (2020) shows in a wide-scale experiment that financial education in secondary schools in Peru improved student knowledge and behavioral outcomes, as well as teachers' outcomes. Bruhn et al. (2016) uses an experiment in Brazilian schools to show that high school financial education not only improves outcomes for students but also that it has trickle up effects on parents. An additional literature considers quasi-experimental variation in graduation requirements by state and year. This research finds overwhelmingly positive effects of financial education on financial behaviors, including credit scores, delinquencies, payday borrowing, methods of financing postsecondary education, and student loan repayment (Mangrum, 2019; Urban et al., 2020; Stoddard and Urban, 2020*b*; Brown et al., 2016; Harvey, 2019). Though some states require personal finance instruction in high school, schools in the US largely operate with local control. Understanding how local high schools make decisions on whether and how to integrate personal finance instruction remains important. Research suggests that economic agents, including individuals (Harris, 2010), firms (Adhikari and Agrawal, 2018*a*), and colleges (Zhang, 2020) look to their peers to make important decisions. Do high schools do this in determining their financial education policies?

We find evidence that high schools are influenced by their local peers when deciding on a type of financial education. If a high school has a neighbor that offers a particular type of financial education course in the 2019 - 2020 school year, it is more likely that the high school offers that same type in the 2020-2021 school year, even after controlling for differences in statewide policies, school years, and school characteristics. For each of five financial education class types, having one more neighbor within ten miles implementing that type in the 2019-2020 school year, there is an increase of between 7 and 15 percentage points in the likelihood that a school will then offer that

same type in the 2020 - 2021 school year.

We use a novel data set describing the types of financial education courses offered at every high school in the US. The set of high schools are broken into six categories: those that require a standalone financial education course, those that require financial education material be embedded into existing courses, those that offer a standalone financial education course, those that offer a course with embedded financial education material, those with no financial education requirements or offerings, and those without online course catalogs. This information is recorded for the 2019 - 2020 school year and for the 2020 - 2021 school year. This data set also includes characteristics of the schools including the physical address, student-teacher ratios, and student demographic information. We use the physical location information to find the distance between each pair of schools in every state. We use this distance information to construct a network of local peers or "neighbors." For each school in the data set, we define a *neighbor* to be any other school within ten miles. This rich data set allows us to use a fixed-effects regression framework to capture the effects of high school's peers above and beyond any statewide trends.

Having one more neighbor that offers one of the five types of financial education courses makes it more likely that a high school will offer that type of course. For example, if a school has a neighbor that requires a standalone financial education course in the 2019 - 2020 school year, the likelihood that that school has a standalone financial education requirement in 2020 - 2021 increases by 7 percentage points. This effect is evident in both cities and in more rural schools, although it is more pronounced in cities. These results are robust to broader definitions of peers, leaving one state out of the analysis at a time, and survives a placebo test using all neighbors within *thirty* miles.

This paper contributes to the growing literature that analyzes the role that the connections that exist between peers play in economic decisions. It is well established that individuals look to their peers when making financial, political, and educational decisions. For example, Bursztyn et al. (2014) identify the effect that learning from one's peers has on asset acquisition, while Beshears et al. (n.d.) demonstrate the effect of peers on retirement savings. Additionally, Harris (2010) shows that students' peers affect their educational achievement and Bode (2016) shows that social media peers influence political opinions. There is growing evidence that other economic entities, such as firms, look to their peers when making decisions. There is evidence that individuals look to their peers when making financial decisions. Both Adhikari and Agrawal (2018*b*) and Chen, Chan and Chang (2019) find that firms' payout policies and cash holdings are influenced by what they observe in their peers' decisions. This paper expands this literature to include schools.

This research indicates that high schools are influenced by their neighboring peers when making important policy decisions. Above and beyond being subject to similar local regulations, schools appear to be influenced by schools that they are connected to. This suggests that targeted policy interventions can be made more efficient by implementing them in hub high schools, that is, schools that are connected to many other schools.

2. Background

While state policies from departments of education often legislate course requirements, high schools in the US remain dominated by local control. This means schools often interpret and implement these policies at their own discretion. In this section, we explain what personal finance education looks like. We then introduce our novel high school-level financial education data, where we hand-collect two years of data on personal finance course offerings and requirements for every public high school that has an online course catalog in the US. We then use data from the US Department of Education's National Center for Education Statistics (NCES) to determine which high schools are neighbors, and define neighbor-schools' policies. Finally, we explain the landscape of state policies on financial education instruction and how those policies influence our sample.

2.1. What happens in personal finance courses?

Personal finance courses in high school are largely designed to help teens approaching financial independence to make informed financial decisions. This means that courses incorporate timely information for students. For example, standalone personal finance courses often include units on formulating a budget, determining monthly earnings in specific occupations, paying taxes, understanding credit scores, comparing loan options, understanding high-cost debt (such as credit cards and payday loans), methods to finance postsecondary education and training, and savings and investing.

While standalone personal finance courses are relatively homogeneous in the topics they cover across schools, there are a variety of other ways to incorporate personal finance into the classroom. For example, in some schools, personal finance is embedded into another subject. This could be math, economics, American Government, or a variety of other courses. When personal finance is included within another class, the topics that are covered often vary. For instance, comparing loans

with different interest rates may work well in a math course, but learning about methods to finance postsecondary education may not fit as well into a math curriculum. Similarly, budgeting goes hand-in-hand with an economics course, but it may not fit as well into an American Government class.

In constructing our high school data, we include every class that incorporates personal finance in some way. Figure A.7 makes a word cloud of the descriptions of these courses. At its core—as with most education—are students. Other common themes include insurance, banking, economics, taxes, finance, credit, insurance, planning, and resources.

2.2. High school-level data

This study uses hand-collected data for the 2019-2020 and 2020-2021 academic years among all US public schools that have online course catalog data.

To begin, we obtained the master list of public high schools from NCES from the most recent year available.[1] This means for the 19-20 AY, we had the NCES school catalog for 2016-2017 and for the 20-21 AY, we had the NCES catalog for 2017-2018. This means that schools could have closed or opened over time, though we expect this to be random and uncorrelated with personal finance policy. Table A.6 lists the total number of public high schools by state, as well as the number of schools in the state we were able to extract course catalog data from.

From the master list, a team of research assistants hand searched for a course catalog and graduation requirements for each school. If a catalog was not current and was the only one listed on the website, we assume that the courses have not changed. Research assistants coded each course offered and required for each school, including a course name, course description, the duration of the course, whether or not the class was solely focused on personal finance,[2] and whether or not it was an elective[3] or required class. We retained a link to the course catalog in the raw dataset. Schools were also labeled as having no requirements or offerings if that was clearly the case. However, if there were course catalogs that did not include financial literacy—or other typical classes that often included financial literacy—but had electives that were without descriptions, we coded them as

[1]Because of our focus on public schools, we removed charter schools, technical schools, magnet schools, schools for the sensory impaired, alternative schools, online schools, early college schools, and performing arts schools.

[2]If a class incorporated personal finance into another subject but was a year-long course, we coded this as the same as a one-semester standalone personal finance course.

[3]We excluded special education courses and other courses with special requirements to get in. For example, ROTC courses and classes far along a "career pathway" with prerequisites not required for graduation are not categorized as electives, as they are not open to all students.

missing and not as having "no requirements."

When the data from the 19-20 AY were completed, the data for 20-21 AY were created by (1) checking and updating the schools from the 19-20 data and (2) creating a list of new schools from the NCES master file and a list of schools for which we were unable to construct data in 19-20 AY. This led to 956 additional schools in the 20-21 AY dataset. The final dataset includes 7,466 schools for 19-20 AY and 8,422 schools for 20-21 AY.[4]

From this hand-collected dataset, we code the maximum requirement/offering in each school from most to least rigorous as follows: Standalone requirement (Category 1), embedded requirement (Category 2), standalone offering (Category 3), embedded offering (Category 4), no requirements or offerings (Category 5), and no online course catalog data (Category 6).

Figure 1 shows the average prevalence of each category among all schools with data in 19-20 AY (top panel) and 20-21 AY (bottom panel). Across the two years, there was an expansion in standalone requirements from 13% to 16%, and a slight decrease in standalone course electives and electives where personal finance is embedded but not the main focus of the course. There was no overall change in the fraction of schools with no requirements or offerings. Recall that there are 956 more schools in the 20-21 data, expanding the sample. The most common standard is to offer a semester-long elective that solely covers personal finance topics (43% of schools in 20-21 AY). To depict the geographical spread of the five policy categories, we map the policies in Figure 2. One can see the colors are well-dispersed around the country.

Collecting data based on online course catalogs generates a specific sample. In Table A.1 we discuss further schools for which we do and do not have personal finance course data in each year. The sample of missing schools has a higher fraction of Black students, a higher fraction of Hispanic students, and a higher fraction of students receiving free or reduced-price lunch. The missing schools are located in areas with lower median household incomes, lower house prices, and more rural areas or more urban areas (as opposed to suburbs). While we think it is limiting to not have full representation of schools' policies, the way we design our network measure will allow each school's network to have an influence on its policy. We argue that schools that have online course catalogs are more salient in advertising the classes they have, allowing neighbors to piggy-back on their choices. If schools without online course catalogs are choosing the same policies as their neighbors at higher (or lower) rates, this could bias our estimates. We expect this behavior to be somewhat uncorrelated with whether or not they choose neighbors' policies. Thus, it will likely

[4]The raw data can be found at `www.carlyurban.com/home/financial-education`.

only generate classical measurement error.

We additionally explore the extent to which having schools with online course catalogs in a high school's peer network influence the likelihood that the school posts an online course catalog. Table A.2 shows these associations. Schools who have neighbors in a 10 or 20 mile radius with online course catalogs in the previous year (Columns (1) and (4)) are almost 30 percentage points more likely to have an online course catalog themselves. For the purpose of our analysis, we can only consider schools changing policies based on information from online course catalogs. We think this is a plausible assumption, as an online course catalog is a salient document that other schools can easily adopt. While other channels exist, such as direct conversations during extracurricular events, the measure we have is concrete and signifies a greater commitment to the policy than word-of-mouth.[5]

One could be concerned that policies are decided at the school district-level, as opposed to the individual high school-level. In our data, 55 percent of high schools are the only high school in the school district. The data collection process taught us that even within school districts, individual high schools select their own course offerings and requirements with respect to financial education. In Figure A.1, we show that within each school district size, the average number of policies across the five categories varies.[6] Thus, there is not one specific policy for the entire school district.

We next build our network measures to determine the peers of each high school. We begin with the specific address of the school (not the mailing address) from the NCES data. We then develop a distance matrix between each school within a given state. We create two measures of "neighbors" based on a 10 mile and 20 mile radius. Table 1 shows the number of neighbors within a 10 and 20 mile radius, disaggregated by the policy of the individual school. On average, schools have 12 neighbors within a ten-mile radius. However, not all schools have online course catalogs. Table 1 also gives the number of neighbors for which we have online course catalogs. While slightly lower, the average school has 7 neighbors with data in a ten-mile radius.

2.3. State high school-level financial education policy

Personal finance instruction in high schools is sometimes dictated at the state-level. States generally have five takes on personal finance instruction, as outlined below.

[5]We omit the District of Columbia, as DC is only 10 miles across. Thus, all schools would be in the same peer network.

[6]Our results are substantively similar when we only include high schools that are the lone school in the district.

1. Require a full-semester personal finance course for graduation.
2. Require personal finance to be embedded into another course that is required for graduation.
3. Require personal finance be taught within a greater content area (e.g., Math, Social Studies, etc.).
4. Require specific personal finance standards to be included in any course, at the school's discretion.
5. Silent on personal finance instruction.

As of the spring of 2020, five states (Alabama, Missouri, Tennessee, Utah, and Virginia) required that all students complete a standalone personal finance course prior to graduating from high school. When collecting high school-level data, all of the schools within these states followed the state requirements and required a full-semester personal finance course prior to graduation. Thus, we chose to remove these states from our analysis, as there is no variation in local policy.

However, 16 states require personal finance to be included in another course, content area, or standards ((2)-(4) in the above list).[7] In practice, not all schools follow the state policy. In the 20-21 AY, only 39.8% of schools with online course catalogs in these states had an embedded or standalone requirement (Category 1 or Category 2). This would be the required policy to meet the state requirements. While it is far from full compliance, it is still higher than states that do not have requirements. In the 20-21 AY, 25.3% of schools with online course catalogs had an embedded or standalone requirement (Categories 1 and 2).

There are two states that are currently transitioning to standalone course requirements: Iowa and North Carolina. Since these states are still in the process, not all schools have reached Category 1 levels. In Iowa, 65.8% of schools have standalone requirements, and in North Carolina, 37.8% of schools have standalone requirements. Since these states are in a different part of the process, we drop them in some specifications to show that our results are not coming from efforts on the ground to conform to the state mandate. Since there may be other idiosyncratic factors about states that may drive our results, we will provide a leave-one-out approach dropping each state one at a time to make sure our results are not driven by any one state.

Figure 4 maps the ZIP codes where at least one school changed their policy (top panel) and at least one school changed to a greater requirement (bottom panel) from 19-20 to 20-21 AYs.

[7]For more on these state policies, see `www.carlyurban.com/home/financial-education`.

As discussed above, there are large expansions in both Iowa and North Carolina. Otherwise, the changes appear to be dispersed evenly across the country.

In Table 2 we examine the correlates of who has a policy that requires personal finance instruction, who changes their policies over the two years, and who changes to a more intensive personal finance policy. The dependent variable in Columns (1)-(2) is whether or not the school requires personal finance content to be completed prior to high school graduation (pooling Categories 1 and 2 for simplicity) in AY 20-21. Column (1) includes variables that pertain to the state graduation requirements, including State Reqmt—a variable that reflects whether or not the state requires personal finance content in some way—and Mandate State—a dummy for the two transitioning states, IA and NC. Column (1) shows that schools with higher student-teacher ratios and higher fractions of students receiving free or reduced-price lunch (a common proxy for poverty), are negatively correlated with requirement, though the magnitude of this correlation is close to zero.[8] The two state policies are important in determining requirements, and including state fixed effects (Column (2)) further reduces the statistical and economic importance of all other covariates. This suggests that schools' decisions on personal finance requirements are somewhat random when considering economic and demographic factors.

In Columns (3)-(4) of Table 2, we consider who changed their policy from 19-20 to 20-21. Column (3) suggests that states with embedded requirements are less likely to change, and the transitioning states are most likely to change. The coefficients from Column (4) suggest that once state fixed effects are added, economic and demographic characteristics are not predictive of who changed policies. If we instead consider who changed to a more intensive personal finance policy, we see that the two states transitioning to standalone course requirements were more likely to upgrade to more personal finance instruction, whereas economic conditions are again not very predictive.

2.4. State examples

In Figure 3 we display two example states for the 2020-2021 AY: Maryland and North Carolina. We use these states as the population is dispersed throughout in a way that schools are not overlapping and thus more difficult to visualize. We additionally include North Carolina since it is one of the states with the most changes over the two years and has interesting policy change. Each color represents a different policy and the size of the circle represents the student enrollment size in

[8]For example, a one unit increase in the student-teacher ratio is associated with a 0.03 percentage point increase in the likelihood of having a requirement.

the school. In both states, there are clear geographic clusters in the policy choices of schools. In Maryland (the top panel), the colored bunching is clear. The schools with standalone requirements (green) are clustered near the north central, south central, and western part of the state. It is rare to see one standalone course requirement without more schools in the area having the same policy. Schools with embedded requirements (orange) are at the most southern tip of the state, and a large cluster of central schools offer but do not require a standalone course in personal finance.

The geographic spread of policies in North Carolina (bottom panel) is also clear. There are clear clusters of standalone requirements (green) and embedded requirements (orange). Recall that North Carolina is transitioning to a standalone course requirement. Even so, neighbor policies seem very important for adoption.

2.5. Potential mechanisms

There could be several reasons to suspect that financial education policies are closely related within geographic areas. First, parents or school board members could see that nearby schools are offering personal finance classes and want that for their children/student body. If this is the case, they may then lobby their local high school to add the course to the school's offerings.

Second, teachers may interact with other teachers from local high schools, either through extra-curricular school-based activities (e.g., sports, debate team, etc.) or through their own personal social lives. This could result in discussion about new policies or courses others are interested in teaching. There is reason to suspect that schools with online course catalogs and listed graduation requirements will be easier to replicate, as teachers can then take this documentation directly to their superiors if they have interest in adding a requirement or elective.

Third, the students themselves may check nearby high schools to see what course offerings exist elsewhere and may demand personal finance instruction. Indeed, there is reason to believe that high school students want to learn more about how to manage their financial lives, and learning that other friends or relatives have access to these courses when they do not may cause them to lobby within their own schools.

3. Empirical Model

We use our school-level policies to see how schools are influenced by peer personal finance course decisions. Our main independent variable is whether or not any school in a 10 mile radius has a Category i policy and zero otherwise. For robustness, we will also use the 20 mile radius measure and a measure that captures the fraction of schools in the given radius with Category i policy. We will use 19-20 AY neighbor policies for our main independent variable and 20-21 AY own policies for our main dependent variable of interest. This means that intuitively, we are comparing those with neighbors that have no different sets of personal finance policies and those with either no neighbors, or no neighbors with a specific personal finance policy.

Our baseline model is in Equation 1. The dependent variables will each be a dummy variable representing whether or not school j in state s and academic year t had maximum standard Pi, where we have five separate dependent variables for all five standards. $C1_{j,s,t-1}$ through $C5_{j,s,t-1}$ are dummy variables equal to one if any neighbor school has a category i policy, and zero otherwise. While we report the coefficients on all α_1 through α_5, the coefficients on the categories that match the dependent variable's category are of most interest. For example, when P1 is the dependent variable, we are most interested in the α_1 coefficient.

$$Pi_{j,s,t} = \alpha_0 + \alpha_1 C1_{j,s,t-1} + \alpha_2 C2_{j,s,t-1} + \alpha_3 C3_{j,s,t-1} + \alpha_4 C4_{j,s,t-1} + \alpha_5 C5_{j,s,t-1} (+\beta X_{j,s,t}) + \gamma_s + \epsilon_{j,s,t} \quad (1)$$

In a second specification, we include controls ($X_{,s,t}$), including the number of total neighbors, student-teacher ratios, expenditures per pupil, the fraction of Black students, the fraction of Hispanic students, the fraction of white students, the fraction of students receiving free or reduced-price lunch, median household income, median home values, and dummies for rural and urban areas (where the excluded group is suburban). These come from NCES' Common Core of Data (CCD).

While our main specification considers school's personal finance policies in 20-21 AY based on neighbor policies in 19-20 AY, we provide additional specifications that consider same-year relationships. We will provide robustness to our main independent variables of interest by instead measuring the percent of neighbors in each category in the 10 mile radius. We will also replicate all of our measures with a 20 mile radius.

For our main results, we run a linear probability model (LPM) for ease of interpretation, though

Table A.5 shows that our results are similar when we report the marginal effects from a probit model. We cluster our standard errors at the state level, since states have unique educational policies.

4. Results

We begin with our baseline results in Table 3, focusing in particular on the top panel that shows the lead model. Each dependent variable in Columns (1)-(5) is equal to one if school has the given personal finance standard and zero otherwise. Recall that the categories are progressively more intensive, with five being the lowest and one being a standalone personal finance course requirement. In Column (1), we see that having one more neighbor within a ten mile radius that has a personal finance standalone course as a graduation requirement in 19-20 AY is associated with a 7 percentage point increase in the likelihood that a school has that same policy in 20-21 AY. At the same time, each of the other categories are negatively associated with having a standalone course requirement.

Taking a greater look at Table 3, it is apparent that the diagonal of the table is positive and economically meaningful across all categories, while the other cells are either close to zero in magnitude or negative. The diagonal is almost always statistically different from zero, with the exception of Category four—offering an elective with personal finance content included but not the focus of the class. This may be the least salient policy and may often happen by accident, or at least with less intentionality of teaching personal finance at the school-level than the other categories.

In Figure 5, we plot the coefficient that matches the dependent variable (e.g., the diagonal from Table 3, or α_1 for $P1$,...,α_5 for $P5$). We first plot the baseline from Table 3 (blue triangle), then a specification with control variables for local demographic and economic characteristics and the amount of neighbors (orange diamond), dropping the states transitioning to new mandates (green circle), and instead using neighbors within 20 miles (black x). Results remain consistent across specifications. It appears at first that the relationship is strongest for Category 3—having a full-semester personal finance elective. However, as a percentage of the total schools in 19-20 AY with that maximum standard (4), this association represents 35.7% of the mean. In contrast, the relationship for Category 1—having a standalone course requirement represents 57.3% of the mean level in 19-20 AY.

Throughout all specifications in Figure 5 we see no relationship between having a neighbor

with a maximum standard in Category 4 and a school's own choice of Category 4—an elective embedding personal finance into another course.

The results thus far have pointed to a network effect in personal finance instruction, where neighbors influence peers' decisions. To try to gauge more of where our effect is coming from, we consider the difference between schools in urban areas and rural areas. We suspect that there may be more interaction among schools in more dense areas and perhaps more collaboration than in more rural areas.

Figure 6 shows the effects for what we label as city schools (categorized as city in the CCD) in the top panel and rural schools (categorized as town or rural in the CCD) in the bottom panel. Indeed, the correlation between peer personal finance choices and own personal finance choices is larger in city schools than rural schools.

4.1. Robustness

We next probe the sensitivity of our main results.

The bottom two panels of Table 3 show that our results are robust to—and even larger than —considering the same-year correlations between school's own personal finance policies and neighbor policies. We show additional robustness to this specification in Figure A.3 and Figure A.4.

In Figure A.2 and Table A.3, we show that our results are consistent if we instead use a measure that reflects the fraction of schools in one's 10 mile radius that have a given policy (instead of any). Further, Table A.4 shows that our results are also robust to using a measure of the total number of schools in one's peer network that have a given policy.

Table A.5 documents that our result is not being driven by functional form. The marginal effects from a probit specification are similar in size and statistical significance to the LPM coefficients.

In the event that one state is driving our results with unique educational policies that generate clustering, we drop each state one at a time in a leave-one-out approach. After we run each of our five regressions dropping each of the 43 states in our analysis one at at time, we plot the density (a traced histogram) of the estimates in Figure A.5. The dotted vertical line for each of the plots is the baseline effect from Figure 5 (these are also the diagonal of coefficients from the top panel of Table 3). Each color corresponds to a category. The results from Figure A.5 suggest that dropping any state does not influence the estimates of α_i. In all cases, the estimates are larger than zero, similar to the average effect, and centered on the average effect. This provides confidence that one

individual state is not over-contributing to the estimates.

4.2. Placebo test

To ensure that the correlations presented are not an anomaly, we do a placebo test based on a random sample of faraway neighbors. "Placebo neighbor" schools are at least 20 miles away from the given school, where we force the same number of "placebo neighbors" as the school had actual neighbors. We then randomly select schools from the pool of potential distant (geographically) schools. We do not select only neighbors that have course catalog data, but we allow neighbors to be any far-away schools.

Figure 7 shows the results from our placebo test. We additionally provide a model with controls and dropping new mandate states, but we no longer retain the 20 mile measure, since this is no longer relevant now that all "placebo neighbors" are farther than 30 miles away. All coefficients are small in magnitude, and nearly all are statistically indistinguishable from zero. This provides evidence that our correlations are a function of proximity and not simply based on something else within the state.

A concern may be that our data represent only schools with course catalogs. It could then be a choice in itself for schools to post an online course catalog. We add schools to the sample who have no online course catalogs and consider their decision to not have any "recorded" standards in personal finance, coding all P1 through P5 dependent variables to equal zero for these schools. The independent variables are constructed exactly the same for all schools (based on neighbors' policies). Since the means of the dependent variables are much smaller now including these schools, we rescale our axes. In Figure A.6, our results appear muted but still positive. Taking the case of Category 1, having a neighbor with a standalone personal finance course requirement is associated with a 1.8 percentage point increase in a school adopting a standalone course requirement. With only 8.3% of schools that are labeled as Category 1 when including schools without online course catalogs, this correlation is still 21.7% of the mean level.

Thus, the takeaway from our findings remains that personal finance policies can spread locally and rapidly.

5. Conclusion

This research suggests that local high schools select whether or not to offer or require personal finance coursework based on their neighbor schools' policies. Having a neighbor within ten miles that had a standalone personal finance course requirement last year is associated with a 7.5 percentage point increase in the likelihood that an individual school adopts a standalone course requirement the following year. Our findings extrapolate to other types of personal finance policies: requiring a course that includes but is not entirely focused on personal finance, offering a standalone elective in personal finance, or offering a class that embeds personal finance into another topic. Our findings are robust to a variety of alternative measures of neighbors and policy choices within the network.

This paper finds that geographic proximity is important in understanding takeup of school-level educational policies. This suggests that potentially popular policies can spread across school networks within a state. Recent research finds that required personal finance in high school can improve credit scores (Urban et al., 2020; Brown et al., 2016), reduce delinquency (Urban et al., 2020; Brown et al., 2016), shift postsecondary education financing from higher to lower cost methods (Stoddard and Urban, 2020*a*), improve student loan repayment for first generation and low-income students (Mangrum, 2019), reduce alternative financial services borrowing (Harvey, 2019). Thus, understanding how to expand these course requirements, particularly in states without personal finance course mandates, can be important for improving the financial capability of young adults. Our results suggest that the most effective outreach method would be to engage one school within a grouping, where none of the schools in the group have personal finance access. This is likely to generate the most additional access.

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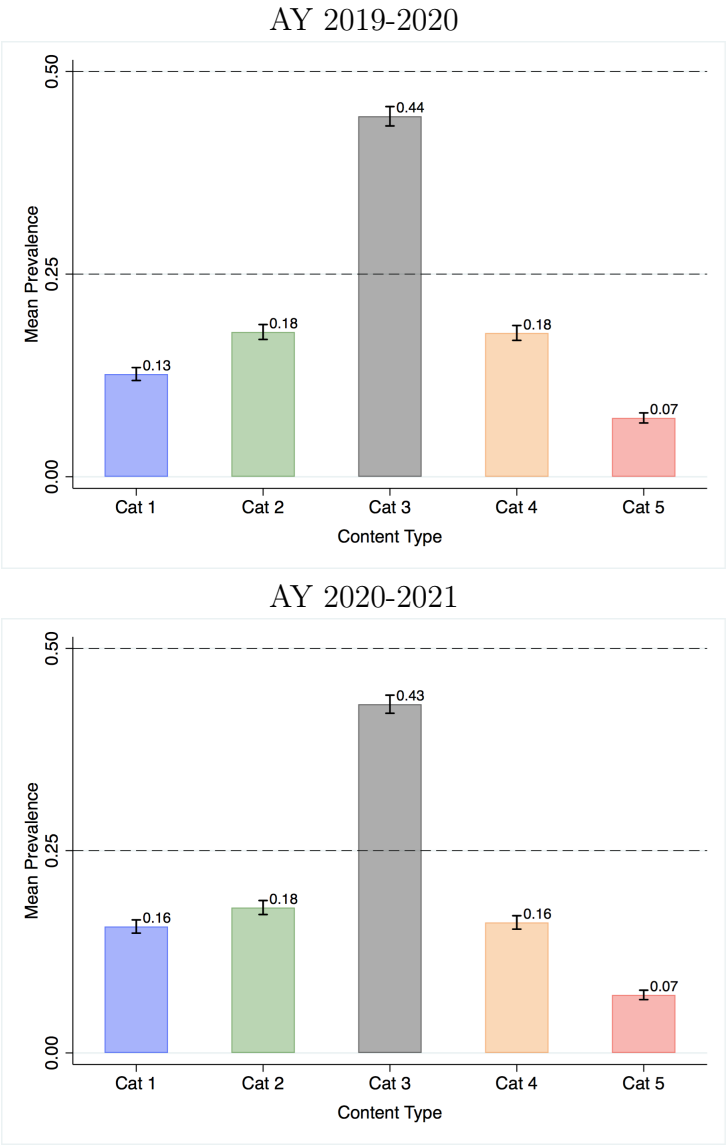
Declarations of interest: none

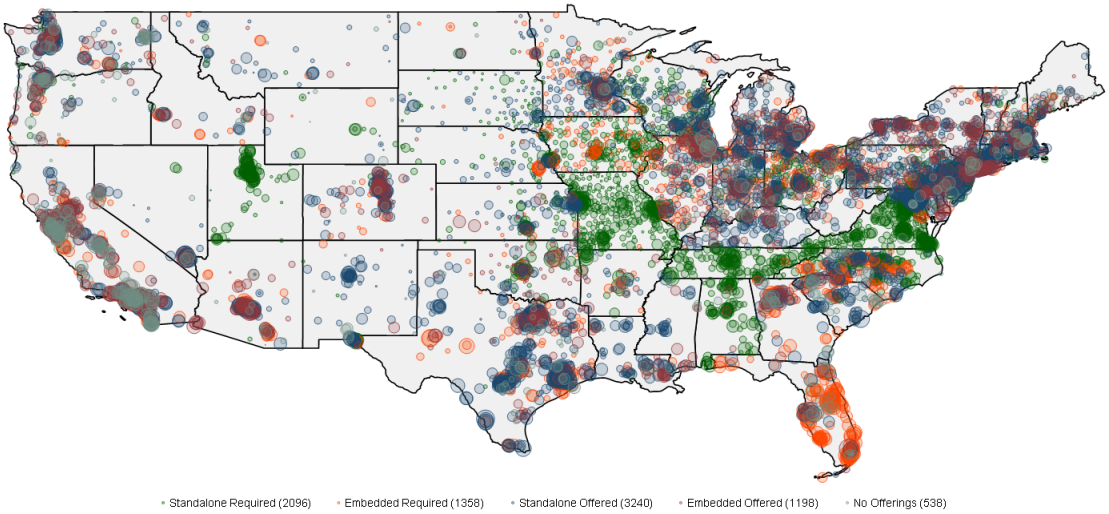
6. Tables and Figures

Figure 1: Prevalence of Maximum Standard by Year



Notes: This figure shows the prevalence of each category of financial education curriculum among all schools with data. The top panel depicts this data for AY 2019 - 2020 and the bottom panel depicts this data for AY 2020 - 2021. Raw data can be found at `www.carlyurban.com/home/financial-education`.

Figure 2: National Map of Financial Education Policies



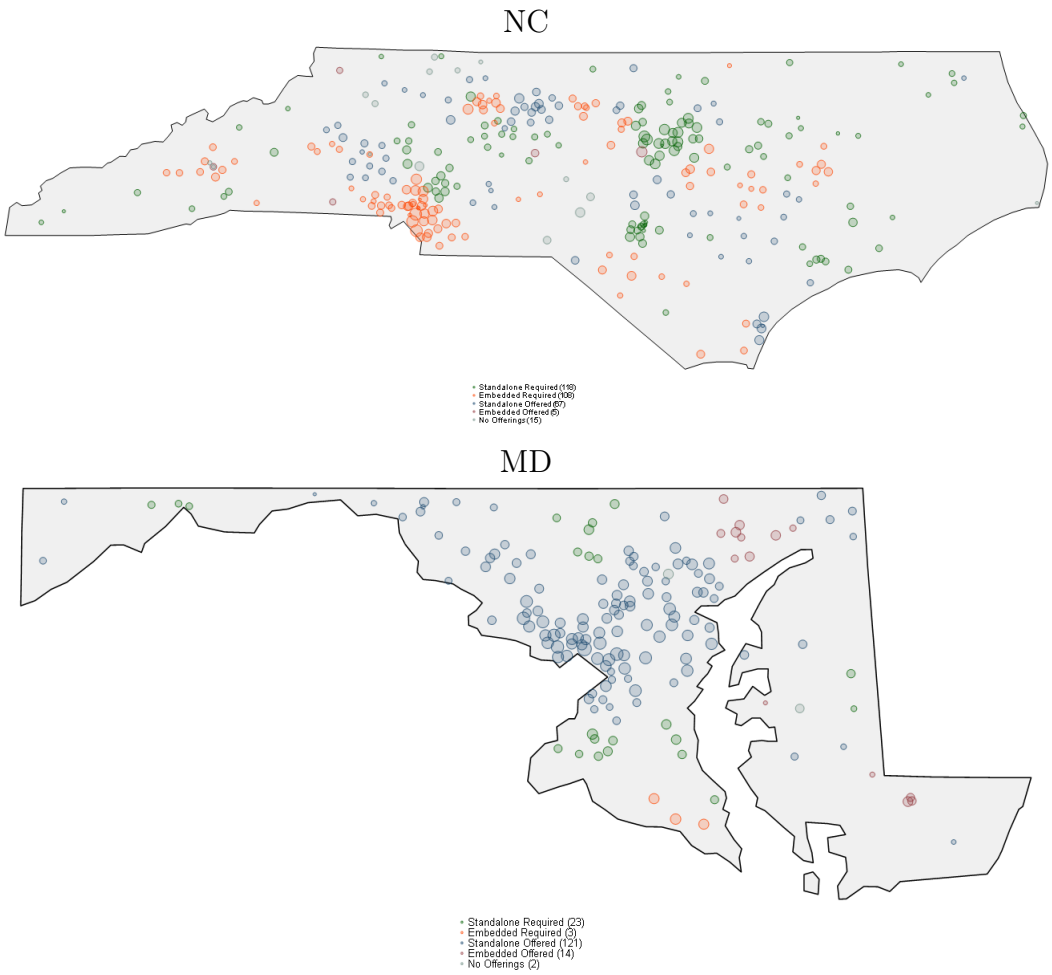
Notes: This map displays all of the high schools for which we have data. The colors represent categories of curriculum and the size of the dots indicate student enrollment.

Table 1: Neighbors by categories

	(1) Cat 1	(2) Cat 2	(3) Cat 3	(4) Cat 4	(5) Cat 5	(6) ALL
Neighbors (10 mi)	8.976	9.887	12.789	13.176	12.504	11.836
	(14.047)	(18.016)	(18.527)	(26.355)	(20.430)	(19.783)
Neighbors (10 mi) with data	5.772	6.049	8.555	6.968	7.087	7.366
	(8.863)	(7.640)	(13.730)	(9.507)	(10.158)	(11.357)
Neighbors (20 mi)	27.592	31.509	37.570	41.959	36.581	35.930
	(33.882)	(49.083)	(48.034)	(69.357)	(52.115)	(51.678)
Neighbors (20 mi) with data	17.295	17.796	23.457	20.649	19.723	20.896
	(21.964)	(19.304)	(28.159)	(24.376)	(23.314)	(25.125)
Schools in state with data	224.605	295.966	269.009	290.538	331.475	276.549
	(110.796)	(165.859)	(167.091)	(173.664)	(201.264)	(166.872)
Observations	845	1191	2966	1183	484	6669

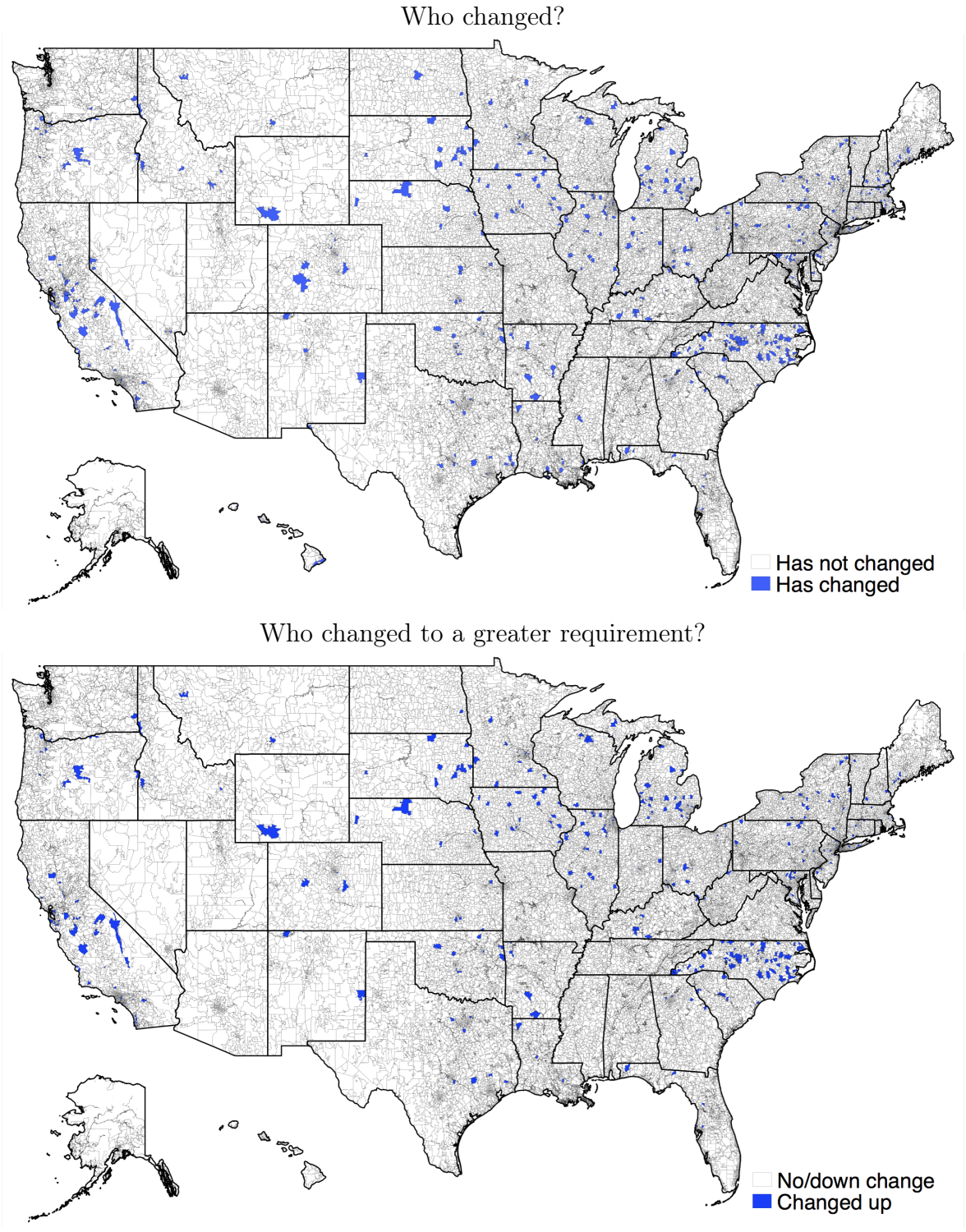
Notes: This table describes the number of neighbors within 10 miles and within 20 miles that have each of the possible categories of financial education curriculum. All neighbors are constrained to be within state borders. "With data" signifies that we have data on the neighbors' school policies, which means they have online course catalogs.

Figure 3: Examples 2020-2021



Notes: This figure displays two example states: Maryland and North Carolina. The colors represent categories of curriculum and the size of the dots indicate student enrollment.

Figure 4: Who changes: academic year 2019-2020 to 2020-2021



Notes: This figure describes where changes in policy occurred between AY 2019 - 2020 and AY 2020 - 2021. The top panel highlights all zip codes in which the policy changed and the bottom panel highlights all zip codes in which a stronger policy was adopted.

Table 2: Who changes their policies?

	Has Reqmt		Changed Policy		Changed to Greater Policy	
	(1)	(2)	(3)	(4)	(5)	(6)
$\frac{Students}{teachers}$	-0.000307**	-0.000172**	0.0000151	-0.0000503	0.0174***	0.00829
	(0.000145)	(0.0000736)	(0.0000671)	(0.0000328)	(0.00537)	(0.00602)
$s per pupil	-0.00235**	0.000721	-0.000557	0.000731	0.00619	-0.00780
	(0.00108)	(0.00176)	(0.000692)	(0.00136)	(0.00457)	(0.00736)
% Black students	0.000389	-0.00134*	0.000595	0.000316	0.00245	0.00203
	(0.000600)	(0.000688)	(0.000472)	(0.000864)	(0.00192)	(0.00345)
% Hispanic students	0.000980*	-0.000114	-0.000377	-0.0000723	-0.00263	-0.00239
	(0.000536)	(0.000703)	(0.000424)	(0.000635)	(0.00180)	(0.00316)
% white students	0.000754	-0.000583	-0.000130	0.000331	0.00315*	0.00127
	(0.000509)	(0.000645)	(0.000413)	(0.000625)	(0.00168)	(0.00347)
% FRPL students	-0.00138***	-0.000479	0.000281	0.000101	0.00233**	-0.000792
	(0.000377)	(0.000373)	(0.000253)	(0.000303)	(0.00118)	(0.00131)
Median HH income	0.0000130	-0.000176	-0.000170	0.0000687	0.000125	-0.000828
	(0.000343)	(0.000533)	(0.000255)	(0.000266)	(0.00108)	(0.00126)
City	-0.0233	-0.0265	-0.00864	0.00716	0.0662	0.0732
	(0.0160)	(0.0222)	(0.0113)	(0.0113)	(0.0463)	(0.0712)
Rural	0.000160	-0.00276	-0.0116	-0.00997	0.0289	0.0244
	(0.0146)	(0.0153)	(0.0102)	(0.0124)	(0.0458)	(0.0592)
Median house prices	-0.000237***	-0.0000461	0.000124***	0.0000201	0.000153	0.000210**
	(0.0000420)	(0.0000599)	(0.0000391)	(0.0000268)	(0.0000993)	(0.0000853)
# neighbors (10 mi.)	-0.000531	-0.00133	-0.000893***	-0.000775***	0.000905	-0.0000173
	(0.000324)	(0.000925)	(0.000241)	(0.000271)	(0.00176)	(0.00279)
State Reqmt	0.116***		-0.0173**		-0.0117	
	(0.0117)		(0.00767)		(0.0380)	
Mandate State	0.307***		0.165***		0.289***	
	(0.0227)		(0.0202)		(0.0371)	
STATE FEs	NO	YES	NO	YES	NO	YES
N	6607	6607	6601	6601	672	672

Notes: This table further describes those schools that changed their policies, with additional details about those policies and school characteristics. Robust standard errors clustered at the state-level are in parentheses. $ per pupil, median household income, and median house prices all in thousands of dollars. % variables are range from 0 to 100. State Reqmt means the state requires personal finance instruction within high school instruction in some way (but not a standalone course). Mandate State equals one for the two states that just began standalone course requirements for personal finance for the 2020-2021 graduating class.

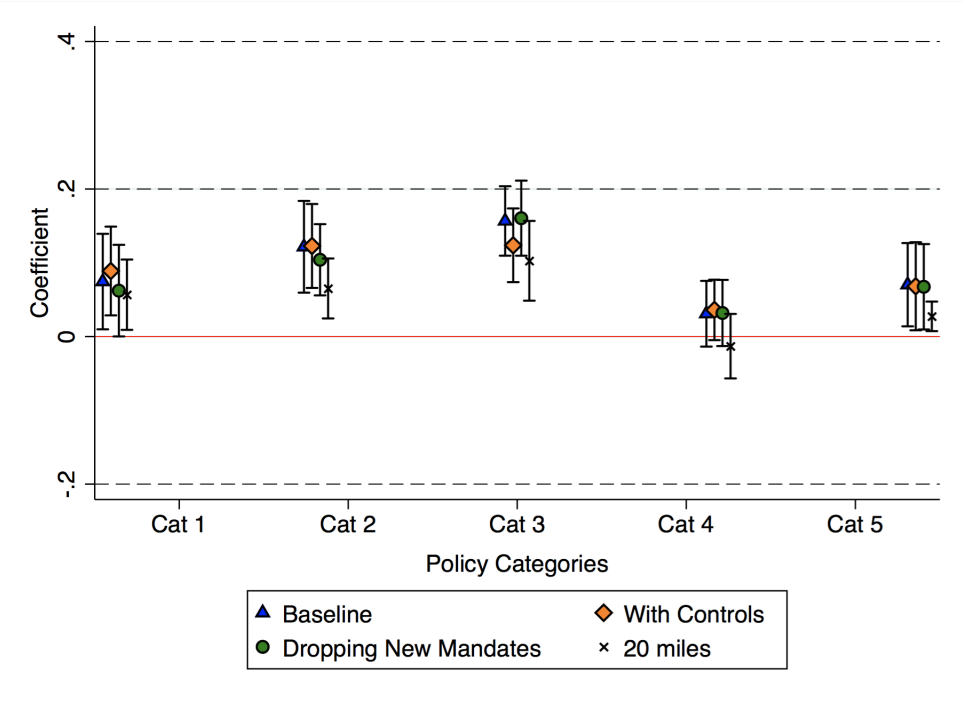
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Regressions with full coefficients, any

	(1) Cat 1	(2) Cat 2	(3) Cat 3	(4) Cat 4	(5) Cat 5
Lead Model					
Any Cat 1 schools in 10 miles	0.0703**	-0.0700***	0.0257	-0.00875	-0.0172**
	(0.0318)	(0.0188)	(0.0319)	(0.00989)	(0.00835)
Any Cat 2 schools in 10 miles	-0.0303*	0.121***	-0.0550***	-0.0114	-0.0241**
	(0.0177)	(0.0307)	(0.0156)	(0.00895)	(0.0101)
Any Cat 3 schools in 10 miles	-0.00687	-0.0707***	0.156***	-0.0535***	-0.0251***
	(0.0176)	(0.0237)	(0.0233)	(0.0118)	(0.00685)
Any Cat 4 schools in 10 miles	-0.0229**	-0.0137	0.00573	0.0318	-0.000828
	(0.0103)	(0.0101)	(0.0184)	(0.0219)	(0.00921)
Any Cat 5 schools in 10 miles	-0.0215***	-0.0432	-0.00362	0.0000352	0.0683**
	(0.00783)	(0.0263)	(0.0460)	(0.0192)	(0.0277)
Observations	7545	7545	7545	7545	7545
2020					
Any Cat 1 schools in 10 miles	0.0948**	-0.0591***	0.000418	-0.0181	-0.0180*
	(0.0359)	(0.0182)	(0.0364)	(0.0140)	(0.0106)
Any Cat 2 schools in 10 miles	-0.0209***	0.149***	-0.0842***	-0.0199*	-0.0241**
	(0.00736)	(0.0381)	(0.0309)	(0.0109)	(0.0113)
Any Cat 3 schools in 10 miles	-0.0303***	-0.0840***	0.208***	-0.0641***	-0.0298***
	(0.0108)	(0.0272)	(0.0327)	(0.0148)	(0.00660)
Any Cat 4 schools in 10 miles	-0.0149*	-0.00982	-0.0476**	0.0781***	-0.00578
	(0.00885)	(0.0110)	(0.0203)	(0.0264)	(0.0109)
Any Cat 5 schools in 10 miles	-0.0147**	-0.0655**	0.0151	-0.0179	0.0830**
	(0.00644)	(0.0298)	(0.0510)	(0.0247)	(0.0359)
Observations	6669	6669	6669	6669	6669
2021					
Any Cat 1 schools in 10 miles	0.109**	-0.0567**	-0.0101	-0.0221*	-0.0205*
	(0.0467)	(0.0222)	(0.0373)	(0.0112)	(0.0105)
Any Cat 2 schools in 10 miles	-0.0319	0.134***	-0.0854***	-0.00428	-0.0127
	(0.0241)	(0.0370)	(0.0210)	(0.0139)	(0.00836)
Any Cat 3 schools in 10 miles	-0.0408**	-0.0812***	0.203***	-0.0550***	-0.0255***
	(0.0161)	(0.0203)	(0.0335)	(0.0120)	(0.00842)
Any Cat 4 schools in 10 miles	-0.00970	-0.0170	-0.0116	0.0474*	-0.00912
	(0.0117)	(0.0104)	(0.0179)	(0.0264)	(0.0122)
Any Cat 5 schools in 10 miles	-0.0345***	-0.0246	-0.0101	-0.00129	0.0705***
	(0.0113)	(0.0186)	(0.0400)	(0.0176)	(0.0230)
Observations	7561	7561	7561	7561	7561

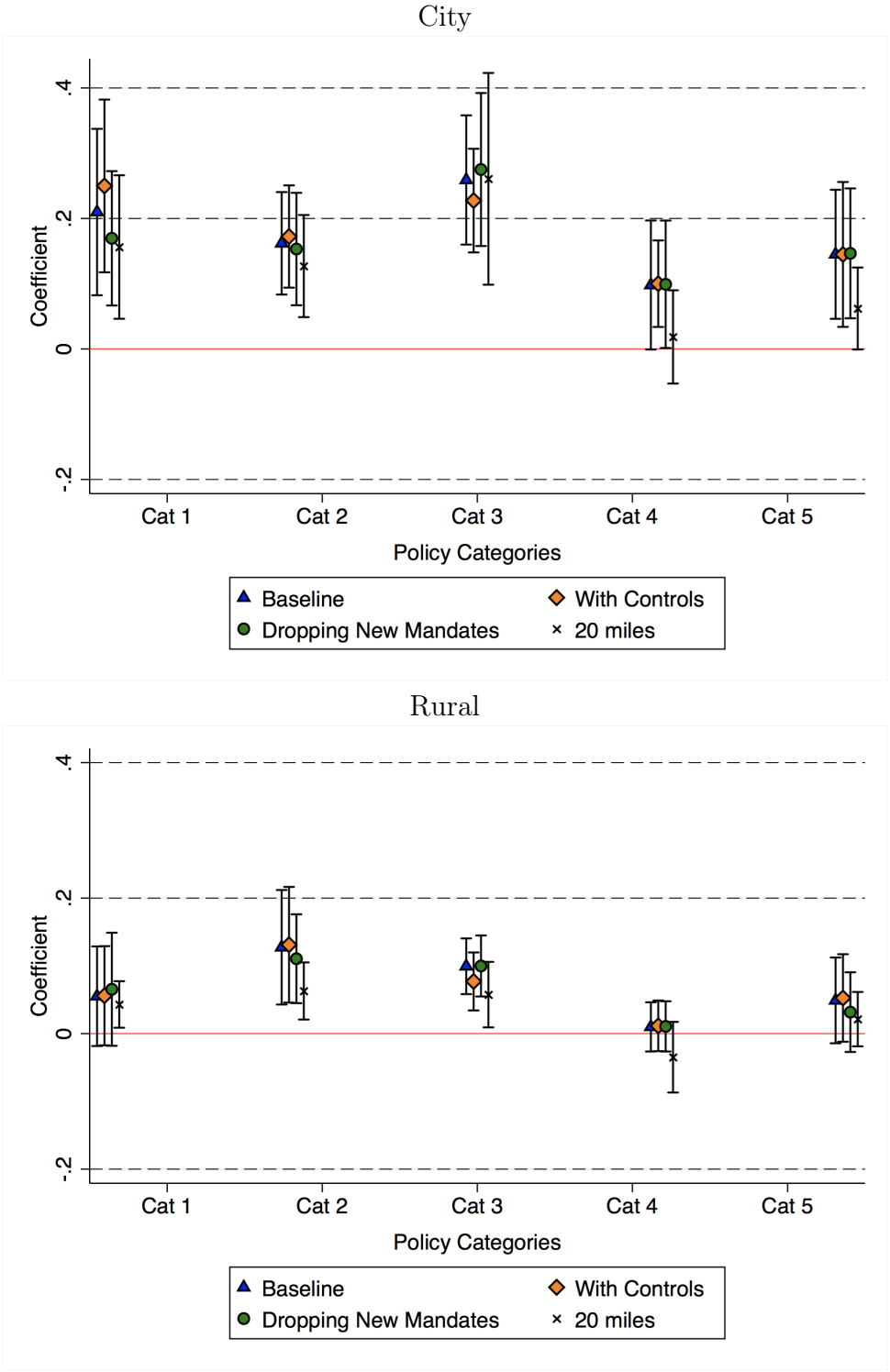
Notes: This table presents our main results. The dependent variable in all columns is an indicator variable equal to 1 if a school has the particular personal finance standard and 0 otherwise. Having one more neighbor within ten miles with that standard is associated with a increase of between 7 and 16 percentage points in the likelihood of having that standard. Robust standard errors clustered at the state-level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 5: School policy choices based on peer policies



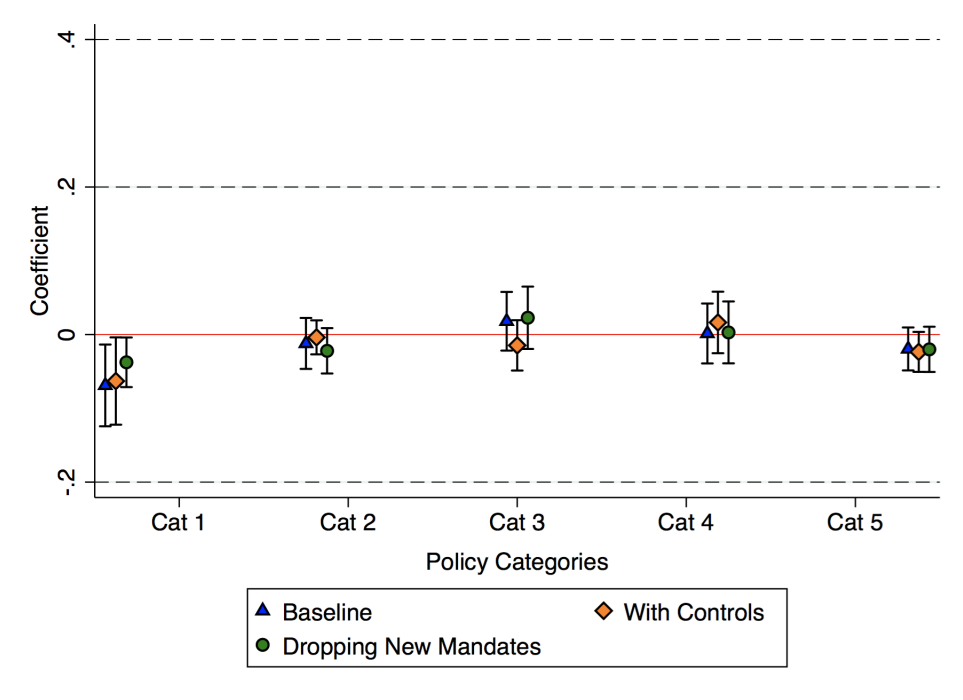
Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. Baseline regressions control for all other categories, with the excluded group being whether or not any neighbors within a 10-mile radius have no data observed (e.g., they have no online course catalogs).

Figure 6: Heterogeneity: City vs. Rural Schools



Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. Baseline regressions control for all other categories, with the excluded group being whether or not any neighbors within a 10-mile radius have no data observed (e.g., they have no online course catalogs).

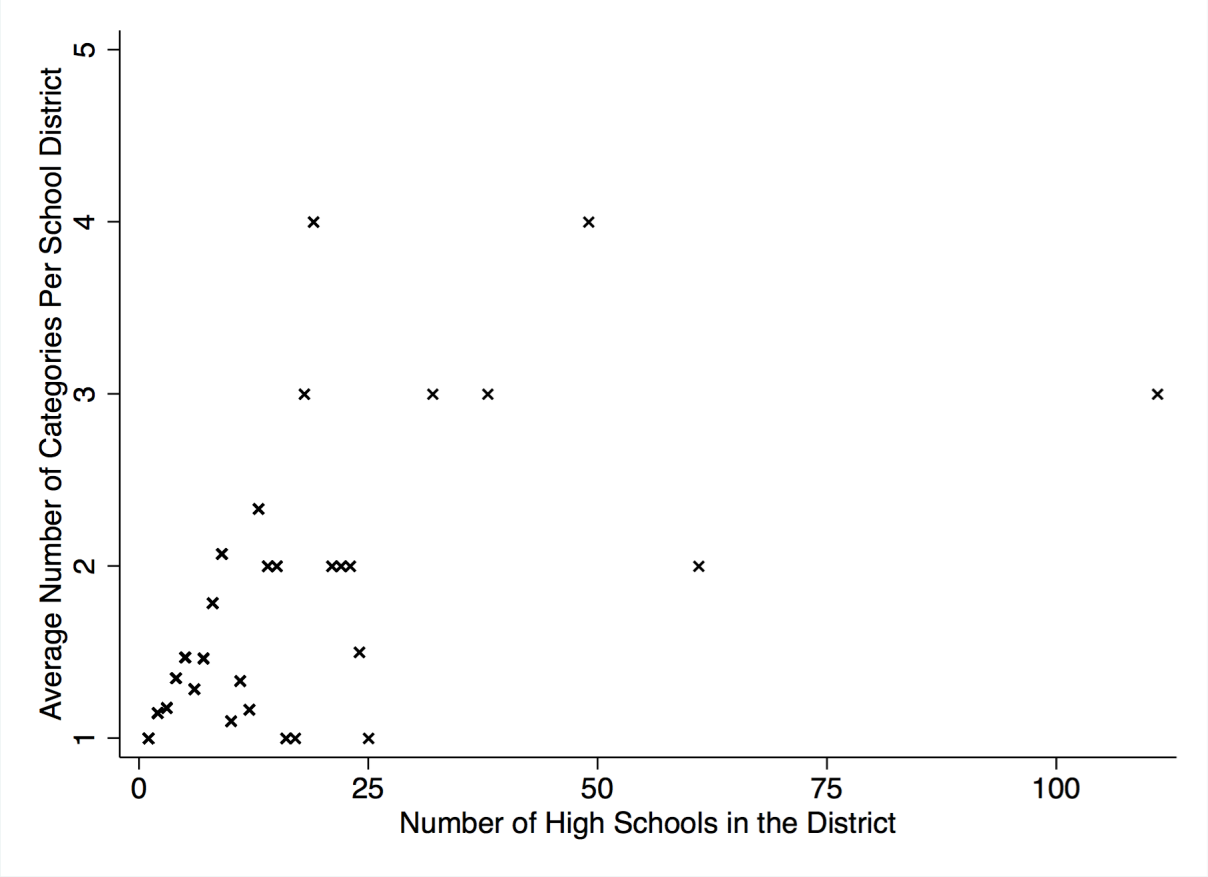
Figure 7: Placebo: School policy choices based on random sample of distant ($> 30 miles$) schools within the state



Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. In this specification, we randomly select the same number of neighbors that each school has from a radius over 30 miles away but within the same state.

7. Appendix

Figure A.1: There is Variation within School District in Policies Chosen by Individual High Schools



Notes: This graph shows the average number of policies by number of high schools in the school district. It indicates that there is a large amount of variation in policies even within school districts.

Table A.1: Who is in the sample?

	2019-2020			2020-2021		
	No Data	In Sample	Total	No Data	In Sample	Total
Student-teacher ratio	15.804	16.883	16.314	15.416	17.088	16.301
	(36.616)	(23.103)	(30.966)	(21.892)	(36.924)	(30.785)
$s per pupil	15.801	14.988	15.409	15.983	14.981	15.443
	(28.830)	(5.503)	(21.093)	(30.979)	(5.548)	(21.427)
% Black students	14.683	9.861	12.417	15.181	10.111	12.519
	(24.371)	(16.423)	(21.151)	(24.914)	(16.843)	(21.215)
% Hispanic students	20.533	19.710	20.146	21.367	19.162	20.209
	(25.946)	(22.751)	(24.499)	(26.710)	(22.347)	(24.540)
% White students	55.836	61.119	58.318	54.481	61.518	58.176
	(34.891)	(29.797)	(32.702)	(35.303)	(29.908)	(32.769)
% FRPL students	52.474	39.486	46.410	53.896	39.639	46.457
	(26.646)	(23.653)	(26.109)	(26.743)	(23.731)	(26.202)
Median HH income 53.646	68.204	60.450	52.559	67.583	60.406	
	(19.194)	(27.232)	(24.404)	(18.748)	(26.666)	(24.405)
City	0.208	0.187	0.198	0.219	0.185	0.201
	(0.406)	(0.390)	(0.399)	(0.414)	(0.388)	(0.401)
Rural	0.638	0.445	0.548	0.641	0.458	0.546
	(0.481)	(0.497)	(0.498)	(0.480)	(0.498)	(0.498)
Median house prices	190.359	244.764	215.819	189.982	239.927	216.090
	(177.452)	(195.188)	(187.927)	(183.457)	(189.239)	(188.157)
# neighbors (10 mi)	22.391	11.836	17.463	23.789	11.485	17.370
	(65.235)	(19.783)	(49.789)	(66.111)	(19.219)	(48.173)
Observations	7567	6656	14223	6888	7544	14432

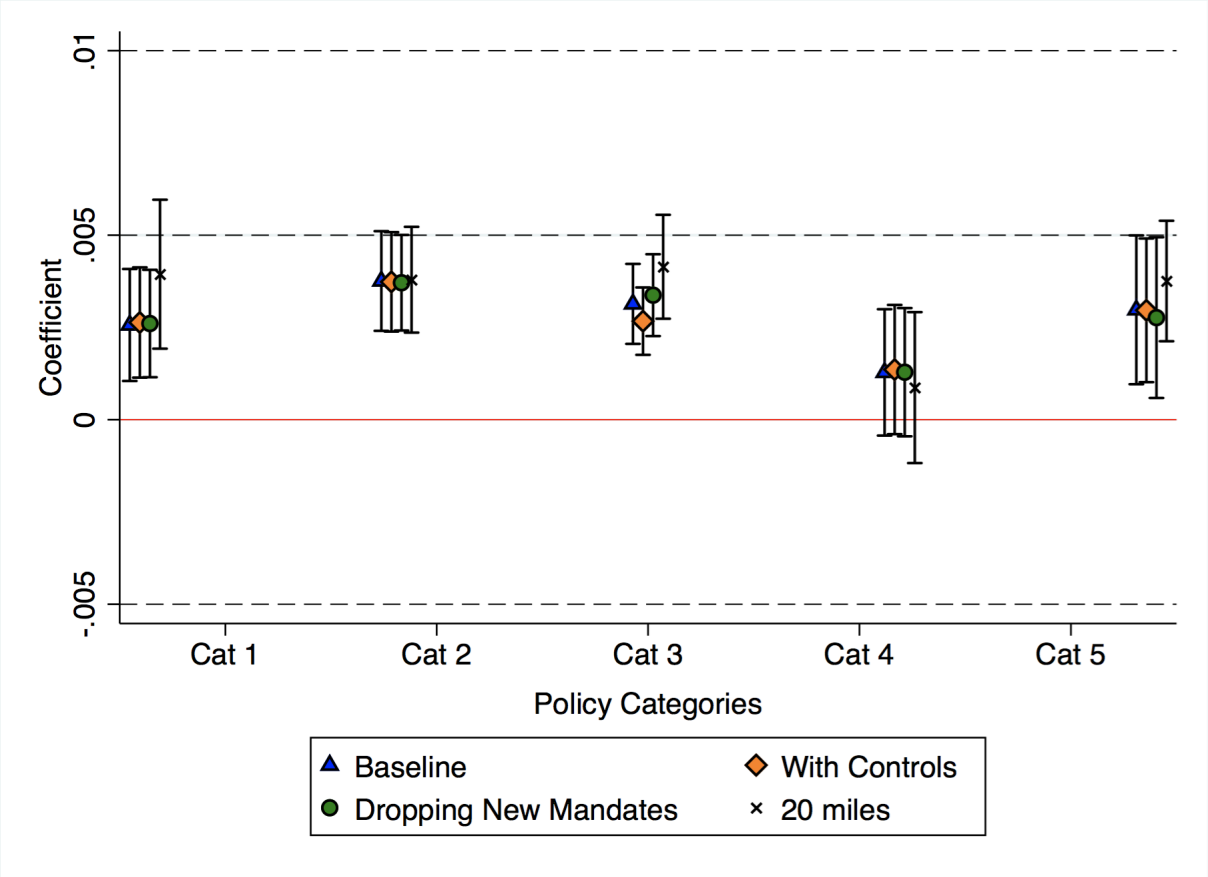
Notes: Means reported with standard deviations in parentheses. $ per pupil, median household income, and median house prices all in thousands of dollars. % variables are range from 0 to 100. The sample of missing schools has a higher fraction of Black students, a higher fraction of Hispanic students, and a higher fraction of students receiving free or reduced-price lunch. The missing schools are located in areas with lower median household incomes, lower house prices, and more rural areas or more urban areas (as opposed to suburbs).

Table A.2: Likelihood of having an online course catalog, based on your neighbors

	Lead Model		2021		2020	
	DV= 1 if school had an online course catalog					
	(1)	(2)	(3)	(4)	(5)	(6)
Neighbor had CC (10 miles)	0.294***	0.288***	0.292***			
	(0.0227)	(0.0222)	(0.0246)			
Neighbor had CC (20 miles)				0.284***	0.276***	0.266***
				(0.0280)	(0.0279)	(0.0294)
Observations	14283	14492	14283	14283	14492	14283

Notes: Models include state fixed effects and cluster standard errors at the state-level. They also control for the number of neighbors within a 10 and 20 mile radius in Columns (1)-(3) and (4)-(6), respectively. Schools who have neighbors in a 10 or 20 mile radius with online course catalogs in the previous year (Columns (1) and (4)) are almost 30 percentage points more likely to have an online course catalog themselves.

Figure A.2: School policy choices based on peer policies, using percent of neighbors



Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. Baseline regressions control for all other categories, with the excluded group being the percent of neighbors within a 10-mile radius have no data observed (e.g., they have no online course catalogs).

Table A.3: Regressions with full coefficients, percent

	(1) Cat 1	(2) Cat 2	(3) Cat 3	(4) Cat 4	(5) Cat 5
Lead Model					
% Cat 1 schools in 10 miles	0.00257***	-0.00105**	-0.000923**	-0.0000990	-0.000490***
	(0.000753)	(0.000401)	(0.000368)	(0.000218)	(0.000172)
% Cat 2 schools in 10 miles	-0.000878*	0.00376***	-0.00158***	-0.000687***	-0.000614***
	(0.000450)	(0.000670)	(0.000349)	(0.000243)	(0.000210)
% Cat 3 schools in 10 miles	-0.0000665	-0.00132***	0.00314***	-0.00103***	-0.000720***
	(0.000369)	(0.000405)	(0.000538)	(0.000229)	(0.000134)
% Cat 4 schools in 10 miles	-0.0000748	-0.000277	-0.000443	0.00128	-0.000486*
	(0.000258)	(0.000358)	(0.000497)	(0.000849)	(0.000245)
% Cat 5 schools in 10 miles	-0.000521**	-0.000457	-0.00171***	-0.000286	0.00298***
	(0.000216)	(0.000717)	(0.000611)	(0.000746)	(0.00100)
Observations	7545	7545	7545	7545	7545
2020					
% Cat 1 schools in 10 miles	0.00327***	-0.000972***	-0.00166***	-0.000332	-0.000306*
	(0.000896)	(0.000335)	(0.000482)	(0.000236)	(0.000171)
% Cat 2 schools in 10 miles	-0.000449***	0.00457***	-0.00251***	-0.000891***	-0.000717***
	(0.000113)	(0.000896)	(0.000632)	(0.000311)	(0.000212)
% Cat 3 schools in 10 miles	-0.000502***	-0.00147***	0.00408***	-0.00131***	-0.000797***
	(0.000155)	(0.000366)	(0.000581)	(0.000329)	(0.000167)
% Cat 4 schools in 10 miles	-0.0000986	-0.000189	-0.00109*	0.00195**	-0.000577*
	(0.000213)	(0.000286)	(0.000596)	(0.000951)	(0.000298)
% Cat 5 schools in 10 miles	-0.000307	-0.000859*	-0.00194***	-0.00110	0.00420***
	(0.000218)	(0.000432)	(0.000575)	(0.000715)	(0.00111)
Observations	6669	6669	6669	6669	6669
2021					
% Cat 1 schools in 10 miles	0.00312***	-0.00101**	-0.00121**	-0.000349*	-0.000553***
	(0.00105)	(0.000438)	(0.000557)	(0.000189)	(0.000162)
% Cat 2 schools in 10 miles	-0.000929	0.00411***	-0.00203***	-0.000628***	-0.000530***
	(0.000565)	(0.000972)	(0.000499)	(0.000224)	(0.000194)
% Cat 3 schools in 10 miles	-0.000629***	-0.00128***	0.00366***	-0.00110***	-0.000660***
	(0.000215)	(0.000331)	(0.000499)	(0.000229)	(0.000122)
% Cat 4 schools in 10 miles	-0.0000137	-0.000359	-0.000780*	0.00166*	-0.000507*
	(0.000249)	(0.000382)	(0.000453)	(0.000904)	(0.000301)
% Cat 5 schools in 10 miles	-0.000595	-0.000695	-0.00135***	-0.000492	0.00313***
	(0.000391)	(0.000494)	(0.000439)	(0.000560)	(0.00104)
Observations	7561	7561	7561	7561	7561

Notes: Our results are consistent if we instead use a measure that reflects the fraction of schools in one's 10 mile radius that have a given policy. Robust standard errors clustered at the state-level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Regressions with full coefficients, total neighbors with a specific policy

	(1) Cat 1	(2) Cat 2	(3) Cat 3	(4) Cat 4	(5) Cat 5
Lead Model					
Tot Cat 1 schools in 10 miles	0.0185*	-0.00740	-0.0116**	0.00156	-0.00106
	(0.00938)	(0.00652)	(0.00519)	(0.00220)	(0.00141)
Tot Cat 2 schools in 10 miles	-0.00584	0.0222**	-0.0102***	-0.00481**	-0.00139
	(0.00398)	(0.00904)	(0.00368)	(0.00190)	(0.00171)
Tot Cat 3 schools in 10 miles	-0.00255***	-0.00521***	0.0148***	-0.00506***	-0.00196***
	(0.000545)	(0.00135)	(0.00255)	(0.00102)	(0.000495)
Tot Cat 4 schools in 10 miles	-0.000136	-0.00403	-0.00616	0.0179***	-0.00759**
	(0.00180)	(0.00340)	(0.00433)	(0.00527)	(0.00364)
Tot Cat 5 schools in 10 miles	-0.00304	-0.00161	-0.0193**	-0.0108	0.0347***
	(0.00202)	(0.00253)	(0.00806)	(0.00688)	(0.00430)
Observations	7545	7545	7545	7545	7545
2020					
Tot Cat 1 schools in 10 miles	0.0229*	-0.00303	-0.0196***	-0.000894	0.000661
	(0.0124)	(0.00566)	(0.00613)	(0.00207)	(0.00110)
Tot Cat 2 schools in 10 miles	-0.00396	0.0290**	-0.0160*	-0.00659***	-0.00247
	(0.00298)	(0.0118)	(0.00841)	(0.00229)	(0.00187)
Tot Cat 3 schools in 10 miles	-0.00279***	-0.00547***	0.0167***	-0.00567***	-0.00277***
	(0.000668)	(0.00160)	(0.00350)	(0.00146)	(0.000391)
Tot Cat 4 schools in 10 miles	0.000627	-0.00463	-0.00882*	0.0221***	-0.00930*
	(0.00130)	(0.00296)	(0.00488)	(0.00720)	(0.00549)
Tot Cat 5 schools in 10 miles	-0.00123	-0.00365**	-0.0232***	-0.0144**	0.0425***
	(0.00132)	(0.00171)	(0.00688)	(0.00624)	(0.00478)
Observations	6669	6669	6669	6669	6669
2021					
Tot Cat 1 schools in 10 miles	0.0276*	-0.00895	-0.0161***	-0.000988	-0.00155
	(0.0137)	(0.00741)	(0.00560)	(0.00206)	(0.00190)
Tot Cat 2 schools in 10 miles	-0.00807	0.0286**	-0.0126**	-0.00448**	-0.00351***
	(0.00549)	(0.0115)	(0.00618)	(0.00210)	(0.00113)
Tot Cat 3 schools in 10 miles	-0.00377***	-0.00480***	0.0164***	-0.00552***	-0.00232***
	(0.00121)	(0.00136)	(0.00349)	(0.00123)	(0.000458)
Tot Cat 4 schools in 10 miles	0.00116	-0.00611	-0.00916**	0.0215***	-0.00737
	(0.00216)	(0.00376)	(0.00439)	(0.00638)	(0.00488)
Tot Cat 5 schools in 10 miles	-0.000893	-0.00758**	-0.0191***	-0.0109	0.0385***
	(0.00270)	(0.00332)	(0.00641)	(0.00957)	(0.00596)
Observations	7561	7561	7561	7561	7561

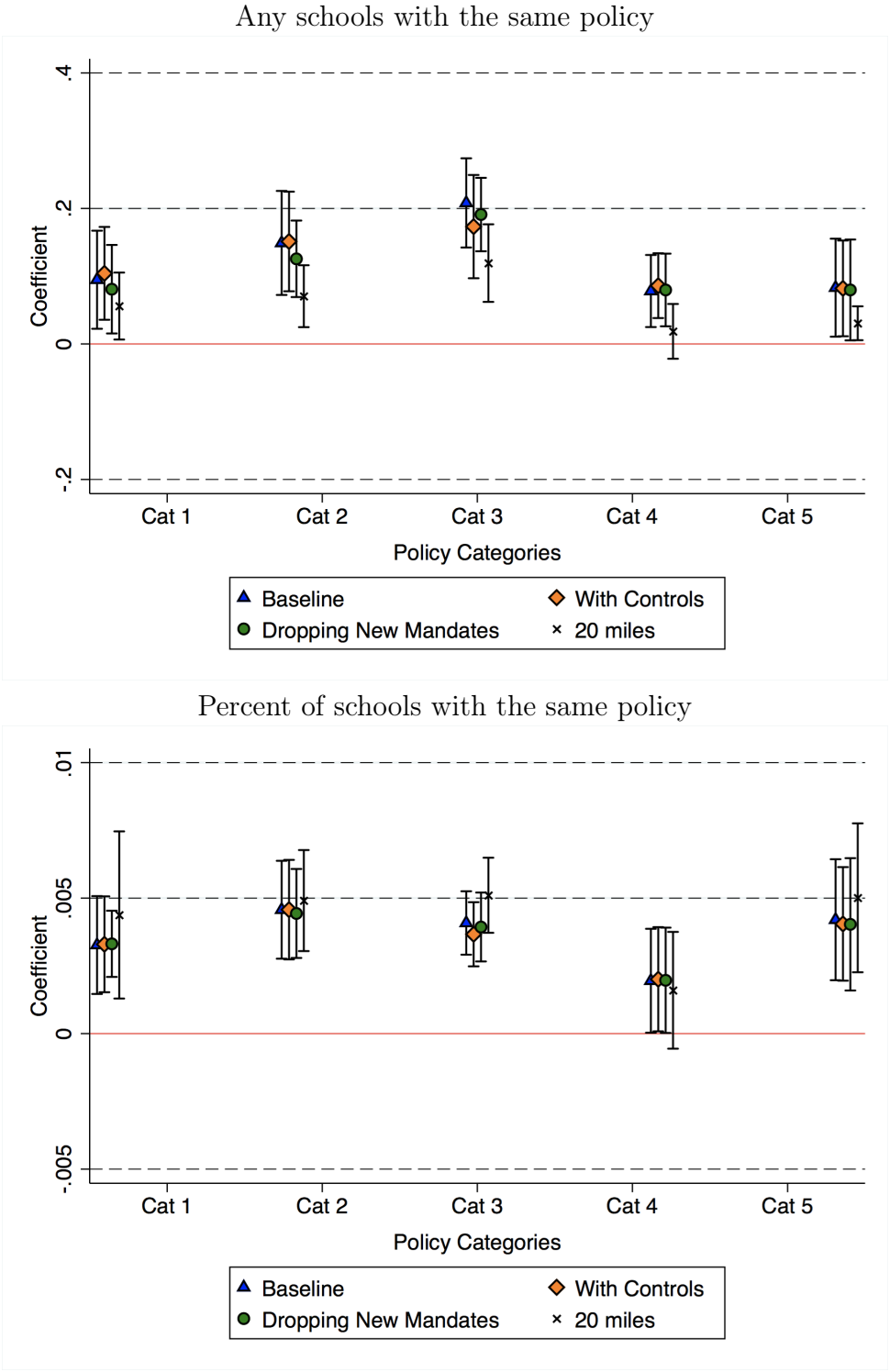
Notes: Our results are also robust to using a measure of the total number of schools in one's peer network that have a given policy. Robust standard errors clustered at the state-level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Marginal effects from a probit

	(1) Cat 1	(2) Cat 2	(3) Cat 3	(4) Cat 4	(5) Cat 5
Lead Model					
Any Cat 1 schools in 10 miles	0.0600**	-0.0727***	0.0233	-0.00939	-0.0296**
	(0.0242)	(0.0203)	(0.0311)	(0.00969)	(0.0121)
Any Cat 2 schools in 10 miles	-0.0324**	0.106***	-0.0572***	-0.0121	-0.0246**
	(0.0162)	(0.0227)	(0.0169)	(0.00985)	(0.0102)
Any Cat 3 schools in 10 miles	-0.00958	-0.0663***	0.153***	-0.0564***	-0.0277***
	(0.0160)	(0.0190)	(0.0215)	(0.0126)	(0.00782)
Any Cat 4 schools in 10 miles	-0.0267**	-0.0156	0.00466	0.0355*	0.00301
	(0.0107)	(0.0109)	(0.0177)	(0.0200)	(0.00927)
Any Cat 5 schools in 10 miles	-0.0422***	-0.0391	-0.00226	0.00233	0.0507***
	(0.0139)	(0.0252)	(0.0438)	(0.0150)	(0.0140)
Observations	7336	7509	7516	7448	7068

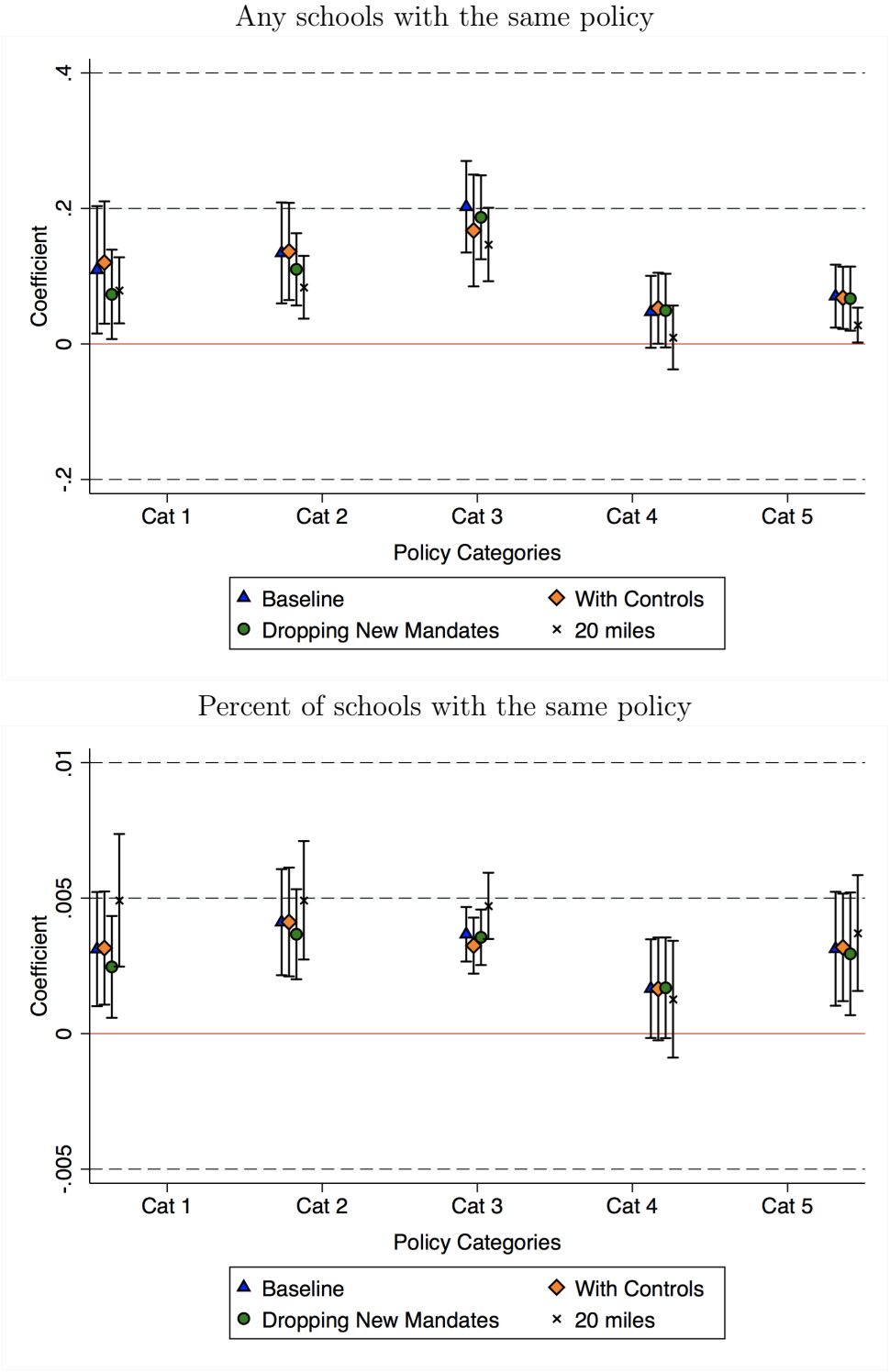
Notes: This figure documents that our result is not being driven by functional form. The marginal effects from a probit specification are similar in size and statistical significance to the LPM coefficients. Robust standard errors clustered at the state-level are in parentheses. Marginal effects reported. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.3: School policy choices based on peer policies (2020)



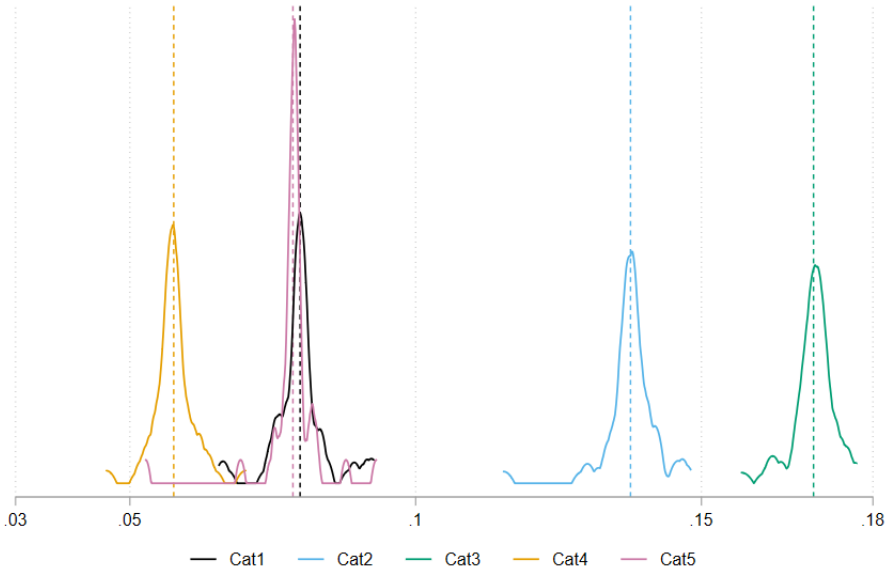
Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. Baseline regressions control for all other categories, with the excluded group being whether or not any or alternatively percent of neighbors within a 10-mile radius have no data observed (e.g., they have no online course catalogs).

Figure A.4: School policy choices based on peer policies (2021)



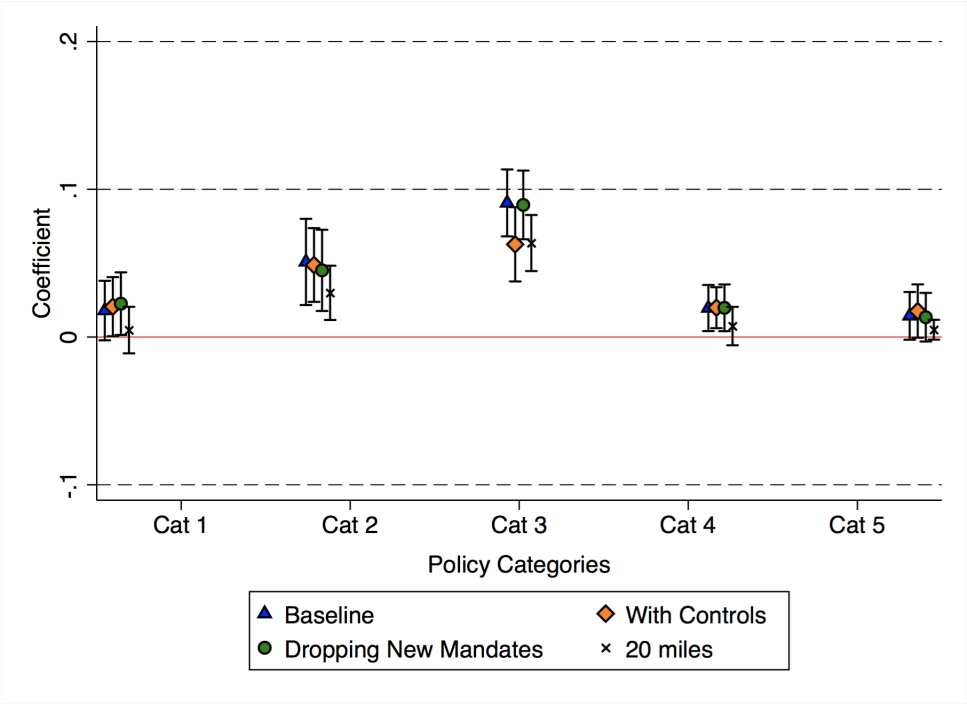
Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Error bars represent 95% confidence intervals. Baseline regressions control for all other categories, with the excluded group being whether or not any or alternatively percent of neighbors within a 10-mile radius have no data observed (e.g., they have no online course catalogs).

Figure A.5: Baseline effects dropping one state at a time



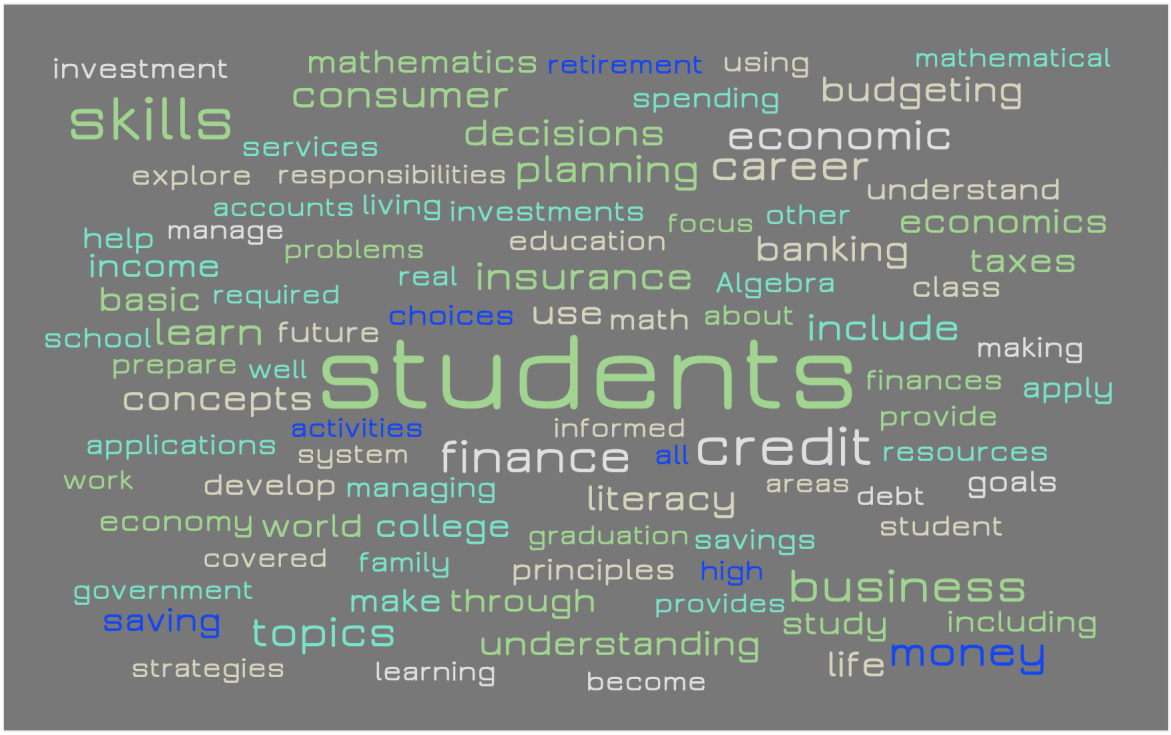
Notes: Coefficients reported from Equation 1, where each point is coefficient for the same category. Each CDF of the coefficients are plotted when we drop one state at a time. The dashed line is the effect from Table 5. Each color represents a different category.

Figure A.6: Effects including schools that are missing online course catalogs



Notes: In this figure, we report the results of our regression including schools that do not have online course catalogs. We treat these schools as having none of the 5 categories of policies.

Figure A.7: Course Description Word Choice



Notes: This figure depicts a word cloud of the online course descriptions in the data set. It gives a visual description of the most common words that occur in these course descriptions. Created using `https://worditout.com/word-cloud/create`

Table A.6: Number of high schools and number of high schools with course catalog data (2021)

State	Schools w/ Data	Total Schools	% with data
AK	31	52	0.596
AR	56	234	0.239
AZ	150	272	0.551
CA	567	1060	0.535
CO	138	294	0.469
CT	125	177	0.706
DE	22	27	0.815
FL	212	513	0.413
GA	94	417	0.225
HI	28	38	0.737
IA	220	318	0.692
ID	40	121	0.331
IL	431	710	0.607
IN	234	354	0.661
KS	134	337	0.398
KY	106	217	0.488
LA	76	218	0.349
MA	222	284	0.782
MD	162	190	0.853
ME	71	109	0.651
MI	339	592	0.573
MN	234	392	0.597
MS	33	201	0.164
MT	49	169	0.290
NC	312	408	0.765
ND	30	166	0.181
NE	94	265	0.355
NH	59	70	0.843
NJ	261	343	0.761
NM	52	140	0.371
NV	58	95	0.611
NY	428	1034	0.414
OH	400	731	0.547
OK	114	443	0.257
OR	132	213	0.620
PA	417	589	0.708
RI	35	43	0.814
SC	104	201	0.517
SD	96	165	0.582
TX	623	1243	0.501
VT	33	48	0.688
WA	205	398	0.515
WI	271	411	0.659
WV	30	112	0.268
WY	25	78	0.321

Notes: This table reports the number of schools with online course catalogs, the number of total high schools, and the fraction of schools we recover from our data. This fraction of schools ranges from 16.4% to 85.3%.