Parental Valuation of School Choice: Evidence from Geographic Boundaries[+]

Michael Bates and Quentin Brummet[*]

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Abstract:
School choice in the United States has expanded rapidly over the past two decades, but the degree to which parents value this expanded choice is unclear. Using multiple estimation strategies that exploit discontinuities along administrative boundaries, we estimate the degree to which access to inter-district school choice is capitalized into the housing market. We find mixed evidence on an average home-price premium associated with access (or openness) to higher-performing (lower-performing) school districts. However, we find a home-price premium of access to choice and a penalty to openness to choice near the border between residence and district of choice. This capitalization falls with distance. The premium to access also increases with the differential in school performance between residential districts and districts of choice, though not enough to overcome the residential school performance home price premium.

Keywords: School Choice, Hedonic Valuation, Housing Prices
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[*] Bates: Department of Economics, University of California, Riverside, 900 University Avenue, Riverside, CA 92521. Email: michael.bates@ucr.edu. Brummet: Center for Administrative Records Research and Applications, U.S. Census Bureau, 4600 Silver Hill Road, Washington, DC 20233. Email: quentin.o.brummet@census.gov.

1 Introduction

School choice in the United States has expanded rapidly over the past two decades under the promise that expanding schooling options will provide welfare benefits to parents and their children. In fact, the share of students attending a chosen as opposed to assigned public school rose nearly 50 percent from 11 percent in 1993 to 16 percent in 2007 (NCES). However, given the widespread adoption of school choice policies and their importance, little research seeks to understand the value parents place on school choice options and the limited extant evidence is mixed.

This raw growth in school choice utilization suggests that parents place some value on schooling choice compared to their previous schooling options. Indeed, a voluminous literature focuses on the effects of school choice on the academic achievement of both students who utilize school choice and students who remain in their assigned schools.[1] However, this literature typically focuses on one effect of school choice—student achievement—and does not attempt to understand the valuation that parents place on these options. Understanding parental valuation is may be additionally important given that a growing body of work points to parental psychic costs imposed by school choice, which a focus on student outcomes alone would fail to consider.[2] Focusing on parental demand for school choice as reflected in housing prices captures all of these components.[3]

[1] For examples see Angrist & Lang (2006); Cullen et al. (2006); Goldhaber (1996); Hastings & Weinstein (2008); Hoxby (2003); Hsieh & Urquiola (2006); Imberman (2011a, 2011b); Lavy (2010).

[2] For examples see Beal & Hendry (2012); Crozier et al. (2013); Roda & Wells (2013).

[3] Under Rosen's (1974) theory, consumers maximize utility by setting their indifference curves tangent to the continuous hedonic price function, such that their marginal willingness to pay for say school choice quality equals the slope of the hedonic price function. Thus, by estimating the school choice premium we uncover parents' willingness to pay for school choice quality, which is necessary for welfare analysis. Similar strategies have been used to perform welfare analysis associated with the Clean Air Act in Chay & Greenstone (2005) and with superfund cleanup in Greenstone & Gallagher (2008).

Naturally, focusing only on the valuations that parents in sending districts place on the additional options misses the valuation of choice on parents in receiving districts. Research estimating the capitalization of forced integration in home values may suggest that openness to students from other districts may depress home prices.[4] By analyzing the capitalization of choice in home values separately for homes in sending and receiving districts, we are able to separate the potential positive and negative valuations of school.

In large part, the lack of focus on housing price capitalization of school choice is due to the dearth of convincing identification strategies that make use of exogenous variation in school choice. To overcome this hurdle, we utilize spatial variation in access to inter-district school choice (IDSC) along administrative boundaries in Michigan. We then merge comprehensive home sales data to district boundaries and flows of students between districts. Michigan is an ideal setting for such an analysis for multiple reasons. First, Michigan has a longstanding school choice program that is highly utilized in areas across the state with over 7 percent of students utilizing the program in recent years (Cowen et al. 2015). Second, school districts in Michigan are quite small with around 550 public school districts covering the state, providing housing density along district boundaries that often do not coincide with other administrative boundaries. Last, and most importantly, districts are organized in intermediate school districts (ISDs), which have little direct role in schooling provision, but foster choice between districts within the same ISD. This leads to plausibly exogenous variation in the assignment of school choice between districts.

Borrowing from the literature on the capitalization of school performance in the housing market, we use both boundary discontinuity designs and differences in matched transactions to

[4] For examples, see Boustan (2012); Clotfelter (1975) and Kane et al. (2006).

estimate the value parents place on school choice.[5] Hence, the analysis produces estimates of the housing market's valuation of school choice that are directly comparable to traditional estimates of market capitalization of school performance.[6] In our initial boundary discontinuity design, we relate price differentials between homes on either side of a district boundary to the option to send their children to a third district. We then consider how the capitalization gradients with respect to distance from and school performance within the potential district of changes with access to choice. We further check robustness by restricting attention to sales close to the district of choice, and explore a wide variety of bandwidths. With each strategy, we define treatment according to access to school choice as well as openness to school choice to capture the effects of IDSC on both sending and receiving districts. Last, we examine capitalization of choice across a district boundary. We do this first using similar strategies as those previously described. Next, we match home sales across district boundaries and relate the price differential to the differential in school performance, the availability of choice between districts, and the interaction between these two. This analysis provides estimates of the school performance home-price premium as well as the valuation of school choice in proportion to the difference in school performance.

We find a positive home-price premium associated with access to higher-performing school districts. These results are robust across multiple specifications and identification strategies. On average, we find mixed results regarding the presence of a home price premium associated with residential based access to the next-nearest district or a home price penalty associated with openness to school of choice students. Using border-by-year fixed effects in a boundary discontinuity design we find around a 3 percent premium for access the choice and a 3 percent penalty for openness to accepting school of choice students. These estimates are sensitive

[5] Refer to Black and Machin (2010) for a survey of this literature.
[6] For examples see Black (1999), Gibbons et al. (2013), Bayer et al. (2007), and Kane et al. (2006)

to specification. However, even under our most robust designs, we continue to find a premium (penalty) to access (openness) to IDSC close to the border with the districts of choice. This capitalization of choice decreases as distance between residence and choice district grows. We also find evidence that as the school performance differential between resident and choice districts grow, the capitalization of school performance grows as well. Point estimates imply that residential access to IDSC raises home prices by 10 percent in homes that immediately adjacent to districts of choice that are one standard deviation above average. Conversely, we find a similar magnitude penalty for homes in receiving districts adjacent to the border with schools one standard deviation below average. We also find suggestive evidence that charter or private schools within the vicinity erode the capitalization of access to choice and have no discernable impact on the capitalization of openness to choice. Roughly 50 – 80 percent of the 30 percent price differential attributed to a 20 percent difference in school performance disappears under inter-district choice. These results indicate that parents value school choice quality, but at a lower level than they value resident school performance.

Our results provide a valuable contribution to an existing literature on parental valuation of school choice that is currently mixed. Whereas Reback (2005) finds that expanding school choice in Minnesota increases home values in sending districts and decreased home values in receiving districts, Imberman et al. (2014) finds no appreciation of homes in Los Angeles with the entrance of charter schools in the neighborhood. In contrast with these earlier studies, we rely on plausible exogenous spatial variation around otherwise arbitrary administrative boundaries. In doing so, this work avoids potential confounding intertemporal variation in prices with a changing schooling landscape. Furthermore, Rosen's (1974) model of uncovering implicit prices applies to a single equilibrium as represented by a single cross-section of home-price data.

Interpretation of price changes driven by amenity changes over multiple time equilibria is less straightforward.[7] By providing estimates using within boundary-year variation, we not only provide strong identification, but also estimate the willingness to pay for school choice.

The remainder of the paper is structured as follows. Section 2 provides background on IDSC policies in Michigan and previous literature, and Section 3 discusses the empirical specification used in our analysis. Section 4 then presents the data sources used in our analysis, Section 5 performs a validity check on our empirical strategy, and Section 6 presents the results of our analysis. Section 7 concludes, discussion the implications of our analysis.

2 Background

Parental valuation of school performance is the subject of a longstanding debate in the economics of education. The recent literature that uses more advanced techniques such as boundary discontinuities dates back to Black (1999) and is summarized in a recent review article by Black and Machin (2010).[8] Note that quality of school choice may be valued differently based on the salience of the quality to parents and parental valuation of the transportation costs incurred by transporting their child to the school. Two studies most similar to this work are Imberman et al. (2014) and Reback (2005). Imberman et al. (2014) examine how housing prices react to the entrance of charter schools in Los Angeles. Reback (2005) examines changes in property values over time in Minnesota as they relate to the availability of IDSC options. Relative to these previous studies that relied on intertemporal variation, our boundary

[7] See Banzhaf (2015) for a discussion of the interpretation of difference-in-differences estimates of capitalization.
[8] Recent examples include Gibbons et al. (2013), Bayer et al. (2007), Kane et al. (2006), and Figlio and Lucas (2004).

discontinuity design is robust to differential trends between school district attendance zone housing markets.[9]

In this study, inter-district school choice refers to Michigan's “schools of choice” program, which allows students to attend a school outside of their resident school district.[10] In Michigan, IDSC is voluntary and school districts decide whether to participate in the school choice program. It is important to note that the school districts have multiple dimensions of choice when deciding whether to allow IDSC students. First, the district can set different numbers of slots for each school-grade combination. Most importantly, however, districts also decide whether to allow all students outside of their school district or simply students outside their school district who reside within the boundaries of their Intermediate School District (ISD).[11]

After the number of slots is set, districts get no discretion over which students to admit and must use a lottery to determine admittance if a particular school-grade combination is oversubscribed. Note that some school districts in Michigan also have intra-district choice programs, which allow students to attend schools within district other the school assigned to them based on residential location. These programs vary across districts in their implementation and are considered outside the scope of the proposed study.

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[9] Machin and Salvanes (2010) also examine differential access to school choice, but their results are primarily applicable to the debate over parental valuation of school quality. In addition, they study Norway and it is an open question as to whether their results would generalize to school choice programs in other contexts. Fack and Grenet (2010) examine public and private school valuation, but examine private schools in Paris that are almost entirely publicly-funded.

[10] Further information on the inter-district choice program in Michigan may be found in Section 5-I of the Michigan Pupil Accounting Manual, which includes a discussion of the differences between Section 501 and Section 501c school choice (Michigan Department of Education, 2016a).

[11] Each school district is nested within ISDs, which provide higher-level administrative services for groups of school districts, but typically do not make the same amount of day-to-day financial decisions as school districts. These programs are referred to as “Section 501” (within ISD) and “Section 501c” (outside ISD) inter-district choice, respectively.

Since the implementation of Proposal A in 1995, school districts in Michigan receive the vast majority of their funding from the state government. School funding is primarily based on a per-pupil "foundation allowance," which is the amount given to a school for each student attending the school. These amounts vary between districts and are determined in large part by millage rates and pre-1995 school spending levels. If a student participates in inter-district choice, the school receives the minimum of the foundation allowance in the sending district and the foundation allowance in the receiving district. Hence, the marginal revenue gained by the district for enrolling an additional IDSC student is guaranteed to be less than or equal to the marginal revenue gained by enrolling an additional resident student.

3 Data

The analysis draws on data from three disparate sources. We use housing sales data from 2007-2009 data provided by Corelogic as the source of the most recent home prices. See Figure 1 for a map of covered counties. These data contain 134,372 home sales across 557 border-years. The data set covers the majority of major cities and towns in the state of Michigan, and the covered counties contained over 68 percent of the state's resident population in 2010. In addition to home prices, these data also contain property acreage, building size and age, and number of bedrooms and baths.

These home characteristics are summarized at the top of Table 1. In these data, the average home sold for $122,977 with a standard deviation (SD) of $142,886. We also show summary statistics at bandwidths of 1, 0.5, 0.25, and 0.125 miles to reflect the changing composition of our sample as we restrict attention to properties close to administrative boundaries in our boundary discontinuity designs. In general, the homes are more modest closer to the boundary with the average home selling for $103,517 within an eighth-of-a-mile from the district border.

Administrative school district boundaries are publicly available and published by the U.S. Census Bureau, as are the boundaries of census blocks and charter school locations.[12] From these data we calculated distances between district boundaries and census blocks in which home sales transpired. The same was done for charter schools. The average home sale is a mile from the district boundary with a SD of 0.96 miles.

Information on school and district performance as well as flows of IDSC students is made publicly available by the Center for Educational Performance and Information (CEPI) and provides a description of how many students transfer between any given pair of school districts. As our primary measure of district performance we use an average of school scores, where the school score is an average of grade-level-standardized scale scores. We present the raw scaled scores both disaggregated by grade and averaged in the middle of Table 1. The standardized measures of school performance appear immediately below. As noted in Kane et al. (2003), it is important to note the magnitude of SD when using standardizations. Here, when averaging across schools, the SD grows substantially. Whereas according to Black (1999) a 1 SD increase in test scores translates to roughly 5 percent of the mean, in our context 1 SD increase in scores is roughly 20 percent of the mean.

While this latter data set does not provide documentation of whether school districts accept students from outside of their school district, it can be inferred that, conditional on distance and district characteristics, if a school district enrolls no school-of-choice students, there are likely no IDSC opportunities available to residents of the sending school district. We define

[12] GIS software was used to calculate distances between census block, school districts, and charter and private schools.

a district as open to the resident district if it enrolls more than 10 school-of-choice students from the resident districts. Approximately half our sample has access to attending school in the next-nearest district.[13]

We further match these data to demographic characteristics of occupants living at the home-sale addresses during the 2010 decennial census. Similarly, we measure the racial and home-ownership composition of the neighborhood using census block averages from the 2010 census. As the survey was conducted 1-3 years after home-sales, we expect some mobility induced measurement error is these variables. Thus, we include them primarily as a robustness exercise.

4 Empirical Model

We employ different empirical strategies related to or extending boundary discontinuity designs utilized in previous work on the valuation of neighborhood schools (e.g. Black, 1999; Bogart and Cromwell, 2000; Kane et al., 2005; Davidoff and Leigh, 2006; Fack and Grenet, 2010; Bayer et al, 2007; Ries and Somerville, 2010; Gibbons et al., 2013). Since this earlier work relies on discontinuous changes in school performance across geographical borders, access to choice in schooling beyond neighborhood schools presents a potential threat to validity. Here, we focus on border discontinuities in access to schooling choice to estimate parents' valuation of additional schooling options.

Sherwin Rosen's (1974) canonical work proposes that researchers may uncover the value of local amenities for which no direct market exists, by disentangling the price of a bundled good (such as a home) into the implicit prices of its individual components (such as bedrooms, local

[13] In unreported regression we analyze the data with different thresholds for defining choice, and our standard results hold.

school performance, or additional schooling options). Within Rosen's framework, consumers maximize their utility by setting their price/amenity indifference curves tangent to the hedonic price function, such that their marginal willingness to pay for a particular amenity equals the slope of the hedonic price function. As a starting point, consider the following general hedonic price function:[14]

$$p = s(b)\eta + c(b)\beta + x(b)\gamma + g(b) + u$$

Here, *p* represents the housing price, *s(b)* is the expected school "quality" attained in the resident school district for residence b, *c(b)* captures the availability of additional schooling options to households living in residence b. Naturally, β serves as the relevant slope which reflects consumer's valuation of the additional schooling options. *x(b)* is a vector of housing characteristics, and *u* is an error term that is assumed to be independent of *x*, *r*, and s. *g(b)* represents the unobserved determinants of housing prices that may be correlated across nearby houses and with resident or choice schooling quality.

The intuition of the boundary discontinuity strategy is to compare sufficiently nearby residences such that $E[g(b) - g(b')|x, c, s] = 0$. This implies that the strategy requires finding instances where $E[g(b) - g(b')|x, c, s] = 0$, but there is still variation in $\Delta s(b, b')$ and $\Delta c(b, b')$.

Our first proposed analysis makes use of administrative boundaries in Michigan to find cases where $\Delta c(b, b')$ and $\Delta s(b, b')$ vary, while in principle being able to realistically maintain the assumption that $E[g(i) - g(j)|x, c, s] = 0$. In practice, we vary the distance to the border from one to one-tenth of a mile with the thought that closer to the border, properties will be more similar though smaller in number. With a sufficiently tight bandwidth around the border, while

[14] This equation reflects a standard starting point in the literature (e.g., Black and Machin 2010, Gibbons et al. 2013), extended to incorporate the valuation of school choice quality.

sacrificing efficiency, the border and time fixed effects more plausibly capture differences in *g(b)*. As with prior work, we assume that with tight geographic bandwidths the physical landscape does not differ substantially on either side of the border (e.g., Black and Machin 2010, Gibbons et al. 2013).

We construct our measure of choice, c_{bjt}, as an indicator for whether the nearest district to the border area (as opposed to the comparison district across the border) is of higher quality than the resident district and accepts students from the resident school district.[15] In this way we further divorce our measure of choice from differences in school performance between districts on either side of the administrative boundary.

Following Beyer et al. (2007) we further test the robustness of our results to household characteristics as well as characteristics of the relevant neighborhood. The neighborhood demographic controls serve to mitigate potentially bias inducing differences in neighborhood characteristics across district boundaries. The home buyer controls serve to hold constant the characteristics of the marginal buyers whose preferences hedonic price analysis reveal. Thus, we present results both with and without neighborhood and home-buyer demographic controls.

As our data covers many boundaries over multiple years, we use fixed effects to accommodate unobserved locational and temporal heterogeneity. There multiple ways of mitigating potential bias from such unobservable heterogeneity, each with associated robustness and efficiency properties. We take a three approaches to highlight the sensitivity of our results. First, we include border and year fixed effects separately, which absorb unobserved time-

[15] We may worry that school districts on either side of the boundary differ in quality. Thus, by defining our treatment variable by sending (or receiving students) and differing in quality, we may be confounding differences in quality with differences in access. We perform similar analysis defining IDSC only by accepting 10 students or more from the other side of the district and restricting the sample to boundaries in which the next-nearest district has high quality than both border districts and we have variation in access to IDCS. While the data restriction is significant we continue to find a home price premium on access to IDSC and a penalty to accepting IDSC students.

invariant border characteristics and general time trends. Second, we replace these with border-by-year fixed effects that allow for differential boundary specific time trends. Third, we use border-by-next-nearest-district-by-year fixed effects to ensure that the potential district of choice is the same for those who do and do not have access to it. Thus, in our last specification, we estimate the following equation:

$$p_{injt} = \beta_1 s_{injt} + \beta_2 c_{injt} + X_{injt}\gamma_1 + +f\left(BD_{ij}\right) + h\left(NND_{inj}\right) + \theta_{njt} + u_{injt},$$

where p_{injt} is the log sale price of house *i* with district *n* as the next-nearest district on boundary *j* in year *t*. The primary variable of interest is c_{injt}, which represents an indicator for whether the next-nearest district to the border is of higher quality than the resident district and accepts students from the resident school district. s_{injt} represents the quality of resident district schools. X_{injt} is a vector of house-level controls including number of bedrooms, number of bathrooms, square footage, lot size, month of sale, and age of the home, as well as demographic characteristics such as racial shares and ownership rates within the census block and race and ownership of the buyer.[16] $f\left(BD_{ij}\right)$ is a parametric function of distance to the border and $h\left(NND_{inj}\right)$ is a parametric function of distance to the next-nearest district. θ_{njt} represents a next-nearest-district-by-border-by-year fixed effect.[17] Finally, u_{injt} represents an error term that is assumed to evolve continuously at the border so that it is conditionally uncorrelated with the explanatory variables within a given bandwidth of the border.

[16] We present results both with and without neighborhood and home-buyer demographic controls. This is in part because it is a modestly restricted sample on which we have demographic information. Secondly, it allows us to relate our estimates to prior work that did not have access to such data. Third it shows the robustness of our results to these potentially confounding factors. Our demographic indicators include race and home-ownership.

[17] We also include border and year fixed effects separately and border-by-year fixed effects, which sacrifice some robustness for modest efficiency gains.

Following Reback (2005), we perform similar analysis for the capitalization of school choice into home values in receiving districts. If parents value the composition of the schools for instance, we expect capitalization of school performance to differ in districts accepting outside students. Thus, we estimate the following:

$$p_{injt} = \beta_1 s_{injt} + \beta_2 r_{injt} + X_{injt}\gamma_1 + f(BD_{ij}) + h(NND_{bnj}) + \theta_{njt} + u_{injt}$$

Here, r_{bnjt} represents an indicator for whether the resident district accepts students from the next-nearest district, and whether it is of high-quality than the next-nearest district. We define district as open to given sending district if it accepts ten or more students from the sending district.

The key assumption underlying both of these approaches is that conditional on covariates, there are no unobserved characteristics on either side of the border that are correlated with the explanatory variables and the difference in prices between houses. If this holds, this analysis isolates the part of housing price changes that are due to changes in residential schooling and school choice options.

We add a further layer of plausibly exogenous variation by including interaction terms of access (or openness) to school choice with distance to and school performance in the next-nearest district. The assumption necessary for this identification strategy is similar to that of differences in differences. For instance, regarding distance, we rest not on the similarity of property values across the border, but rather the similarity of the price gradient with respect to the distance to the next nearest district in the absence of school choice. This empirical strategy has the additional advantage of allowing us to also directly investigate the role of distance in determining the capitalization of school choice. The quality of the district of choice provides another margin along which parents' valuation of school choice may depend. Consequently, we also include an interaction between choice and the quality of the next-nearest district (nns_{njt}). We present the exact estimating equation below.

$$p_{injt} = \beta_1 s_{injt} + \beta_2 c_{injt} + \beta_3 c_{injt} \times NND_{inj} + \beta_4 c_{injt} \times nns_{njt} + \mathrm{x}_{injt}\gamma_1 + NND_{inj}\gamma_3 + f(BD_{ij}) + \theta_{njt} + u_{injt}$$

Here, the coefficients on the interaction terms $c_{injt} \times NND_{inj}$ and $c_{bnjt} \times nns_{njt}$ are the primary parameters of interest. They respectively describe the capitalization gradient with respect to distance and next-nearest district performance. The coefficient on c_{injt} captures the value of choice at zero distance from the next-nearest district where the district of choice is of average quality. The main effect of quality of the next-nearest district is omitted as it is absorbed by the next-nearest-district-by-border-by-year fixed effect θ_{njt}.

We again perform similar analysis regarding receiving schools. The interaction between openness to students from and school performance in the next-nearest district reveals parents' preferences for their children's peers. The interaction between openness to students from and distance to the next-nearest district allows homes near (and presumably most affected by) sending districts to have different price responses to school choice. Specifically, we estimate the following:

$$p_{injt} = \beta_1 s_{injt} + \beta_2 r_{injt} + \beta_3 r_{injt} \times NND_{inj} + \beta_4 r_{injt} \times nns_{njt} + \mathrm{X}_{injt}\gamma_1 + NND_{inj}\gamma_3 + f(BD_{ij}) + \theta_{njt} + u_{injt}$$

Accordingly, the primary variables of interest are the interaction terms $r_{injt} \times NND_{inj}$ and $r_{injt} \times nns_{njt}$. Again, they describe how the capitalization changes as distance to the sending district increases and as the quality of sending district falls.

5 Results

5.1 Capitalization of school performance using district border discontinuity designs

As noted in Black and Machin (2010) and Brasington (2002), one important assumption in hedonic analysis is that the housing supply elasticity is close to zero. This concern may be particularly relevant in our setting using boundary fixed effects to study IDSC. Here we are helped by the generally small district sizes in Michigan, particularly in the most populous counties which comprise our sample. For example, 15 other districts lie within 15 miles of the borders of Detroit Public Schools.

Further, to illustrate the comparability of our school district analysis to analyses using school catchment areas, we estimate the capitalization of school district performance along school district boundaries, similar to Black's (1999) analysis of school performance. Table 2 reports the results of this analysis with Figure 2 showing the evolution of point estimates as we restrict the bandwidth. Moving left to right, we begin with the full sample before tightening the bandwidth to the district boundary from one mile on either side down to one-tenth mile in Table 2 (one-twentieth mile in Figure 2) on the furthest right. Black (1999) finds a 20 percent gain in school test scores associated with a 7.5-20 percent increase in home prices. Our point estimates are remarkably close. The coefficient estimates in panel A imply that a 20 percent increase in test scores result in a 12-25 percent increase in home prices with all results significant at 99 percent confidence level. As in Beyer et al. (2007), adding demographic controls dampen the estimated capitalization of school performance, suggesting parents value the demographics of their neighborhood which correlates with school performance. From panel B, our estimates of the capitalization of a 20 percent increase in school performance drop to 10-17 percent laying exactly within the estimates found in Black (1999).

5.2 Capitalization of school choice using district border discontinuity designs

Table 3 presents coefficient estimates and standard errors for the housing-price capitalization of inter-district school choice in sending using our basic boundary discontinuity approaches. Table 4 presents similar estimates for the capitalization of IDSC in homes prices within receiving districts. Throughout both tables we use a bandwidth of 1 mile on either side of the border. Figures 3 and 4 depict our point estimates by bandwidths ranging from 1 to 0.05 miles. Moving left to right we begin with the most parsimonious specification including only resident district school performance, choice indicators, and distance, in addition to border, month, and year fixed effects. We then add our home characteristics in column 2, and further add home-owner, and neighborhood characteristics in column 3. In columns 4-6, we follow the same process with border-by-year fixed effects, and in columns 7-9 we do the same with border-by-next-nearest-district-by-year fixed effects.

From Table 3, in all specifications with border and year separate fixed effects and border by year fixed effects the capitalization of school choice is statistically significantly positive. The point estimates imply that the availability of attending schools in the next nearest district raises home prices by 3 to 6 percent. However, these point estimates fall when including border-by-next-nearest-district-by-year fixed effects and even become negative when controlling for relevant characteristics. These latter estimates are also substantially noisier, with the standard errors being approximately 70 to 80 percent larger than those using only border-by-year fixed effects. Consequently, while there is some evidence of positive capitalization on average, the sensitivity of these results warrants caution with interpretation.

Table 4 presents the results of similar analysis in receiving districts. Here, the coefficients on openness to IDSC are universally negative suggesting that home prices drop when district accept students from outside the district. Though at best tenuously statistically significant, these results generally imply a 3 to 6 percent average fall in receiving-district home prices associated with IDSC. These results are more consistent across specifications. Here the magnitude of coefficient estimates grows with the use of border-by-next-nearest-district-by-year fixed effects, and the standard errors increase by about 50 percent above those using just border-by-year-fixed effects.

The tables are consistent in the estimated capitalization of school performance. In both tables, the point estimates on school performance are remarkably stable across specifications of the fixed effects. However, covariates significantly alter the magnitude of our estimates of the capitalization of school performance in home prices. Adding home characteristics cause the estimated school performance premium to fall roughly a quarter. When demographic control are also included the resulting coefficients are just over half the magnitude of those found in the most parsimonious specification. This is in keeping with Beyer et al.'s (2007) finding that preferences over demographics potentially confound estimates of parents' willingness to pay for school performance.

Lot size, home square footage, number of bedrooms and bathrooms, and recency of build each add to the home's value. We also find a negative price premium on higher concentrations of Hispanics and African Americans in the neighborhood and a positive price premium associated with the concentration of owner-occupied homes. The two tables are also consistent in estimating the effects of other attributes which increase home prices such number of bedrooms and bathrooms and recency of the build.

5.3 Differences in quality and distance gradients with IDSC

We may expect the degree to which IDSC is capitalized into home prices to vary with proximity to the higher-quality, accepting district. As transportation costs presumably increase with distance, the value of choice becomes less capitalized into homes further from the district of choice. Indeed, a long line of previous research shows the capitalization of public amenities in home-prices decreases in distance from the amenity.[18] Further, while it is possible that parents value simply having options, parents may also value school choice as a mechanism to access higher quality schools. The following analysis provides a direct test of these hypotheses. Though less efficient, we conduct the subsequent analysis using the more robust border-by-next-nearest-district-by-year fixed effects and present the sensitivity to demographic controls.

Table 5 reports the coefficient estimates and standard errors across bandwidths from 1 to 0.1 miles from the border. Panel A reports estimates from regressions including home characteristics, distance to border, and month fixed effects in addition to the reported covariates and border-by-next-nearest-district-by-year fixed effects. Panel B adds census block demographic covariates and household demographic controls. Across both panels the point estimates imply that access to IDCS increases home values, though not statistically significantly so at tighter bandwidths and with only neighborhood demographic controls. From column 4 in panel B, the coefficient on IDSC implies that at the border access to an average school statistically significantly increases home values by 7 percent. Further, the gradient in capitalization statistically significantly negative across bandwidths and panels, implying the capitalization of access in home values is strongest in close proximity to the district of choice.

[18] For examples see Gibbons and Machin, 2005, Anderson and West, 2006, and Greenstone and Gallagher, 2008.

Though not statistically significant, the point estimates on the interaction between next-nearest district school performance and access to IDSC implies that the capitalization further increases with increases in the quality of the choice. Figure 7 depicts the home price capitalization of access to a district of choice that is 1 σ above the mean in quality and is immediately adjacent. This estimated capitalization is stable across bandwidths reflecting 10 percent price premium associated such access to choice.

Table 6 reports the estimated capitalization of openness to IDSC across bandwidths from 1 to 0.1 miles from the border. Here, across all panels and bandwidths we find that home prices fall in districts that receive students from the next nearest district. These estimates are general statistically significant. From column 4 in panel C, the coefficient on IDSC implies that at the border access to an average school decreases home values by 6 percent. Further, the negative coefficient on the interaction between openness to IDSC and the school performance in the next-nearest district, imply that the home price penalty to openness to choice grows as the performance of students of choice fall. The positive coefficient on the interaction between distance from the next-nearest district and openness to IDSC implies the negative home price capitalization of openness to choice is strongest in close proximity to sending districts. Figure 8 depicts the home price penalty to openness to a district that is 1 σ below the mean in quality and is immediately adjacent. This estimated penalty is still relatively stable across bandwidths reflecting a 9 - 15 percent price penalty associated with openness to choice.

When we model school choice, we find our estimates of the price premium for resident school performance generally increase, though not substantively or statistically significantly so. From column 4 in panel C of tables 5 and 6, we find that a one SD increase in school performance translates to a 13-15 percent increase in price compared to the 12 percent increase reported at the same 0.25 mile bandwidth in panel B of table 2.

5.4 Boundary corners discontinuity design

As an additional way to get at the valuation of choice close to the district of choice, we adopt what we term a boundary corners discontinuity design. Here we estimate the same model as above with the exception that rather than vary distance to the border *j*, in this specification we tighten the radius around a corner of three districts.

Table 7 reports the estimated capitalization of access to IDSC and how it changes with distance to and school performance of the next-nearest district. Again, across specifications and bandwidths the estimated coefficients on IDSC are positive. However, even though the magnitude is larger than those reported in Table 5, the estimates are much noisier and only occasionally reach statistical significance. The same is true for the interaction between choice and the next-nearest district. The coefficient is positive and large in magnitude suggesting the choice price premium grows with quality in the district of choice, however, the estimates a very imprecise. The gradient of home price capitalization of choice remains statistically significantly negative. Taken literally, the point estimates from column 4 of panel B imply just below half of the capitalization of having access to a 1 σ better district immediately adjacent remains at the edge of the bandwidth of 0.4 miles.

Table 8 reports the estimated capitalization of openness to IDSC and how it changes with distance to and school performance of the next-nearest district. The price penalty of openness to choice is consistent across specifications and grows in magnitude and statistical significance as bandwidths tighten. The interaction terms tell a similar story. The point estimates imply that this penalty to accepting students climbs as school performance in the next-nearest district falls and the penalty falls the further the property is from the border. However, these estimated gradients of capitalization are imprecise and only the interaction between IDSC and distance is statistically significant and only at wide bandwidths.

6 Validity

One key assumption underlying these analyses is that amenities do not vary discontinuously around administrative boundaries. Though we include covariates in our RD estimates, discontinuous changes in those covariates may be symptomatic of potential bias-inducing discontinuous changes in unobservable characteristics. To determine whether such discontinuities are present in the data, we estimate the following for each home characteristic, again varying bandwidths as with the initial boundary discontinuity approach:

$$X_{injt} = \eta\, s_{injt} + \beta\, c_{injt} + f\left(BorderDist_{ij}\right) + \tau_m + \theta_{jnt} + u_{ibnjt}.$$

Here, X_{injt} represents home characteristic of each sale, s_{injt} and c_{injt} represent school performance and school choice, $f\left(BorderDist_{ij}\right)$ is again a flexible function of distance from the border, and τ_m and θ_{jnt} represent month and district-by-next-nearest-district-by-year fixed effects respectively.

We report the results of the boundary discontinuity regressions in Table 9, such that each cell of the table is taken from a separate regression. We also depict the relationship between point estimates on IDSC and bandwidths in Figure 3. We report similar results for our corners boundary discontinuity design and nearest district designs in Tables 10 and 11 and Figures 7, 8 and 9 about which more detail will be provided in the subsequent section on robustness. Only year of build and number of bathrooms seem to be unbalanced by treatment in Table 9.

Naturally, with multiple hypothesis testing, some imbalance is likely to occur. Indeed, in Table 10 we show that as we restrict bandwidths around district corners, the coefficients and statistical significance on both variables fall reflecting balance over all variables.

In Table 11, we depict the results of unbalanced tests of covariates across IDSC where IDSC is defined as access to the district across the border. While this is potentially the most relevant district of choice, estimates of this design are also the most susceptible to sorting on unobservable characteristics. However, the unbalance is not consistent with higher or lower price characteristics. Whereas number of bedrooms is associated with larger more expensive homes, percent Black and acres are unbalanced in ways that our estimates suggest would decrease the value of the properties.

6 Additional Analyses

6.1 Nearest district

In each specification thus far, we focus on the availability of choice in the next-nearest district to the border so that our results will be less sensitive to unobserved differences in local amenities across district boundaries. However, the school district just across the border maybe the closest school district that accepts resident students. In such cases, these bordering districts may be the most relevant district of choice, and thus most likely to influence home prices in the resident district. This motivates our analysis below.

Here, we define choice, a_{injt}, as an indicator of whether the district across the border accepts 10 or more students from the resident district and is of higher quality than the resident district. We present the estimating equation below:

$$p_{injt} = \beta_1 s_{ijt} + \beta_2 a_{jt} + \beta_4 a_{jt} \times ns_{ijt} + X_{injt}\gamma_1 + h(NND_{inj}) + f(BD_{ij}) + \theta_{njt} + u_{injt}.$$

The primary variables of interest are a_{injt} and the interaction, $c_{injt} \times ns_{ijt}$, where ns_{ijt} measures the average school performance in the district across the border from the resident district.

Table 12 presents the results from this analysis with and without demographic controls. In both specifications, we find no evidence of an IDSC price premium when the nearest district is of average quality. However, we consistently find a statistically significant positive coefficient on the interaction term between choice and nearest district performance. Across all specifications and bandwidths, we find that access to a district 1 σ above average increases home values by 6 - 11 percent. While these remain smaller than the estimates for the capitalization of resident school performance, they remain statistically and economically meaningful. Further, the estimates generally grow close to the border, further suggesting that transportation costs in accessing choice are meaningful mitigating factors. One issue with this approach is that the effects are identified off of border in which one district is sending and the other is receiving. Since in our next-nearest district analysis prices fall in receiving districts, this analysis may bias us away from finding an effect.

6.3 Matched transactions

Our final specification is designed to capture parents' valuations of IDSC in both receiving and sending districts on either side of the border. While the critique that district boundaries create discrete unobserved changes in local amenities is still present, this approach uses multiple strategies to mitigate these concerns. First, we match home sales across administrative district borders within each year of sale based on the minimum distance between properties as does

Gibbons et al., 2013.[19] We then take the first difference of price and covariates to remove unobserved local year effects. We then use a type of difference-in-differences specification to capture the capitalization of the difference in school performance Δs_{jt}, an indicator for the higher-performing district accepting students from the lower-performing district a_{jt}, and the interaction of the two $\Delta s_{jt} \times a_{jt}$. Lastly, we vary the bandwidth around the border to again focus our attention to areas in which unobserved differences in geography are minimal.

$$\Delta p_{ijt} = \eta\ \Delta s_{jt} + \beta a_{jt} + \gamma\ \Delta s_{jt} \times a_{jt} + \Delta \mathrm{X}_{\mathrm{ijt}}\gamma + f\left(\Delta Dist_{ij}\right) + \Delta u_{ijt},$$

where Δp_{mjt} is the difference in log sale price between home *b* and its closest propensity score matched home across boundary *j* in year *t*. The sample is constructed such that Δs_{bjt} in non-negative; that is each home-sale in the lower-performing district is matched to the closest home-sale in the higher-performing district. The primary variable of interest is the interaction, $\Delta s_{jt} \times a_j$, where a_j indicates whether the higher-performing district on boundary *j* accepts students from the lower-performing school district across the boundary. This interaction term is key to providing an estimate of the valuation that parents place on school choice quality as opposed to pure value of having a choice. $\Delta \mathrm{X}_{\mathrm{ijt}}$ is a vector of differences in the same house-level controls used is previous specifications, and $f\left(\Delta Dist_{ij}\right)$ is a parametric function of distance between the properties.[20] Finally, Δu_{ijt} represents the difference in error terms that we assume to be conditionally uncorrelated with the differences in explanatory variables.

Table 13 reports results from our matched transactions approach. Here we estimate the value parents place on access to higher-performing schools directly across an administrative

[19] I practice we, match on distance between census blocks. In the event that there are more than one property sale in a given year, the matching property is drawn at random.
[20] In practice, distance is measured using census block centroids.

boundary using matched property sales.[21] Here we control both for differences in school performance between matched property sales and for whether the higher-performing district accepts students from the lower-performing district. Our primary variable of interest is the interaction between the two. We begin with the most parsimonious specification including only our main effects and their interaction. We then add covariates before restricting the bandwidth from 1 mile on either side to one-tenth-mile on either side of the border.

In this specification across all bandwidths, we find that a 20 percent difference in school performance corresponds to a 27-38 percent difference in home prices, but that price difference is nearly entirely erased by the option to attend school in the higher preforming district (point estimates ranging from 22-32 percent). These point estimates largely fall as we tighten the bandwidths, causing us to prefer these smaller estimates. With larger bandwidths, we also find that choice even with a negligible difference in school performance corresponds to an increase in the price differential. However, these point estimates drop more dramatically than the other two with tightening bandwidths, and lose statistical significance with a bandwidth of 0.15 miles.

6.4 Charter and Private Schools

Another major source of school choice in Michigan comes from the charter and private sectors, which each serves roughly 10 percent of the state's students.[22] For parents interested in sending their children to schools other than those in the resident district, charters and IDSC may serve as substitutes. Given that there are no residential constraints on who may attend a given charter or

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[21] Table 13 reports results from matching home sales in lower-performing districts to the nearest home-sales in the higher-performing district. Table A.5 of Appendix A shows the symmetric results when home-sales in the higher-performing district are used as the basis for matching. The results are very similar between the two.

[22] Sources: Michigan Department of Education (2016b), Michigan Association of Public Schools (2016), and Private School Review (2016).

private school, such additional choice may alter the demand of inter-district schooling choices. Consequently, we expect that increases in the number of charter or private schools would erode the capitalization of IDSC within the housing market.

We explore this possibility explicitly by including both a measure of charter or private school's penetration into the local schooling market and an interaction between charter or private presence and access to inter-district choice. We use an indicator for whether at least one charter or private school is present in either district along the border.

Table 14 and figure 11 present the impact of the presence of charter or private schools on the capitalization of access to IDSC. On the interaction of charter or private presence with IDSC, we find consistently negative sign which is often statistically significant. This implies that the presence of alternative schooling options in the form of charter or private schools erodes capitalization of IDSC. Figure 11 shows the evolution of the point estimate of the home-price premium for access to an immediately adjacent district of choice that is 1 σ above average with and without charters or private schools along the border. Across all bandwidths the capitalization of such IDSC is about 10 percentage points lower in the presence of charter or private schools. While these point estimates are not statistically different from each other they do provide suggestive evidence that the capitalization of one form of choice is sensitive to the availability of substitutes.

Table 15 and figure 12 provide similar estimates of the impact of alternative schooling options on the capitalization of openness to IDSC. Whereas, there is clear reason to believe the availability of substitutes would erode parents' valuation of access to IDSC, there is no theoretical reason to predict similar effects for the capitalization of IDSC in receiving districts. Indeed, we find no evidence of differential capitalization of openness to IDSC. Figure 12 shows no difference in levels between borders with or without charter or private schools. In table 15, the interaction between openness to IDSC and the presence of charter or private schools is small in magnitude, inconsistent, and statistically insignificant.

7 Conclusion

While numerous studies investigate the extent to which school performance is capitalized into housing prices, relatively few studies examine whether housing markets value access to school choice. We use administrative boundary discontinuities related to local home prices to examine whether parents value additional schooling options and openness to students utilizing school of choice. Using both boundary and matched property transactions approaches, we find evidence that parents value access to improved school choice, but at lower levels than they value resident school performance. We also find that parents in receiving districts place negative value on openness to students of choice.

Further, we consider several forms of mediating factors, such as distance from districts of choice, school performance differentials, and additional local schooling choices provided by the charter and private sectors. In each case, these mediating factors have the predicted effects on the IDSC home price premium. As expected, the capitalization of schooling choice is higher near to district borders, consistent with transportation costs mitigating the net benefit of the local amenity. We also find that the price differential between matched home sales on either side of a district boundary grows with the differential in school performance between the two districts. Lastly, we find that both the presence of charter and private schools within the resident district as well as the number of charters in close proximity undermine the capitalization of IDSC into home prices. This is consistent with parents' demand for IDSC being sensitive to the supply of close substitutes. Cumulatively, while there is mixed evidence of valuation of choice averaged over the market, the evidence suggests that parents do consider and pay for access to choice, and negatively view openness to students of choice.

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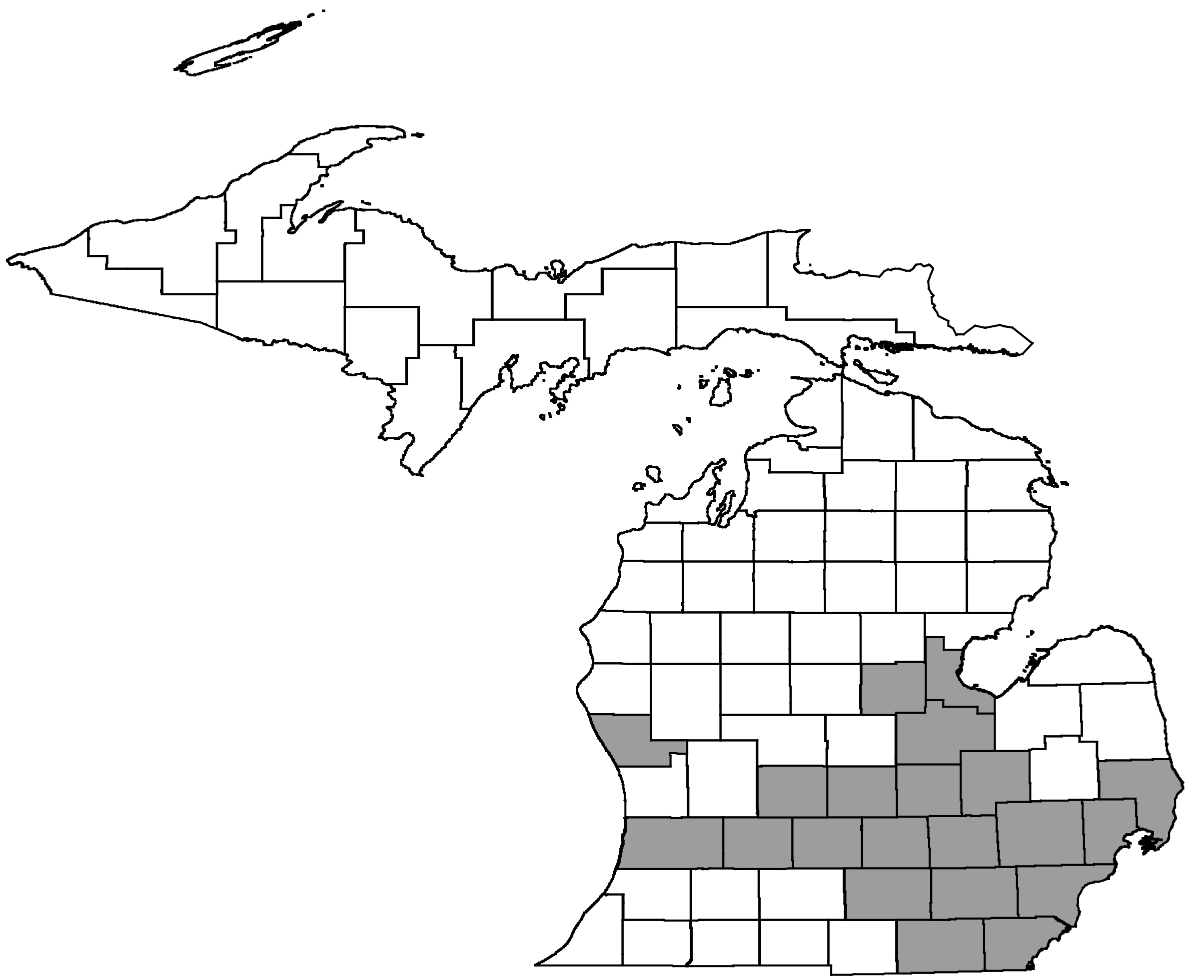
Figure 1: Geographic Distribution of Analysis Data Set



Source: Linked CoreLogic property tax data and publicly available MEAP results. Shading indicates data availability in a given county.

Figure 2: School performance Point Estimates by Bandwidth

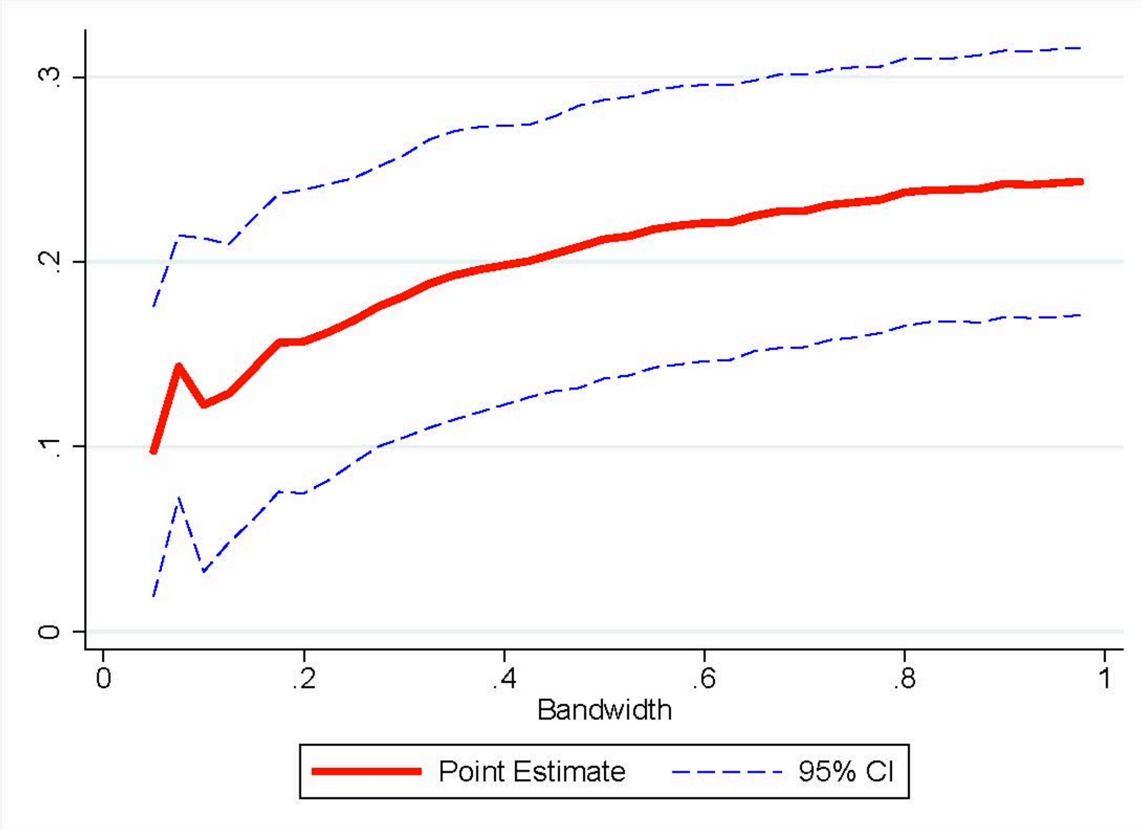
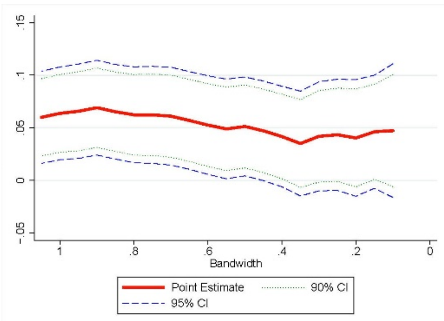


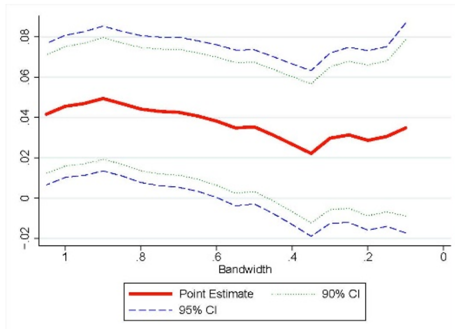
Figure corresponds to regression results reported in table 2. Bandwidths range from 0.05 to 1 miles from either side of the border. 95 percent confidence interval reflects border clustered standard errors.

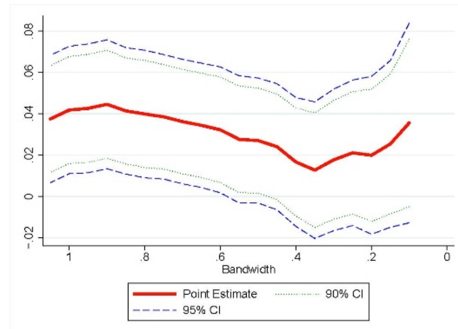
Figure 3: Sending district IDSC coefficients over bandwidths

Panel A: Border and year fixed effects

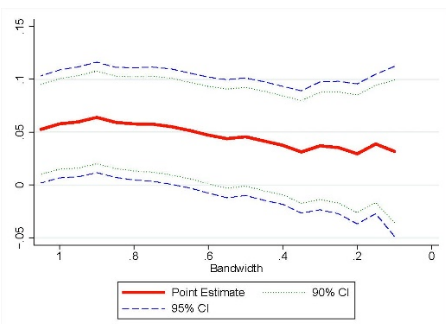
Parsimonius | *Household Covariates* | *Demographic Covariates*

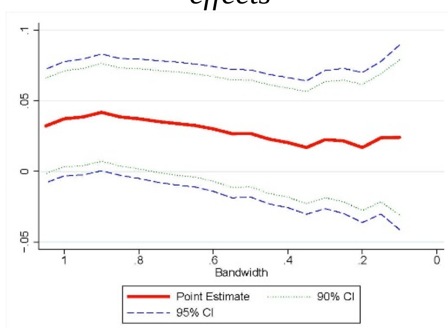


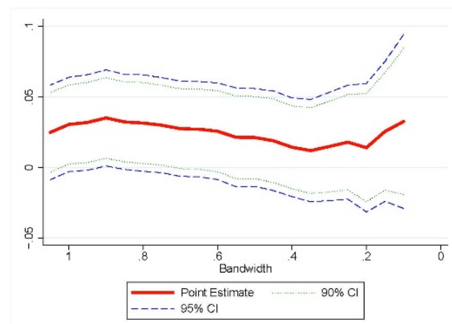




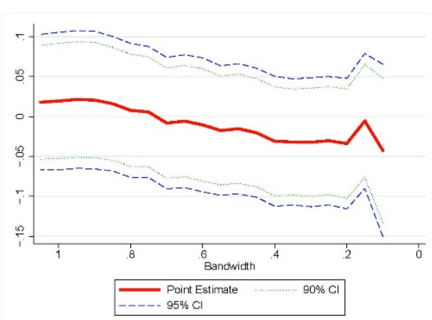
Panel B: Border-by-year fixed effects

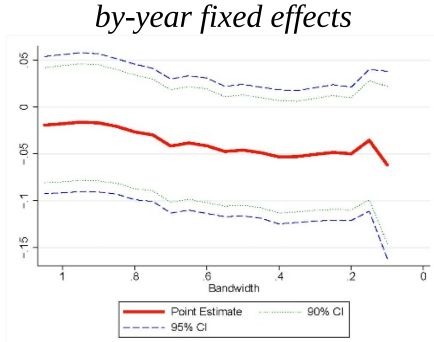






Panel C: Border-by-next-nearest-by-year fixed effects





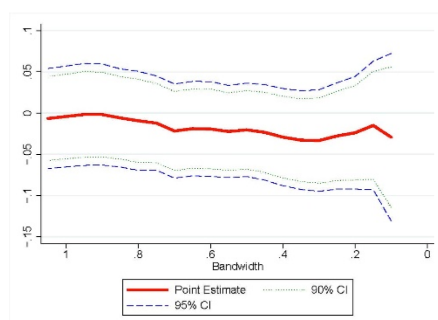
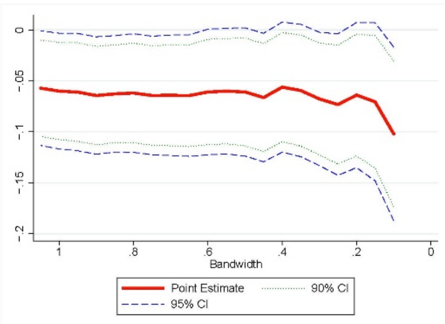


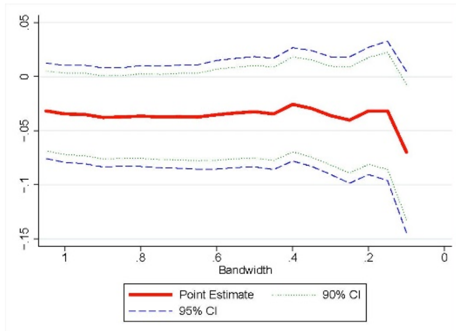
Figure corresponds to regression results reported in table 3. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

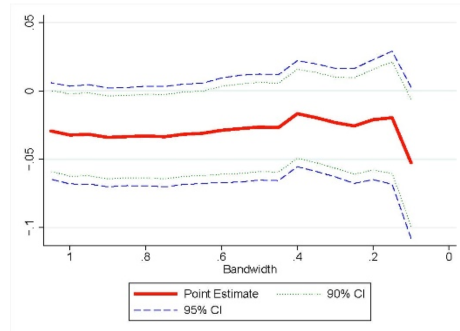
Figure 4: Receiving district IDSC coefficients for receiving districts over bandwidths

Panel A: Border and year fixed effects

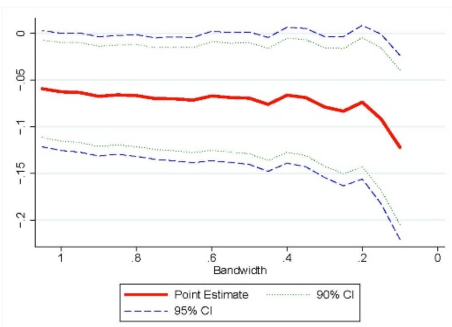
Parsimonius	*Household Covariates*	*Demographic Covariates*

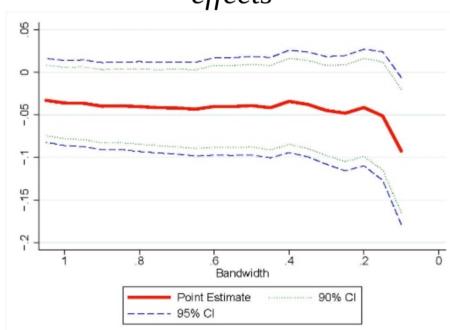


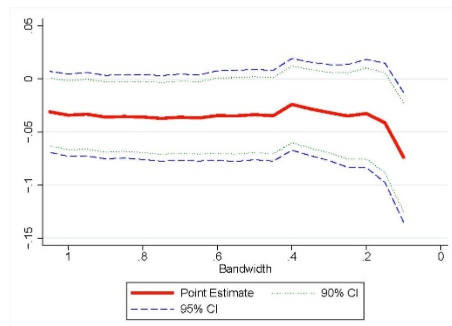




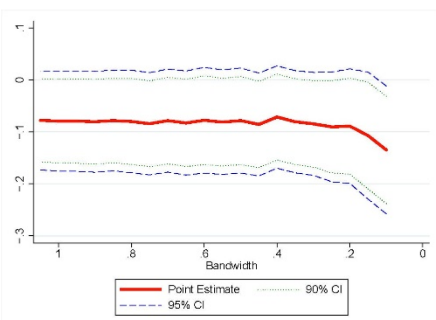
Panel B: Border-by-year fixed effects

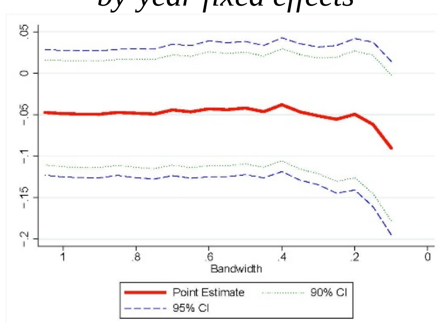






Panel C: Border-by-next-nearest-by-year fixed effects





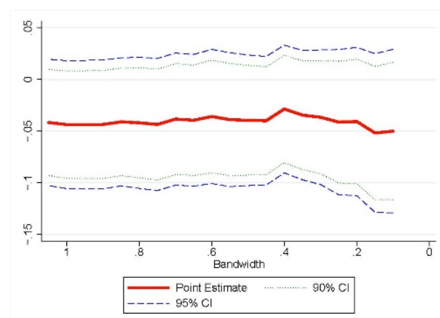


Figure corresponds to regression results reported in table 4. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

Figure 5: Home price premium of IDSC access to a 1 σ above average IDSC school at the border by bandwidths

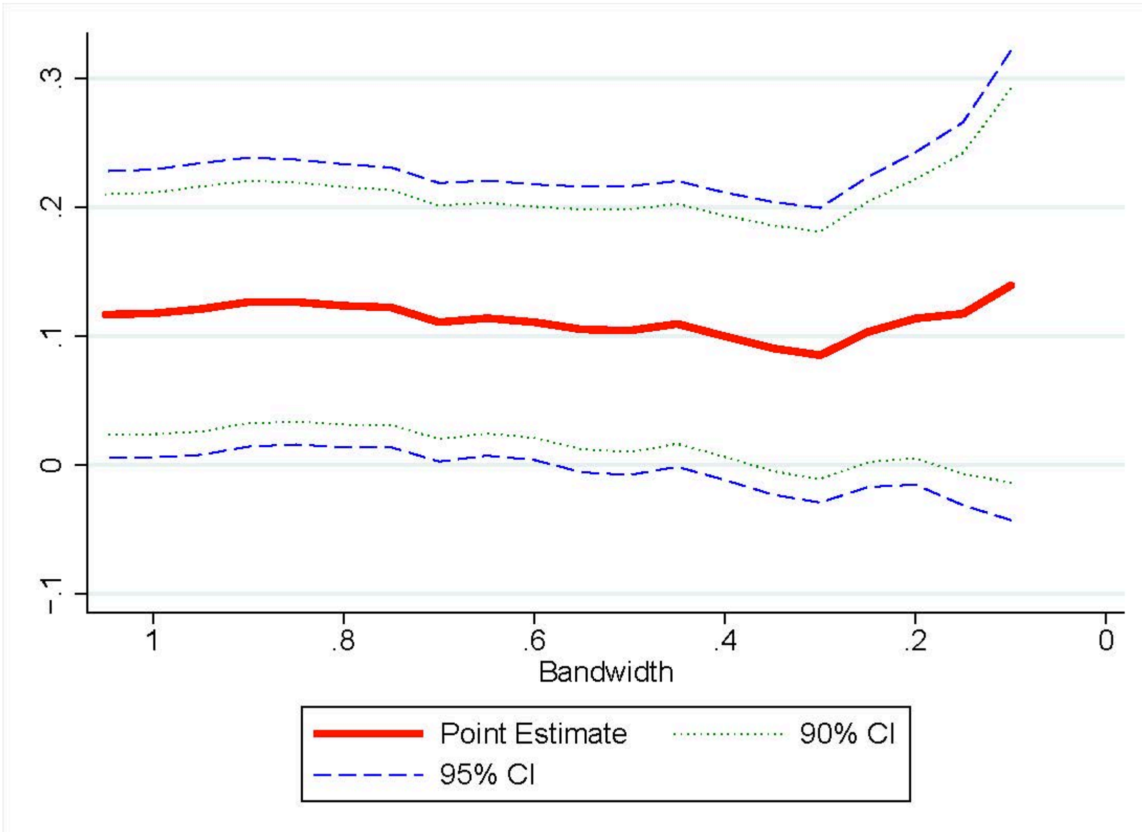


Figure corresponds to regression results reported in table 5. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

Figure 6: Home price penalty of openness to 1 σ below average IDSC students at the border by bandwidths

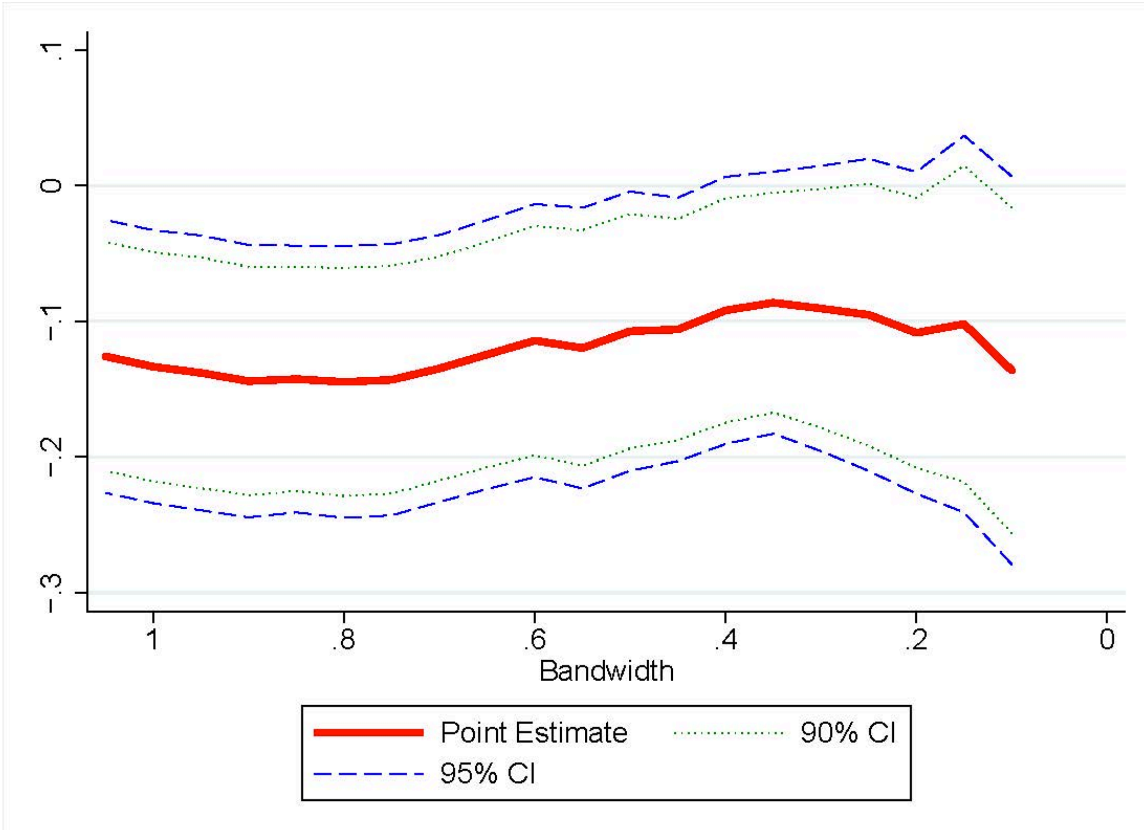
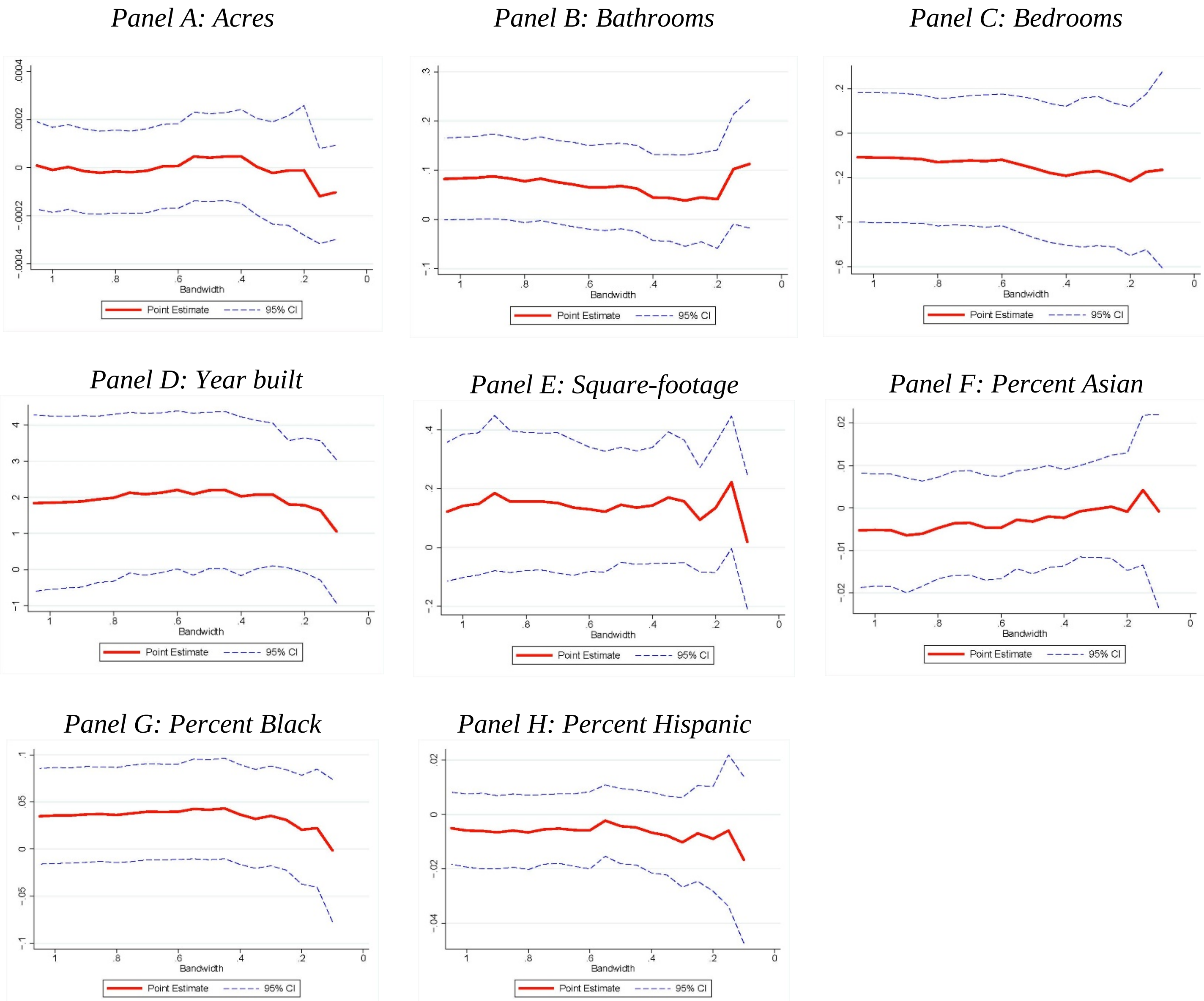


Figure corresponds to regression results reported in table 6. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

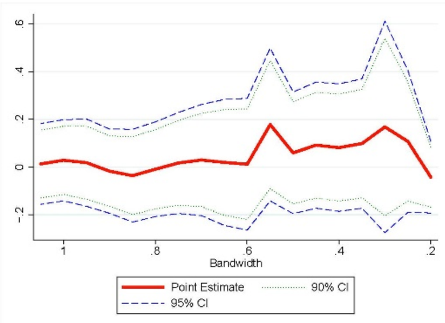
Figure 7: Balance of Covariates by Bandwidth with Next-Nearest District BDD



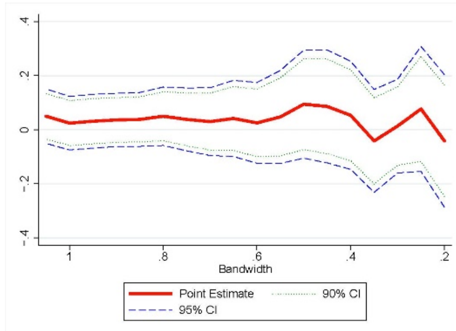
Each panel corresponds to estimates from separate regressions. Figure corresponds to regression results reported in table 9. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 percent confidence interval reflects border clustered standard errors.

Figure 8: Balance of Covariates by Bandwidth with Next-Nearest District Corners BDD

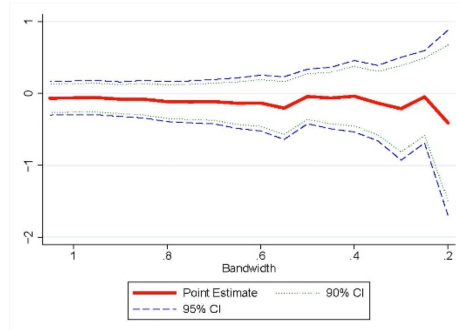
Panel A: Acres



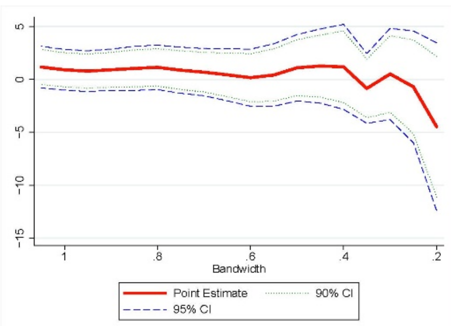
Panel B: Bathrooms



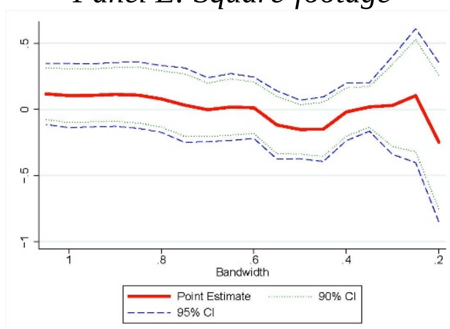
Panel C: Bedrooms



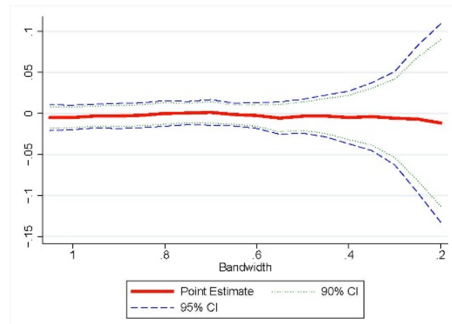
Panel D: Year built



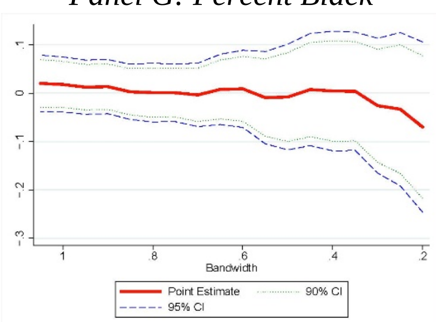
Panel E: Square-footage



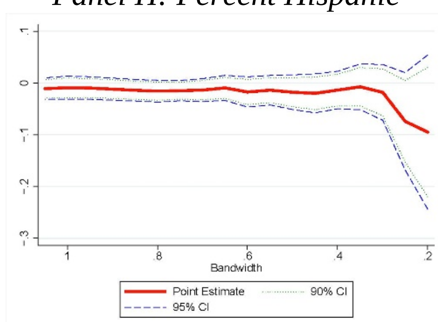
Panel F: Percent Asian



Panel G: Percent Black



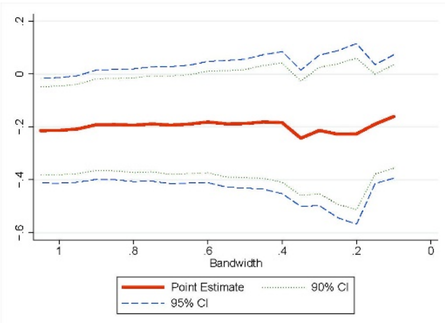
Panel H: Percent Hispanic



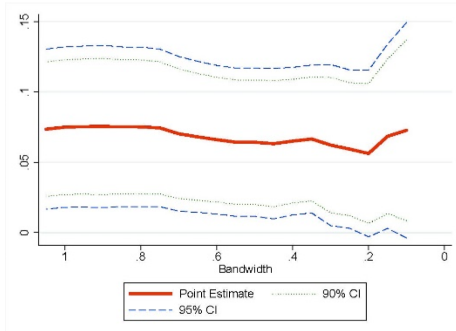
Each panel corresponds to estimates from separate regressions. Figure corresponds to regression results reported in table 10. Bandwidths range from 0.2 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

Figure 9: Balance of Covariates by Bandwidth with Nearest District Approach

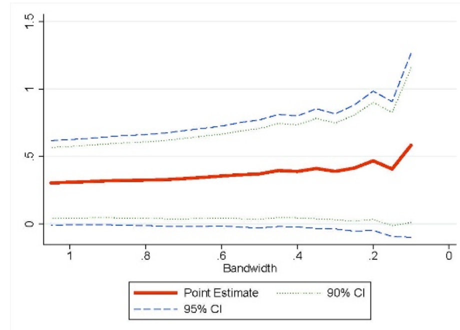
Panel A: Acres



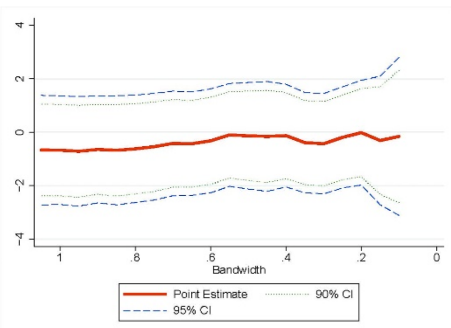
Panel B: Bathrooms



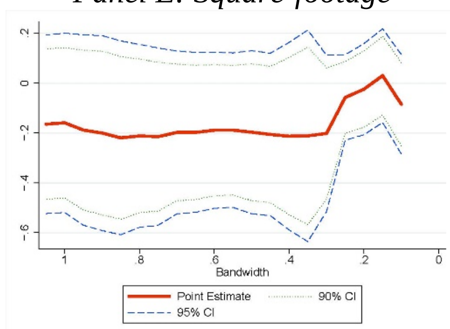
Panel C: Bedrooms



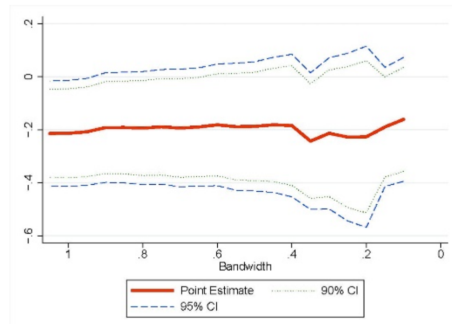
Panel D: Year built



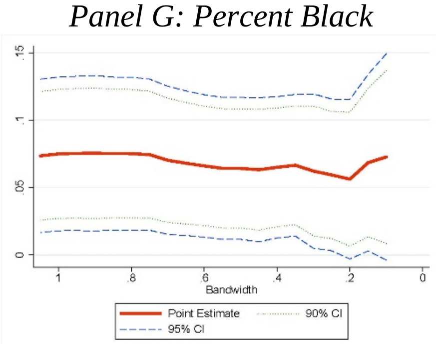
Panel E: Square-footage



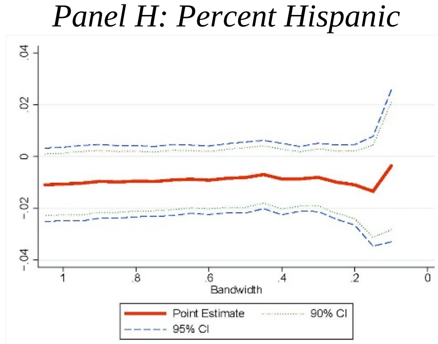
Panel F: Percent Asian



Panel G: Percent Black



Panel H: Percent Hispanic



Each panel corresponds to estimates from separate regressions. Figure corresponds to regression results reported in table 11. Bandwidths range from 0.1 to 1 miles from either side of the border. 95 (90) percent confidence interval reflects border clustered standard errors.

Figure 10: Effect of IDSC × Δ School performance on home price differential across bandwidths in matched transaction approach

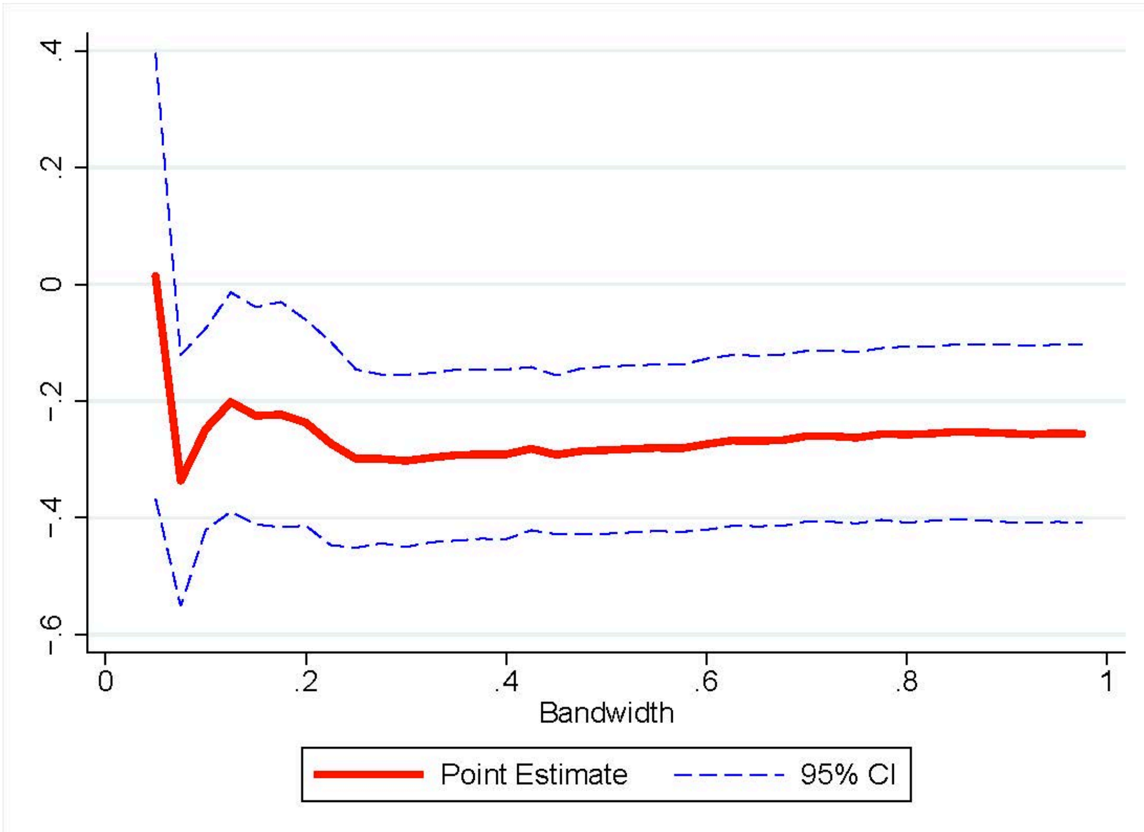


Figure corresponds to regression results reported in table 13. Bandwidths range from 0.1 to 1 miles from either side of the border. 90 percent confidence interval reflects border clustered standard errors.

Figure 11: Home price premium of IDSC access to a 1 σ above average IDSC school at the border by bandwidths with and without charter and private schools

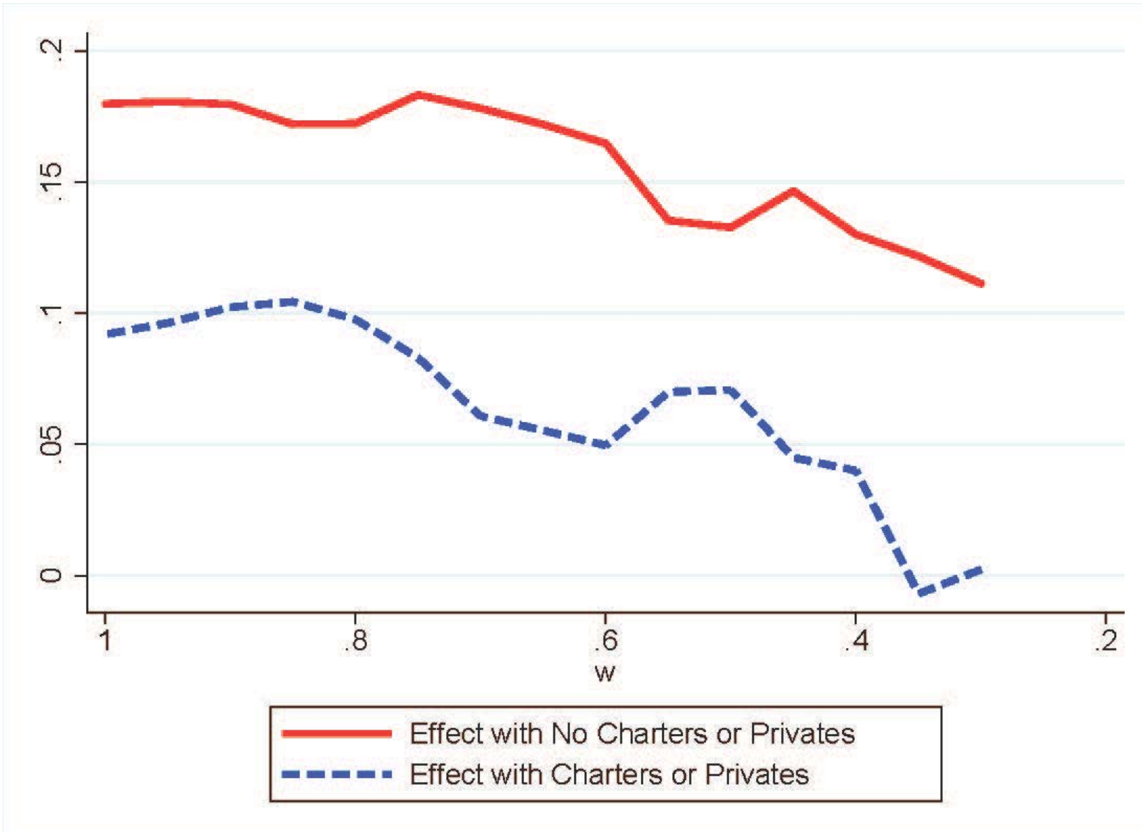


Figure corresponds to regression results reported in table 14. Bandwidths range from 0.3 to 1 miles from either side of the border.

Figure 12: Home price penalty of openness to IDSC to district 1 σ below average at the border by bandwidths with and without charter and private schools

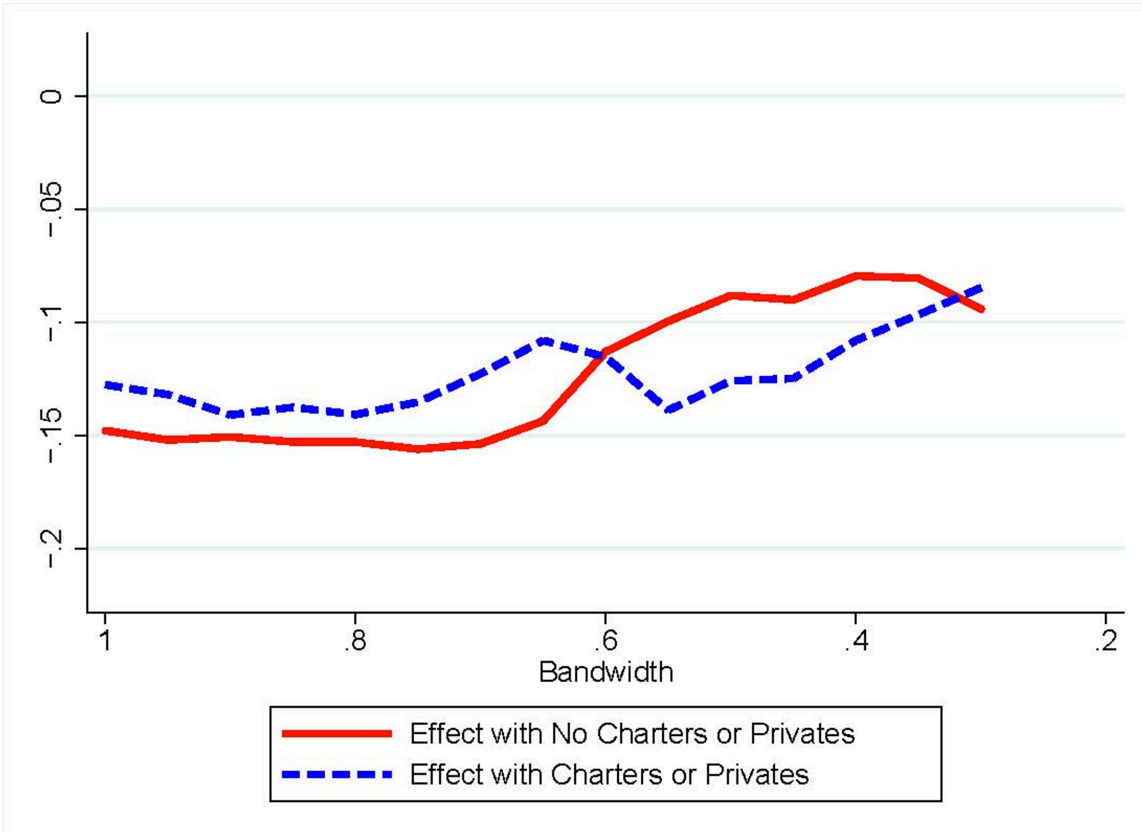


Figure corresponds to regression results reported in table 15. Bandwidths range from 0.3 to 1 miles from either side of the border.

Table 1: Descriptive Statistics of Sample by Bandwidth

Variable	Total Mean	Total SD	>1.0 miles	>0.5 miles	>0.25 miles	>0.125 miles
Housing Characteristics:						
Sale amount	122977	142886.3	116739	112233.2	110160.4	103516.7
Year built	1961.10	24.04	1961.54	1961.56	1961.74	1960.62
Square footage	2509.17	33049.70	2206.42	2231.80	2224.15	2238.69
Acres	1.49	103.22	1.60	0.88	0.46	0.36
Total rooms	6.26	2.04	6.08	5.97	5.93	5.83
Bedrooms	2.20	1.56	2.03	1.91	1.84	1.75
Bathrooms	1.83	0.93	1.78	1.74	1.73	1.67
Distance to nearest border	1.02	0.96	0.44	0.25	0.14	0.08
Choice Variables						
N school-of-choice students in next nearest district	323.01	396.81	336.41	339.86	348.10	363.54
Inter-district choice sending	0.42	0.49	0.45	0.45	0.45	0.46
Inter-district choice receiving	0.21	0.41	0.23	0.24	0.24	0.24
Average resident district math scaled scores:						
Grade 3	329.84	10.33	329.38	329.21	329.26	328.82
Grade 4	429.11	10.32	428.40	428.09	428.06	427.66
Grade 5	525.53	15.17	524.50	524.06	524.04	523.41
Grade 6	623.82	13.88	622.88	622.48	622.39	621.82
Grade 7	723.16	13.45	722.45	722.03	721.95	721.40
Grade 8	817.09	13.63	816.12	815.71	815.63	815.05
Across grades 3-8	456.30	89.85	457.77	459.21	460.06	460.13
Standardized school performance:						
Resident district	0.09	0.98	0.03	0.01	0.01	-0.03
Nearest district	0.15	0.90	0.09	0.06	0.05	0.03
Next nearest district	0.17	0.91	0.13	0.11	0.12	0.10
Charter penetration						
Charter within district	0.60	0.49	0.58	0.57	0.57	0.58
N Charters within 1 mile	0.83	1.78	0.83	0.84	0.86	0.94
N Charters within 3 miles	2.31	4.42	2.08	2.01	2.00	2.17
N Charters within 5 miles	3.06	6.29	2.66	2.54	2.50	2.73
N	134875		85068	50808	26377	11511

Source: Linked CoreLogic property tax data and publicly available MEAP results.

Table 2: School performance capitalization using school district boundaries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Panel A: Including household covariates							
School performance	0.245***	0.232***	0.212***	0.168***	0.157***	0.142***	0.123***
	(0.037)	(0.037)	(0.038)	(0.039)	(0.042)	(0.042)	(0.046)
Observations	85,016	70,127	50,779	26,368	20,747	14,651	8,429
Panel B: Adding demographic covariates							
School performance	0.169***	0.162***	0.149***	0.124***	0.114***	0.111***	0.098***
	(0.022)	(0.022)	(0.023)	(0.026)	(0.028)	(0.029)	(0.035)
Observations	69,267	57,100	41,385	21,464	16,841	11,897	6,801

Border-clustered standard errors in parentheses. All regressions include border-by-year fixed effects as well month fixed effects. Regressions with covariates also include indicators for missing data. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 3: Capitalization of school choice in sending districts across specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
School performance	0.336***	0.256***	0.181***	0.340***	0.257***	0.179***	0.332***	0.246***	0.179***
	(0.039)	(0.034)	(0.021)	(0.041)	(0.037)	(0.023)	(0.047)	(0.042)	(0.026)
IDSC	0.064***	0.046**	0.042***	0.058**	0.038*	0.030*	0.020	-0.017	-0.004
	(0.022)	(0.018)	(0.016)	(0.026)	(0.021)	(0.017)	(0.044)	(0.038)	(0.031)
Distance to border	0.183***	0.163***	0.079	0.179***	0.158***	0.070	0.181***	0.159***	0.090*
	(0.069)	(0.057)	(0.049)	(0.069)	(0.057)	(0.048)	(0.068)	(0.057)	(0.049)
Distance to border^2	-0.136**	-0.103*	-0.031	-0.135**	-0.100*	-0.025	-0.140**	-0.101*	-0.042
	(0.063)	(0.054)	(0.044)	(0.063)	(0.054)	(0.043)	(0.060)	(0.051)	(0.043)
Distance to next nearest district	0.029	0.032	0.028	0.030	0.033	0.027	-0.003	0.011	0.007
	(0.030)	(0.022)	(0.018)	(0.030)	(0.022)	(0.018)	(0.030)	(0.023)	(0.019)
Distance to next nearest district^2	-0.004	-0.006	-0.003	-0.004	-0.005	-0.003	-0.001	-0.002	0.001
	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)	(0.003)	(0.006)	(0.005)	(0.004)
Acres (in 1K)		-0.322	4.893		-1.368	3.878		-2.088	2.812
		(5.615)	(4.401)		(5.740)	(4.442)		(6.280)	(4.851)
Bathrooms		0.259***	0.239***		0.260***	0.240***		0.243***	0.224***
		(0.010)	(0.008)		(0.010)	(0.008)		(0.010)	(0.008)
Bedrooms		0.039***	0.036***		0.039***	0.036***		0.037***	0.035***
		(0.008)	(0.007)		(0.008)	(0.007)		(0.008)	(0.007)
Year built		0.006***	0.005***		0.006***	0.005***		0.006***	0.005***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Square-feet (in 1K)		0.021	0.045**		0.021	0.043**		0.018	0.038**
		(0.015)	(0.021)		(0.015)	(0.021)		(0.013)	(0.019)
Percent Black			-0.247***			-0.255***			-0.247***
			(0.087)			(0.086)			(0.080)
Percent Hispanic			-0.510***			-0.527***			-0.552***
			(0.082)			(0.072)			(0.063)
Percent Owner Occupied			0.346***			0.356***			0.309***
			(0.037)			(0.038)			(0.036)
Percent White			0.118*			0.121*			0.114*
			(0.067)			(0.067)			(0.062)
Occupant Black			-0.004			-0.001			-0.001
			(0.011)			(0.010)			(0.010)
Occupant Hispanic			0.044***			0.037***			0.037***
			(0.013)			(0.012)			(0.012)
Occupant owned			0.368***			0.363***			0.355***
			(0.012)			(0.012)			(0.012)
Occupant Asian			0.005			0.006			0.002
			(0.013)			(0.012)			(0.012)
Occupant Pacific Islander			0.089			0.028			0.071
			(0.148)			(0.129)			(0.133)
Observations	84,758	84,758	69,053	84,758	84,758	69,053	84,758	84,758	69,053
Clusters	528	528	517	528	528	517	528	528	517
Fixed Effects	Border and year			Border-by-year			Border-by-next-nearest-by-year		

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 4: Capitalization of school choice in receiving districts across specifications

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
School performance	0.323***	0.246***	0.172***	0.329***	0.249***	0.173***	0.335***	0.257***	0.185***
	(0.039)	(0.035)	(0.021)	(0.041)	(0.038)	(0.023)	(0.049)	(0.046)	(0.027)
IDSC	-0.060**	-0.034	-0.032*	-0.062*	-0.036	-0.033*	-0.079	-0.047	-0.042
	(0.029)	(0.023)	(0.018)	(0.032)	(0.026)	(0.020)	(0.049)	(0.039)	(0.032)
Distance to border	0.182***	0.162***	0.078	0.178**	0.157***	0.069	0.182***	0.160***	0.091*
	(0.069)	(0.057)	(0.049)	(0.069)	(0.057)	(0.048)	(0.068)	(0.057)	(0.050)
Distance to border^2	-0.136**	-0.103*	-0.030	-0.134**	-0.100*	-0.024	-0.142**	-0.103**	-0.043
	(0.063)	(0.054)	(0.043)	(0.063)	(0.054)	(0.043)	(0.060)	(0.052)	(0.043)
Distance to next nearest district	0.028	0.031	0.027	0.029	0.032	0.026	-0.006	0.010	0.006
	(0.030)	(0.022)	(0.018)	(0.030)	(0.022)	(0.018)	(0.029)	(0.023)	(0.019)
Distance to next nearest district^2	-0.004	-0.005	-0.003	-0.004	-0.005	-0.003	-0.000	-0.002	0.001
	(0.005)	(0.004)	(0.003)	(0.005)	(0.004)	(0.003)	(0.006)	(0.004)	(0.004)
Acres (in 1K)		-0.450	4.792		-1.494	3.774		-2.213	2.660
		(5.548)	(4.338)		(5.677)	(4.388)		(6.203)	(4.785)
Bathrooms		0.259***	0.239***		0.259***	0.239***		0.243***	0.224***
		(0.010)	(0.008)		(0.010)	(0.008)		(0.010)	(0.008)
Bedrooms		0.039***	0.035***		0.039***	0.036***		0.036***	0.034***
		(0.008)	(0.007)		(0.008)	(0.007)		(0.008)	(0.006)
Year built		0.006***	0.005***		0.006***	0.005***		0.006***	0.005***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Square-feet (in 1K)		0.021	0.045**		0.021	0.044**		0.018	0.038**
		(0.015)	(0.021)		(0.015)	(0.021)		(0.013)	(0.019)
Percent Black			-0.248***			-0.255***			-0.246***
			(0.087)			(0.086)			(0.079)
Percent Hispanic			-0.512***			-0.531***			-0.553***
			(0.083)			(0.073)			(0.062)
Percent Owner Occupied			0.346***			0.355***			0.308***
			(0.037)			(0.038)			(0.035)
Percent White			0.120*			0.124*			0.116*
			(0.067)			(0.067)			(0.061)
Occupant Black			-0.004			-0.001			-0.001
			(0.011)			(0.010)			(0.010)
Occupant Hispanic			0.044***			0.037***			0.037***
			(0.013)			(0.012)			(0.012)
Occupant owned			0.368***			0.363***			0.355***
			(0.012)			(0.012)			(0.012)
Occupant Asian			0.005			0.006			0.002
			(0.013)			(0.012)			(0.012)
Occupant Pacific Islander			0.087			0.025			0.071
			(0.148)			(0.129)			(0.134)
Observations	84,758	84,758	69,053	84,758	84,758	69,053	84,758	84,758	69,053
Clusters	528	528	517	528	528	517	528	528	517
Fixed Effects		Border and year			Border-by-year			Border-by-next-nearest-by-year	

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 5: Sending districts' capitalization of distance to and quality of school choice using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School	0.238***	0.224***	0.200***	0.155***	0.143***	0.132***	0.105**
Quality	(0.037)	(0.036)	(0.038)	(0.041)	(0.042)	(0.042)	(0.047)
Distance to Next	0.033	0.032	0.022	0.020	0.047	0.053	0.068
Nearest District	(0.051)	(0.050)	(0.051)	(0.052)	(0.052)	(0.052)	(0.064)
IDSC	0.124**	0.121**	0.112**	0.115*	0.092	0.099	0.100
	(0.060)	(0.057)	(0.057)	(0.058)	(0.060)	(0.061)	(0.070)
IDSC x SQ	0.034	0.026	0.033	0.029	0.037	0.033	0.091*
Next Nearest	(0.025)	(0.027)	(0.029)	(0.033)	(0.038)	(0.049)	(0.051)
IDSC x Distance	-0.049***	-0.057***	-0.060***	-0.062***	-0.086***	-0.078***	-0.111***
to Next Nearest	(0.019)	(0.021)	(0.022)	(0.019)	(0.020)	(0.021)	(0.023)
Observations	84,758	69,932	50,672	26,325	20,711	14,637	8,420
Adding Demographic Characteristics							
Resident School	0.177***	0.170***	0.157***	0.130***	0.119***	0.119***	0.103**
Quality	(0.025)	(0.024)	(0.025)	(0.031)	(0.033)	(0.035)	(0.042)
Distance to Next	0.036	0.039	0.038	0.030	0.050	0.041	0.051
Nearest District	(0.045)	(0.043)	(0.045)	(0.049)	(0.051)	(0.050)	(0.062)
IDSC	0.081**	0.083**	0.066*	0.073*	0.064	0.076	0.088
	(0.041)	(0.039)	(0.038)	(0.043)	(0.046)	(0.054)	(0.062)
IDSC x SQ	0.027	0.020	0.026	0.025	0.036	0.014	0.043
Next Nearest	(0.020)	(0.022)	(0.025)	(0.028)	(0.033)	(0.045)	(0.043)
IDSC x Distance	-0.041**	-0.049***	-0.052***	-0.054***	-0.068***	-0.053**	-0.075***
to Next Nearest	(0.016)	(0.018)	(0.020)	(0.016)	(0.017)	(0.021)	(0.021)
Observations	69,053	56,936	41,291	21,428	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 6: Receiving districts' capitalization of distance to and quality of school choice using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School	0.261***	0.250***	0.229***	0.187***	0.176***	0.159***	0.146***
Quality	(0.046)	(0.045)	(0.046)	(0.046)	(0.048)	(0.046)	(0.049)
Distance to Next	-0.002	-0.014	-0.007	-0.013	-0.022	-0.022	0.015
Nearest District	(0.022)	(0.024)	(0.026)	(0.030)	(0.032)	(0.042)	(0.048)
IDSC	-0.127**	-0.127**	-0.102*	-0.101*	-0.100*	-0.123*	-0.174**
	(0.053)	(0.054)	(0.056)	(0.060)	(0.061)	(0.071)	(0.070)
IDSC x SQ	-0.076**	-0.074**	-0.062*	-0.053	-0.060	-0.025	0.017
Next Nearest	(0.031)	(0.032)	(0.036)	(0.048)	(0.049)	(0.059)	(0.052)
IDSC x Distance	0.051***	0.052**	0.039	0.029	0.033	0.051	0.093**
to Next Nearest	(0.020)	(0.021)	(0.024)	(0.029)	(0.033)	(0.042)	(0.043)
Observations	84,758	69,932	50,672	26,325	20,711	14,637	8,420
Adding Demographic Characteristics							
Resident School	0.189***	0.185***	0.172***	0.146***	0.135***	0.132***	0.121***
Quality	(0.027)	(0.027)	(0.026)	(0.029)	(0.031)	(0.031)	(0.034)
Distance to Next	-0.001	-0.013	-0.007	-0.009	-0.010	-0.021	-0.009
Nearest District	(0.019)	(0.020)	(0.022)	(0.027)	(0.029)	(0.038)	(0.043)
IDSC	-0.089**	-0.093**	-0.070*	-0.062	-0.069	-0.081	-0.114**
	(0.042)	(0.042)	(0.042)	(0.045)	(0.045)	(0.054)	(0.054)
IDSC x SQ	-0.045*	-0.050*	-0.037	-0.034	-0.040	-0.021	-0.022
Next Nearest	(0.026)	(0.027)	(0.026)	(0.035)	(0.036)	(0.042)	(0.039)
IDSC x Distance	0.031*	0.034**	0.020	0.013	0.020	0.023	0.059
to Next Nearest	(0.017)	(0.017)	(0.019)	(0.024)	(0.028)	(0.036)	(0.041)
Observations	69,053	56,936	41,291	21,428	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 7: Sending districts' capitalization of distance to and quality of school choice using corner BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.4	0.3	0.25	0.2
Including House Characteristics							
Resident School	0.198***	0.192***	0.216***	0.177***	0.209***	0.258**	0.149
Quality	(0.029)	(0.037)	(0.059)	(0.063)	(0.076)	(0.111)	(0.124)
Distance to Next	0.316***	0.166	-0.343	-0.881	-0.691	0.352	-9.525*
Nearest District	(0.118)	(0.195)	(0.403)	(0.714)	(1.577)	(2.828)	(5.650)
IDSC	0.062	0.068	0.157	0.167	0.191	0.327**	0.054
	(0.059)	(0.066)	(0.105)	(0.113)	(0.140)	(0.164)	(0.220)
IDSC x SQ	0.057	0.049	0.132	0.103	0.149	0.087	0.051
Next Nearest	(0.050)	(0.060)	(0.089)	(0.090)	(0.133)	(0.195)	(0.107)
IDSC x Distance	-0.182***	-0.225***	-0.339*	-0.545**	-0.721	-0.804	0.240
to Next Nearest	(0.048)	(0.069)	(0.180)	(0.240)	(0.573)	(0.823)	(1.318)
Observations	36,115	21,313	9,625	6,005	3,148	2,029	1,165
Adding Demographic Characteristics							
Resident School	0.160***	0.159***	0.191***	0.184***	0.223***	0.250**	0.246*
Quality	(0.024)	(0.029)	(0.044)	(0.045)	(0.064)	(0.097)	(0.142)
Distance to Next	0.355***	0.260	-0.175	-0.959	-0.079	-0.169	-6.417
Nearest District	(0.103)	(0.182)	(0.391)	(0.677)	(1.575)	(3.041)	(7.618)
IDSC	0.053	0.047	0.165*	0.165	0.128	0.271	0.218
	(0.052)	(0.060)	(0.095)	(0.104)	(0.130)	(0.187)	(0.289)
IDSC x SQ	0.038	0.041	0.141*	0.128	0.147	0.087	0.181
Next Nearest	(0.044)	(0.049)	(0.073)	(0.079)	(0.109)	(0.133)	(0.117)
IDSC x Distance	-0.148***	-0.159**	-0.343**	-0.393*	0.060	-0.478	-0.581
to Next Nearest	(0.044)	(0.068)	(0.164)	(0.229)	(0.520)	(0.923)	(1.742)
Observations	29,540	17,431	7,860	4,916	2,621	1,682	960

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 8: Receiving districts' capitalization of distance to and quality of school choice using corner BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.4	0.3	0.25	0.2
Including House Characteristics							
Resident School	0.217***	0.213***	0.221***	0.193***	0.232***	0.247**	0.202*
Quality	(0.028)	(0.036)	(0.052)	(0.056)	(0.070)	(0.107)	(0.111)
Distance to Next	0.182	-0.011	-0.590	-1.215*	-1.215	-0.256	-10.820**
Nearest District	(0.119)	(0.182)	(0.393)	(0.697)	(1.571)	(2.690)	(5.096)
IDSC	-0.110	-0.147*	-0.184	-0.216*	-0.397***	-0.546***	-0.606**
	(0.077)	(0.089)	(0.112)	(0.117)	(0.128)	(0.187)	(0.236)
IDSC x SQ	-0.029	-0.046	-0.054	-0.116	-0.141	-0.180	-0.025
Next Nearest	(0.045)	(0.054)	(0.116)	(0.142)	(0.140)	(0.176)	(0.137)
IDSC x Distance	0.156**	0.217**	0.211	0.240	0.798	1.348*	2.250*
to Next Nearest	(0.078)	(0.099)	(0.178)	(0.265)	(0.616)	(0.772)	(1.276)
Observations	36,115	21,313	9,625	6,005	3,148	2,029	1,165
Adding Demographic Characteristics							
Resident School	0.173***	0.171***	0.183***	0.177***	0.204***	0.225**	0.282**
Quality	(0.022)	(0.027)	(0.036)	(0.036)	(0.056)	(0.094)	(0.126)
Distance to Next	0.250**	0.135	-0.413	-1.152*	0.019	-0.331	-8.398
Nearest District	(0.103)	(0.167)	(0.359)	(0.672)	(1.506)	(3.063)	(7.807)
IDSC	-0.072	-0.091	-0.136	-0.114	-0.215*	-0.367*	-0.714*
	(0.062)	(0.076)	(0.093)	(0.095)	(0.124)	(0.216)	(0.377)
IDSC x SQ	-0.027	-0.053	-0.060	-0.090	-0.082	-0.094	-0.096
Next Nearest	(0.040)	(0.048)	(0.102)	(0.108)	(0.101)	(0.154)	(0.153)
IDSC x Distance	0.113*	0.162*	0.219	0.079	0.061	0.821	3.063
to Next Nearest	(0.062)	(0.086)	(0.177)	(0.276)	(0.550)	(0.952)	(2.219)
Observations	29,540	17,431	7,860	4,916	2,621	1,682	960

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 9: Balance test under boundary discontinuity design

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bandwidths in miles:		1	0.75	0.5	0.25	0.2	0.15	0.1
Dependent Variables								
House Characteristics								
Acres	-0.055	-0.010	-0.019	0.041	-0.012	-0.011	-0.119	-0.103
	(0.105)	(0.090)	(0.087)	(0.093)	(0.116)	(0.138)	(0.101)	(0.100)
Bathrooms	0.072*	0.083*	0.083*	0.068	0.045	0.041	0.102*	0.113*
	(0.043)	(0.043)	(0.043)	(0.044)	(0.046)	(0.051)	(0.057)	(0.067)
Bedrooms	-0.08	-0.109	-0.126	-0.157	-0.188	-0.215	-0.173	-0.164
	(0.148)	(0.15)	(0.146)	(0.159)	(0.165)	(0.171)	(0.178)	(0.225)
Year built	1.607	1.851	2.126*	2.193**	1.806**	1.780*	1.635*	1.054
	(1.476)	(1.227)	(1.135)	(1.105)	(0.900)	(0.955)	(0.985)	(1.014)
Square-feet	-0.89	0.142	0.156	0.145	0.094	0.135	0.222*	0.019
(in 1K)	(0.941)	(0.124)	(0.119)	(0.1)	(0.091)	(0.112)	(0.115)	(0.117)
Demographic Characteristics								
Asian	-0.003	-0.005	-0.004	-0.003	0.000	-0.001	0.004	-0.001
	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.009)	(0.012)
Black	0.036	0.036	0.038	0.042	0.031	0.021	0.022	-0.002
	(0.027)	(0.026)	(0.026)	(0.027)	(0.027)	(0.029)	(0.032)	(0.039)
Hispanic	-0.005	-0.006	-0.005	-0.004	-0.007	-0.009	-0.006	-0.017
	(0.006)	(0.007)	(0.007)	(0.007)	(0.009)	(0.010)	(0.014)	(0.016)

Border-clustered standard errors in parentheses. All regressions additionally include month and year-by-boundary fixed effects, a quadratic in distance from the boundary, and school ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 10: Balance test under boundary corner discontinuity design

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bandwidths in miles:		1	0.75	0.5	0.4	0.3	0.25	0.2
Dependent Variables								
Household Characteristics								
Acres	-0.055	0.029	0.017	0.060	0.082	0.169	0.107	-0.043
	(0.105)	(0.087)	(0.108)	(0.130)	(0.136)	(0.226)	(0.152)	(0.077)
Bathrooms	0.072*	0.025	0.038	0.095	0.053	0.014	0.077	-0.041
	(0.043)	(0.051)	(0.059)	(0.102)	(0.102)	(0.088)	(0.118)	(0.125)
Bedrooms	-0.080	-0.062	-0.118	-0.043	-0.039	-0.213	-0.047	-0.409
	(0.148)	(0.120)	(0.149)	(0.194)	(0.253)	(0.365)	(0.328)	(0.657)
Year built	1.607	0.909	0.871	1.100	1.187	0.510	-0.695	-4.471
	(1.476)	(0.983)	(1.113)	(1.602)	(2.051)	(2.201)	(2.692)	(4.047)
Square-feet	-0.89	0.104	0.032	-0.152	-0.02	0.03	0.104	-0.247
(in 1K)	(0.941)	(0.124)	(0.144)	(0.113)	(0.111)	(0.189)	(0.258)	(0.307)
Demographic Characteristics								
Asian	-0.003	-0.005	0.001	-0.003	-0.005	-0.006	-0.007	-0.012
	(0.007)	(0.008)	(0.007)	(0.011)	(0.016)	(0.029)	(0.046)	(0.062)
Black	0.036	0.018	0.001	-0.008	0.004	-0.026	-0.033	-0.070
	(0.027)	(0.029)	(0.030)	(0.056)	(0.063)	(0.071)	(0.081)	(0.090)
Hispanic	-0.005	-0.009	-0.015	-0.018	-0.014	-0.018	-0.074	-0.095
	(0.006)	(0.011)	(0.010)	(0.017)	(0.019)	(0.027)	(0.048)	(0.076)

Border-clustered standard errors in parentheses. All regressions additionally include month and year-by-boundary fixed effects, a quadratic in distance from the boundary, and school ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 11: Balance test under nearest district boundary discontinuity design

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Dependent Variables							
House Characteristics							
Acres	-0.213**	-0.189*	-0.187	-0.228	-0.226	-0.189*	-0.161
	(0.102)	(0.110)	(0.124)	(0.161)	(0.174)	(0.115)	(0.119)
Bathrooms	0.041	0.051	0.072	0.081	0.075	0.084	0.084
	(0.048)	(0.048)	(0.047)	(0.051)	(0.054)	(0.058)	(0.065)
Bedrooms	0.309*	0.328*	0.370*	0.413*	0.468*	0.407	0.584*
	(0.161)	(0.176)	(0.204)	(0.239)	(0.263)	(0.255)	(0.348)
Year built	-0.671	-0.542	-0.134	-0.194	-0.017	-0.309	-0.158
	(1.037)	(1.018)	(1.017)	(0.965)	(0.999)	(1.226)	(1.505)
Square-feet	-0.159	-0.215	-0.197	-0.058	-0.025	0.03	-0.085
(in 1K)	(0.183)	(0.181)	(0.167)	(0.088)	(0.093)	(0.096)	(0.102)
Demographic Characteristics							
Asian	-0.001	-0.002	0.001	0.005	0.004	0.002	0.002
	(0.006)	(0.006)	(0.007)	(0.008)	(0.009)	(0.010)	(0.012)
Black	0.075**	0.074***	0.064**	0.059**	0.056*	0.068**	0.073*
	(0.029)	(0.029)	(0.027)	(0.029)	(0.03)	(0.033)	(0.039)
Hispanic	-0.011	-0.010	-0.008	-0.010	-0.011	-0.013	-0.004
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.011)	(0.015)

Border-clustered standard errors in parentheses. All regressions additionally include month and year-by-boundary fixed effects, a quadratic in distance from the boundary, and school ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 12: Receiving district capitalization of school choice in nearest district using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School	0.282***	0.274***	0.255***	0.212***	0.202***	0.174***	0.168***
Quality	(0.055)	(0.054)	(0.054)	(0.054)	(0.057)	(0.054)	(0.055)
IDSC	-0.023	-0.023	-0.020	-0.001	-0.002	0.012	0.025
	(0.031)	(0.033)	(0.034)	(0.041)	(0.041)	(0.044)	(0.052)
IDSC x SQ	0.086*	0.094*	0.094*	0.100**	0.101**	0.076	0.110**
Next Nearest	(0.050)	(0.048)	(0.049)	(0.049)	(0.051)	(0.050)	(0.052)
Observations	84,718	69,898	50,652	26,316	20,710	14,636	8,419
Adding Demographic Characteristics							
Resident School	0.207***	0.207***	0.196***	0.176***	0.165***	0.160***	0.156***
Quality	(0.037)	(0.036)	(0.035)	(0.038)	(0.040)	(0.039)	(0.041)
IDSC	-0.013	-0.015	-0.014	-0.014	-0.015	-0.003	-0.003
	(0.027)	(0.028)	(0.029)	(0.037)	(0.037)	(0.039)	(0.043)
IDSC x SQ	0.060	0.074**	0.072**	0.085**	0.088**	0.090**	0.115***
Next Nearest	(0.037)	(0.035)	(0.035)	(0.037)	(0.038)	(0.039)	(0.043)
Observations	69,034	56,922	41,282	21,423	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 13: Capitalization of school performance and choice from differencing matched transactions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bandwidths in miles:			1	0.75	0.5	0.25	0.2	0.15	0.1
IDSC × ΔSchool performance	-0.341***	-0.317***	-0.289***	-0.286***	-0.298***	-0.290***	-0.271***	-0.244**	-0.235*
	(0.093)	(0.088)	(0.088)	(0.090)	(0.097)	(0.103)	(0.104)	(0.111)	(0.123)
IDSC	0.303**	0.304***	0.260***	0.241**	0.250**	0.225*	0.250**	0.198	0.060
	(0.121)	(0.104)	(0.098)	(0.099)	(0.107)	(0.119)	(0.127)	(0.141)	(0.130)
ΔSchool performance	0.458***	0.379***	0.354***	0.341***	0.339***	0.285***	0.292***	0.264**	0.273***
	(0.083)	(0.079)	(0.079)	(0.082)	(0.087)	(0.092)	(0.093)	(0.102)	(0.094)
ΔAcres (in 1K)		5.990	6.361	4.455	1.080	-7.441	-7.244	-4.869	20.123
		(8.277)	(8.898)	(9.616)	(10.271)	(11.772)	(13.273)	(15.590)	(14.601)
ΔBathrooms		0.279***	0.273***	0.264***	0.256***	0.227***	0.225***	0.214***	0.243***
		(0.016)	(0.016)	(0.015)	(0.016)	(0.017)	(0.019)	(0.020)	(0.029)
ΔBedrooms		0.030*	0.032*	0.037**	0.035*	0.036**	0.037**	0.031	0.045**
		(0.018)	(0.018)	(0.018)	(0.019)	(0.016)	(0.016)	(0.022)	(0.022)
ΔYear built		0.007***	0.007***	0.007***	0.007***	0.008***	0.008***	0.008***	0.006***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
ΔSquare-feet		0.116***	0.106***	0.105***	0.093***	0.100***	0.092***	0.086***	0.122***
(in 1K)		(0.026)	(0.026)	(0.025)	(0.026)	(0.026)	(0.026)	(0.030)	(0.046)
Distance between properties	0.026	-0.001	0.011	0.007	0.020	0.046	0.048	0.028	0.079
	(0.052)	(0.035)	(0.032)	(0.033)	(0.040)	(0.058)	(0.065)	(0.072)	(0.120)
Distance between properties^2	0.001	0.002	0.004	0.006	0.003	0.000	-0.008	-0.000	-0.012
	(0.005)	(0.004)	(0.004)	(0.004)	(0.006)	(0.009)	(0.010)	(0.011)	(0.020)
Observations	40,894	40,894	40,168	32,888	23,253	11,327	8,594	5,433	2,534
R-squared	0.0539	0.2252	0.2136	0.2049	0.1969	0.1653	0.1553	0.1458	0.1661
Clusters	388	388	372	353	323	250	221	193	150

Dependent variable is the difference in log of sale price between matched transactions. Border-clustered standard errors in parentheses. Regressions with covariates also include indicators for missing data. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 14: Changes in capitalization of access to IDSC under presence of charter or private schools

	(1)	(2)	(3)	(4)	(5)	(7)
Bandwidths in miles:	5	1	0.75	0.5	0.4	0.3
Resident School	0.181***	0.175***	0.168***	0.156***	0.143***	0.127***
Quality	(0.025)	(0.025)	(0.024)	(0.024)	(0.026)	(0.028)
Distance to Next	0.030*	0.028	0.020	0.025	0.022	0.023
Nearest District	(0.018)	(0.020)	(0.022)	(0.025)	(0.025)	(0.026)
IDSC	0.186***	0.104*	0.115**	0.078	0.076	0.062
	(0.071)	(0.055)	(0.047)	(0.066)	(0.062)	(0.058)
IDSC x SQ	0.070*	0.075*	0.069*	0.054	0.054	0.050
Next Nearest	(0.041)	(0.040)	(0.037)	(0.039)	(0.037)	(0.038)
IDSC x Distance	-0.037***	-0.041**	-0.049***	-0.051***	-0.048***	-0.040***
to Next Nearest	(0.012)	(0.016)	(0.017)	(0.019)	(0.016)	(0.015)
IDSC x Charter or	-0.171**	-0.088	-0.100**	-0.062	-0.090	-0.109*
Private	(0.072)	(0.054)	(0.046)	(0.062)	(0.060)	(0.064)
Observations	108,426	69,053	56,936	41,291	33,878	25,939

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table 15: Changes in capitalization of openness to IDSC under presence of charter or private schools

	(1)	(2)	(3)	(4)	(5)	(7)
Bandwidths in miles:	5	1	0.75	0.5	0.4	0.3
Resident School	0.198***	0.189***	0.185***	0.172***	0.160***	0.148***
Quality	(0.027)	(0.027)	(0.027)	(0.026)	(0.027)	(0.028)
Distance to Next	0.004	-0.001	-0.013	-0.008	-0.011	-0.005
Nearest District	(0.017)	(0.019)	(0.020)	(0.022)	(0.023)	(0.025)
IDSC	-0.124	-0.105**	-0.108***	-0.047	-0.043	-0.066
	(0.090)	(0.045)	(0.039)	(0.052)	(0.051)	(0.051)
IDSC x SQ	-0.042*	-0.043	-0.048*	-0.041	-0.037	-0.029
Next Nearest	(0.023)	(0.026)	(0.028)	(0.028)	(0.027)	(0.030)
IDSC x Distance	0.022	0.032*	0.034**	0.021	0.022	0.018
to Next Nearest	(0.014)	(0.017)	(0.017)	(0.019)	(0.021)	(0.022)
IDSC x Charter or	0.045	0.020	0.021	-0.038	-0.028	0.009
Private	(0.088)	(0.052)	(0.049)	(0.059)	(0.056)	(0.056)
Observations	108,426	69,053	56,936	41,291	33,878	25,939

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Appendix A: Supplemental Results

Table A1: Sending district capitalization of school choice quality in nearest district using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School	0.242***	0.227***	0.203***	0.159***	0.148***	0.138***	0.116**
Quality	(0.039)	(0.038)	(0.040)	(0.043)	(0.044)	(0.044)	(0.050)
IDSC	-0.035	-0.044	-0.055	-0.054	-0.055	-0.037	-0.061
	(0.042)	(0.040)	(0.039)	(0.040)	(0.039)	(0.040)	(0.050)
IDSC x SQ	0.124**	0.121**	0.111*	0.113*	0.096	0.102	0.108
Next Nearest	(0.062)	(0.059)	(0.058)	(0.060)	(0.064)	(0.065)	(0.077)
Observations	84,718	69,898	50,652	26,316	20,710	14,636	8,419
Adding Demographic Characteristics							
Resident School	0.179***	0.171***	0.158***	0.130***	0.119***	0.121***	0.105**
Quality	(0.026)	(0.025)	(0.025)	(0.031)	(0.032)	(0.035)	(0.042)
IDSC	-0.019	-0.025	-0.027	-0.032	-0.029	-0.019	-0.034
	(0.034)	(0.032)	(0.031)	(0.036)	(0.037)	(0.042)	(0.052)
IDSC x SQ	0.079*	0.081**	0.063*	0.070	0.064	0.077	0.089
Next Nearest	(0.041)	(0.039)	(0.038)	(0.044)	(0.047)	(0.055)	(0.064)
Observations	69,034	56,922	41,282	21,423	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table A2: Receiving district capitalization of school choice quality in nearest district using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School	0.260***	0.249***	0.228***	0.186***	0.175***	0.158***	0.145***
Quality	(0.047)	(0.046)	(0.046)	(0.046)	(0.048)	(0.046)	(0.049)
IDSC	-0.062	-0.064	-0.056	-0.068	-0.065	-0.069	-0.076
	(0.040)	(0.041)	(0.043)	(0.044)	(0.045)	(0.048)	(0.052)
IDSC x SQ	-0.066**	-0.065**	-0.054	-0.047	-0.054	-0.015	0.038
Next Nearest	(0.031)	(0.031)	(0.035)	(0.046)	(0.046)	(0.056)	(0.051)
Observations	84,718	69,898	50,652	26,316	20,710	14,636	8,419
Adding Demographic Characteristics							
Resident School	0.188***	0.183***	0.171***	0.145***	0.134***	0.131***	0.118***
Quality	(0.027)	(0.027)	(0.027)	(0.029)	(0.031)	(0.031)	(0.035)
IDSC	-0.049	-0.052	-0.046	-0.047	-0.048	-0.057	-0.052
	(0.032)	(0.032)	(0.033)	(0.035)	(0.036)	(0.037)	(0.042)
IDSC x SQ	-0.039	-0.044*	-0.033	-0.031	-0.036	-0.017	-0.009
Next Nearest	(0.026)	(0.027)	(0.026)	(0.035)	(0.035)	(0.040)	(0.040)
Observations	69,034	56,922	41,282	21,423	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table A3: Sending district capitalization of distance to school choice in next-nearest district using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School Quality	0.242***	0.227***	0.203***	0.158***	0.145***	0.133***	0.105**
	(0.040)	(0.039)	(0.040)	(0.043)	(0.043)	(0.043)	(0.048)
Distance to Next Nearest District	0.051	0.047	0.032	0.028	0.055	0.058	0.070
	(0.050)	(0.049)	(0.051)	(0.052)	(0.052)	(0.051)	(0.065)
IDSC	0.034	0.027	0.032	0.028	0.037	0.032	0.092*
	(0.025)	(0.027)	(0.029)	(0.033)	(0.038)	(0.048)	(0.051)
IDSC x Distance to Next Nearest	-0.049**	-0.057**	-0.059**	-0.061***	-0.087***	-0.079***	-0.113***
	(0.021)	(0.022)	(0.024)	(0.020)	(0.022)	(0.021)	(0.024)
Observations	84,758	69,932	50,672	26,325	20,711	14,637	8,420
Adding Demographic Characteristics							
Resident School Quality	0.178***	0.170***	0.157***	0.129***	0.119***	0.118***	0.101**
	(0.025)	(0.024)	(0.024)	(0.031)	(0.032)	(0.034)	(0.041)
Distance to Next Nearest District	0.050	0.051	0.045	0.037	0.056	0.046	0.057
	(0.043)	(0.042)	(0.044)	(0.048)	(0.050)	(0.049)	(0.063)
IDSC	0.027	0.019	0.024	0.024	0.035	0.013	0.043
	(0.020)	(0.022)	(0.025)	(0.028)	(0.032)	(0.044)	(0.042)
IDSC x Distance to Next Nearest	-0.040**	-0.048***	-0.051**	-0.053***	-0.068***	-0.053**	-0.075***
	(0.017)	(0.018)	(0.021)	(0.017)	(0.017)	(0.021)	(0.021)
Observations	69,053	56,936	41,291	21,428	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table A4: Receiving district capitalization of distance to school choice in next-nearest district using BDD

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bandwidths in miles:	1	0.75	0.5	0.25	0.2	0.15	0.1
Including House Characteristics							
Resident School Quality	0.257***	0.247***	0.227***	0.184***	0.173***	0.158***	0.147***
	(0.046)	(0.045)	(0.046)	(0.046)	(0.048)	(0.046)	(0.048)
Distance to Next Nearest District	-0.103**	-0.102*	-0.079	-0.081	-0.076	-0.113	-0.182**
	(0.051)	(0.052)	(0.054)	(0.059)	(0.061)	(0.072)	(0.072)
IDSC	-0.001	-0.013	-0.007	-0.012	-0.020	-0.021	0.015
	(0.023)	(0.024)	(0.026)	(0.030)	(0.033)	(0.043)	(0.048)
IDSC x Distance to Next Nearest	0.045**	0.045**	0.033	0.024	0.027	0.048	0.095**
	(0.020)	(0.021)	(0.024)	(0.028)	(0.032)	(0.040)	(0.043)
Observations	84,758	69,932	50,672	26,325	20,711	14,637	8,420
Adding Demographic Characteristics							
Resident School Quality	0.185***	0.181***	0.169***	0.144***	0.132***	0.131***	0.120***
	(0.027)	(0.027)	(0.026)	(0.029)	(0.030)	(0.031)	(0.034)
Distance to Next Nearest District	-0.076*	-0.077*	-0.058	-0.050	-0.054	-0.074	-0.103*
	(0.042)	(0.042)	(0.041)	(0.046)	(0.046)	(0.055)	(0.053)
IDSC	-0.001	-0.013	-0.007	-0.009	-0.009	-0.021	-0.009
	(0.019)	(0.020)	(0.022)	(0.027)	(0.029)	(0.038)	(0.043)
IDSC x Distance to Next Nearest	0.027	0.029*	0.017	0.009	0.015	0.021	0.055
	(0.017)	(0.017)	(0.019)	(0.024)	(0.028)	(0.035)	(0.040)
Observations	69,053	56,936	41,291	21,428	16,812	11,886	6,793

Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include home, neighborhood, and buyer characteristics and border-by-next-nearest-district-by-year fixed effects as well as month fixed effects. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table A5: Capitalization of school choice using boundary corner discontinuity design

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bandwidths in miles:			1	0.75	0.5	0.25	0.2	0.15	0.1
Resident School	0.352***	0.255***	0.242***	0.227***	0.203***	0.158***	0.145***	0.133***	0.105**
Quality	(0.047)	(0.043)	(0.040)	(0.039)	(0.040)	(0.043)	(0.043)	(0.044)	(0.048)
Distance to Next	0.015	0.023**	0.022	0.025*	0.032**	0.045***	0.062***	0.046**	0.084***
Nearest District	(0.013)	(0.010)	(0.014)	(0.014)	(0.015)	(0.016)	(0.018)	(0.022)	(0.028)
IDSC	0.084	0.039	0.050	0.047	0.032	0.029	0.058	0.058	0.070
	(0.055)	(0.048)	(0.050)	(0.049)	(0.051)	(0.051)	(0.051)	(0.051)	(0.065)
IDSC x Distance	-0.049***	-0.042***	-0.049**	-0.057**	-0.059**	-0.063***	-0.090***	-0.080***	-0.113***
to Next Nearest	(0.018)	(0.014)	(0.021)	(0.022)	(0.024)	(0.020)	(0.021)	(0.021)	(0.024)
Resident School	0.349***	0.252***	0.242***	0.227***	0.203***	0.159***	0.148***	0.138***	0.116**
Quality	(0.044)	(0.041)	(0.039)	(0.038)	(0.040)	(0.043)	(0.044)	(0.044)	(0.050)
IDSC	-0.021	-0.050	-0.035	-0.044	-0.055	-0.054	-0.055	-0.037	-0.061
	(0.052)	(0.048)	(0.042)	(0.040)	(0.039)	(0.040)	(0.039)	(0.040)	(0.050)
IDSC x SQ	0.131*	0.106	0.124**	0.121**	0.111*	0.113*	0.096	0.102	0.108
Next Nearest	(0.074)	(0.067)	(0.062)	(0.059)	(0.058)	(0.060)	(0.064)	(0.065)	(0.077)
Observations	134,372	134,372	36,115	21,313	9,625	6,005	3,148	2,029	1,165

Source: Linked CoreLogic property tax data and publicly available MEAP results**.** Linked CoreLogic property tax data and publicly available MEAP results**.** Dependent variable is log of sale price. Border-clustered standard errors in parentheses. All regressions include border-by-year fixed effects as well as month fixed effects. Regressions with covariates also include indicators for missing data. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.

Table A.6: Results from differencing matched transactions using higher-performing district as the basis for matches.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bandwidths in miles:			1	0.75	0.5	0.25	0.2	0.15	0.1
IDSC ×	-0.248***	-0.251***	-0.259***	-0.263***	-0.284***	-0.299***	-0.237***	-0.225**	-0.248***
ΔSchool									
performance	(0.089)	(0.077)	(0.078)	(0.075)	(0.073)	(0.078)	(0.090)	(0.095)	(0.088)
IDSC	0.159*	0.208***	0.216***	0.217***	0.261***	0.274***	0.194**	0.222**	0.100
	(0.089)	(0.077)	(0.077)	(0.079)	(0.081)	(0.090)	(0.092)	(0.099)	(0.094)
ΔSchool									
performance	0.425***	0.358***	0.361***	0.356***	0.372***	0.376***	0.300***	0.283***	0.221***
	(0.077)	(0.069)	(0.070)	(0.067)	(0.066)	(0.072)	(0.085)	(0.086)	(0.069)
ΔAcres (in 1K)		10.791**	10.275**	6.991	5.241	10.138	13.131	1.337	23.797
		(5.058)	(5.186)	(5.643)	(6.411)	(9.140)	(10.869)	(14.581)	(20.773)
ΔBathrooms		0.259***	0.257***	0.253***	0.245***	0.219***	0.203***	0.201***	0.211***
		(0.015)	(0.015)	(0.015)	(0.016)	(0.019)	(0.021)	(0.026)	(0.029)
ΔBedrooms		0.065***	0.064***	0.070***	0.075***	0.054***	0.057***	0.064***	0.062***
		(0.013)	(0.013)	(0.013)	(0.014)	(0.017)	(0.017)	(0.020)	(0.022)
ΔYear built		0.005***	0.005***	0.005***	0.005***	0.006***	0.006***	0.006***	0.006***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
ΔSquare-feet		0.195***	0.195***	0.189***	0.182***	0.184***	0.188***	0.191***	0.181***
(in 1K)		(0.034)	(0.034)	(0.034)	(0.033)	(0.035)	(0.039)	(0.042)	(0.055)
Distance between		(0.055)	(0.055)	(0.052)	(0.046)	(0.045)	(0.047)	(0.056)	(0.075)
properties	-0.032	-0.027	-0.029	-0.050	-0.062	-0.035	0.034	0.002	-0.029
Distance between	(0.032)	(0.025)	(0.029)	(0.035)	(0.048)	(0.101)	(0.099)	(0.128)	(0.168)
properties^2	0.002	-0.000	0.002	0.006	0.001	0.012	-0.017	-0.012	-0.009
	(0.004)	(0.003)	(0.006)	(0.007)	(0.008)	(0.026)	(0.029)	(0.035)	(0.042)
Observations									
R-squared	38,278	38,278	37,918	31,207	22,240	10,645	7,915	5,241	2,547
Clusters	0.0713	0.2335	0.2311	0.2222	0.2112	0.1729	0.1447	0.1237	0.1136

Source: Linked CoreLogic property tax data and publicly available MEAP results**.** Dependent variable is the difference in log of sale price between matched transactions. Border-clustered standard errors in parentheses. Regressions with covariates also include indicators for missing data. ***/**/* denote p-values that represent <0.01/<0.05/<0.1 respectively.