3-1-2009

School Choice and Home Prices: Evidence from Milwaukee, Wisconsin

Marcus A. Winters
University of Arkansas, Fayetteville

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SCDP Milwaukee Evaluation

Report #12
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was founded in 1871 as the flagship institution of higher education for the state of Arkansas. Established as a land grant university, its mandate was threefold: to teach students, conduct research, and perform service and outreach.

The College of Education and Health Professions established the Department of Education Reform in 2005. The department's mission is to advance education and economic development by focusing on the improvement of academic achievement in elementary and secondary schools. It conducts research and demonstration projects in five primary areas of reform: teacher quality, leadership, policy, accountability, and school choice.

The School Choice Demonstration Project (SCDP), based within the Department of Education Reform, is an education research center devoted to the non-partisan study of the effects of school choice policy and is staffed by leading school choice researchers and scholars. Led by Dr. Patrick J. Wolf, Professor of Education Reform and Endowed 21st Century Chair in School Choice, SCDP's national team of researchers, institutional research partners and staff are devoted to the rigorous evaluation of school choice programs and other school improvement efforts across the country. The SCDP is committed to raising and advancing the public's understanding of the strengths and limitations of school choice policies and programs by conducting comprehensive research on what happens to students, families, schools and communities when more parents are allowed to choose their child's school.

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SCHOOL CHOICE
DEMONSTRATION PROJECT

School Choice Demonstration Project
Department of Education Reform
University of Arkansas
201 Graduate Education Building
Fayetteville, AR 72701

479-575-6345

http://www.uark.edu/ua/der/SCDP/Research.html

Introduction

Researchers have paid a great deal of attention to the impact of school choice policies on student educational outcomes. The emphasis on evaluating the impact of school choice policies on student academic proficiency is certainly justified in that the explicit goal of such policies is to improve educational productivity. However, the effects of school choice policies may not end at the schoolhouse door. As with any other large public policy, as they grow in size school choice has the potential for externalities -- either positive or negative -- that could have an impact on the overall community.

One of the most important implications of school choice policies has to do with their potential implications for home prices within and across communities. Anyone who has shopped for a home understands that the quality of the public schools plays an important role in a person's decision to purchase a particular residence. Parents seek to live in locations where their children will have access to higher quality public schools. When transportation costs are at issue, they also derive benefits from living closer to desirable schools. Even individuals without children may seek to live in areas with higher quality schools because of the potential higher resale value. The desirability of the local schools thus becomes incorporated into the price of the house as purchasers bid up the prices of homes located in areas with higher quality public schools.

Over the years there has been a growing theoretical literature evaluating the potential impact of the schooling environment on residential decisions and sorting. The foundation of these models is the observation that the quality of the public schools to which residents of a home is assigned or to which they have ready access is an important determinant of an individual's decision about their residential location. Some models focus on home price capitalization that occurs due to inter-jurisdictional differences in the access to quality schools that result from legal boundaries, while other models suggest that there could be differences in intra-district capitalization of home prices within such boundaries if travel costs are present.

However, empirical researchers are only now beginning to catch up to this theoretical analysis. Several papers have identified the school quality premium in home prices that results from differential access due to school boundaries. However, much less is known about whether such premiums might be altered when the relationship between school access and residential location is reduced or removed.

This paper measures the relationship between home prices and nearby school quality in an area with expansive public and private school choice: Milwaukee, Wisconsin. We first look for a continuing relationship between a home's price and its location relative to a higher quality school during a time when theoretically individuals have access to a variety of public schools across city. We then evaluate whether areas within the city that faced differential expansion of schooling options due to a school voucher program altered the relationship between home prices and the quality of the nearest elementary school.

Despite the widespread availability of both public and private school choice, we find a significant positive relationship between the average test scores of the nearest elementary school and home price. We find no

evidence that this relationship has changed disproportionately in residential quadrants that may have differential changes in access to private school choice since 2002.

While this paper represents a step forward in research evaluating the impact of school choice on home prices, it is severely limited by a variety of factors. In particular, the longstanding existence of an open enrollment policy and the city-wide nature of both the public and private choice options make measurement problematic. Because of these limitations, the results reported in this paper should be interpreted with caution.

This report and its companion reports are the second in a series of annual reports on the Milwaukee Parental Choice Program (MPCP) that will be conducted by the School Choice Demonstration Project (SCDP). Alison Smith provided excellent research assistance on this project. An initial draft of this report was greatly improved based on comments from the SCDP Research Advisory Board and research team, particularly Robert Costrell of the University of Arkansas and Thomas Nechyba of Duke University. All remaining errors are the responsibility of the author alone.

This ongoing research project is being funded by a diverse set of philanthropies including the Annie E. Casey, Joyce, Kern Family, Lynde and Harry Bradley, Robertson, and Walton Family Foundations. We thank them for their generous support and acknowledge that the actual content of this report is solely the responsibility of the author and does not necessarily reflect any official positions of the various funding organizations, the Manhattan Institute for Policy Research, or the University of Arkansas.

Theoretical Models

The theoretical literature on home price capitalization and school quality can be separated by whether the model focuses on obtaining school quality across or within district boundaries. The empirical strategy incorporated in this paper mostly relates to the former, though it has some potential implications to both strains of literature.

There is a wide body of theoretical research evaluating the impact of school choice policies on housing prices and residential sorting when school quality is strongly separated by legal boundaries (Nechyba 2000, 2003a, 2003b, 2003c, Ferreyra 2007). These papers provide a theoretical framework for understanding the impact of school choice (in particular private school vouchers) on residential decisions and pursue computer simulations to better understand the theoretical effects. The robust finding of this previous research is that the introduction of

school choice policies should lead to greater residential sorting across income groups and should lead to a more even distribution of housing prices within the area.

The intuition behind the theoretical findings is quite simple. In absence of school choice, the public school that a student attends is wholly determined by the school zone in which his home lies. Parents recognize this and seek to purchase housing in areas with higher quality public schools. This system leads home buyers to bid up the prices of homes that fall in the jurisdiction of a higher performing public school system. That is, otherwise identical homes (by number of rooms, quality of building materials, etc.) will sell at a higher price in areas with higher quality public schools because parents value school quality, which leads to a residential segregation by income.

However, Epple and Romano (2003) show that such sorting by income is also obtainable in a system where individuals are not legally restricted from attending several schools within limited boundary. In particular, they show that such sorting and the resulting differences in home prices will occur when there are transportation costs to sending students to schools further away from one's home. Higher income individuals who are able to pay such transportation costs easily are willing to reside near higher or lower quality schools and send their child to the higher quality school. However, those who have an income low enough that transportation costs become restrictive will prefer homes nearer to higher quality schools. Individuals with relatively higher incomes among this group who seek to live nearby higher quality schools bid the prices of homes nearer such schools higher. Those with lower incomes, who are also thus restricted by transportation costs, are left only able to afford homes near lower quality schools that their children then attend.

Prior Empirical Research

A relatively wide body of research finds a strong relationship between school quality and home prices (Black 1999; Bogart and Cromwell 1997, 2000; Downes and Zabel 1997; Hayes and Taylor 1996; Bayer, Ferreira, and McMillan 2007). The basic model underlying these studies is a linear equation for home price taking the form:

$$(1) \qquad \ln(y_{it}) = \beta_0 + \beta_1 X_i + \beta_2 Z_i + \beta_3 School_{it} + \varepsilon_{it}$$

Where y_{it} is the sale price of home i at time t; X is a vector of observed characteristics about the home (square footage, number of bedrooms, etc.); Z is a series of characteristics about the neighborhood; and School is the quality of the public school most often measured as mean test score in the elementary, middle, and high school nearest to or within a certain radius of a home; and ε is a stochastic term.

Direct estimation of (1) can be problematic because of potentially severe omitted variable bias. In particular, there might be important unobserved differences in neighborhoods, even when utilizing rich datasets. If such

heterogeneity of neighborhoods is also correlated with school quality, then the coefficient of interest, β_3, would be biased.

Black (1999) improved upon the estimation of (1) to better account for neighborhood differences. She adopted a regression discontinuity type design that replaced the vector Z with a series of dummy variables indicating the nearest school border to which a home is assigned (Border). That is:

$$(2) \qquad \ln(y_{it}) = \delta_0 + \delta_1 X_i + \delta_2 Border_i + \delta_3 School_{it} + \mu_{it}$$

This procedure helps to address the omitted variable problem by focusing on homes nearby one another, and thus facing similar neighborhood characteristics. We can interpret δ_3 as the difference in the mean house prices on opposite sides of attendance boundaries related to differences in test scores. The idea here is that homes near but on either side of the same school border will be quite similar to one another in both observed and unobserved ways. In particular, these homes are part of the same basic neighborhood and thus share its amenities and drawbacks.

Black (1999) found that a 5 percent increase in test scores leads to about a 2.5 percent increase in a home's price. Bayer, Ferreira, and McMillan (2007) also utilize a model focused on school borders, but incorporate a richer dataset into a unified framework for evaluating parental preferences and find that this relationship drops to about a 1 percent improvement in a home's price for a 5 percent increase in school test scores.

School Choice in Milwaukee

Milwaukee is often seen as a leading city in school choice. Along with being home to one of the nation's largest private school voucher programs, the city has also had a longstanding intra-district choice program. We will briefly summarize these programs here.

Milwaukee was the first major city to enact a private school choice program paid for out of public dollars. The Milwaukee Parental Choice Program (MPCP) was enacted in 1990 as a small pilot voucher program. The program continued to enroll a small number of students until 1998, when the Wisconsin Supreme Court ruled it constitutional to utilize the vouchers to pay tuitions in parochial as well as secular schools. Since that ruling, the program has expanded dramatically, currently enrolling more than 18,000 students in schools throughout the city.

The MPCP is a means-tested voucher program. To be eligible for the program, students must be from a family with incomes below 176 percent of the federal poverty guidelines. The maximum voucher amount is roughly equal to state per pupil expenditures. Students applying for oversubscribed schools are enrolled by lottery.

There are also other important ways that Milwaukee residences have access to school choice. Charter schools are expansive in the city and currently educate about 15 percent of students. Important for our purposes, Milwaukee has also long been the home of an intra-district school choice program. The public school choice program was

first enacted in 1975 in response to concerns about racial and cultural balance within the district. Under the policy, parents fill out applications on which they state preferences for schools throughout the district. The district reports that the vast majority of parents successfully gain admission in one of their first three public school choices.

The existence of each of these policies suggests that there is a looser relationship between residential location and school attendance than in nearly any other school district in the country. Parents living throughout the city have at least potential access to the public or charter school of their choice. Further, low income parents also have access to a wide variety of private schools throughout the city, further reducing the relationship between residential location and schooling.

Data

We downloaded home sale information from 2002-2007 from the Milwaukee County Assessor's office webpage and pooled them into a single dataset. This dataset includes the realized price of each home sale in Milwaukee during the time period as recorded by the county auditor. Unfortunately, home price information before 2002 is not readily available. This is particularly problematic given that both the MPCP and the city's intra-district choice programs had been in existence for quite a while before we are first able to observe home prices.

We restrict the dataset to include only sales of residential properties. Unlike some prior studies evaluating home prices, we include all residential properties instead of focusing only on single family homes, and account for differences in property types with indicator variables.

Though it does not include all information about a home, the dataset includes a variety of important characteristics about each home that was sold. These variables include the material used to make the walls, number of stories, year built, number of bedrooms, number of bathrooms, lot size, and square footage. Unfortunately, unlike some similar datasets in other areas, the dataset does not include an indicator that the same was made "at arms length." To help account for home sales that are below the market value, we follow Figlio and Lucas (2004) by eliminating all sales where the price was below $10,000.

Table 1 presents descriptive statistics about the homes utilized in the analyses for each of the variables utilized in the regressions:

TABLE 1: Summary Statistics

Log Sale Price	11.67	0.51
Year 2006	0.24	0.43
Year 2005	0.27	0.44
Year 2003	0.17	0.38
Year 2002	0.15	0.36
December	0.07	0.26
November	0.08	0.26
October	0.09	0.29
September	0.09	0.29
August	0.1	0.3
July	0.1	0.3
May	0.09	0.29
April	0.08	0.28
March	0.08	0.27
February	0.05	0.23
January	0.05	0.22
Lot Size	6,007.19	5,974.28
Half Bath 1	0.21	0.41
Half Bath 2	0.02	0.15
Half Bath 3	0	0.03
Full Bath 2	0.34	0.47
Full Bath 3	0.02	0.14
Full Bath 4+	0	0.07
Bedrooms 0	0	0.06
Bedrooms 2	0.15	0.36
Bedrooms 3	0.42	0.49
Bedrooms 4	0.24	0.43
Bedrooms 5	0.06	0.24
Bedrooms 6	0.08	0.27
Bedrooms 7+	0.04	0.21
Built 1920's	0.17	0.38
Built 1930's	0.04	0.2
Built 1940's	0.1	0.31
Built 1950's	0.3	0.46
Built 1960's	0.09	0.28
Built 1970's	0.03	0.16
Built 1980's	0.01	0.09
Built 2000's	0	0.06
Stories 3+	0	0.06
Stories 2.5	0.27	0.44
Stories 1.5	0.15	0.35
Stories 0	0	0.03
Wall Aluminum	0.53	0.5
Wall Asbestos	0.1	0.3
Wall Block	0	0.07
Wall Brick	0.22	0.41
Wall Frame	0.08	0.27
Wall Masonry	0.03	0.16
Wall Premium Wood	0	0.04
Wall Stone	0.03	0.17
Square Footage	1,701.43	1,824.1
Quadrant 1	0.55	0.5
Quadrant 2	0.06	0.24
Quadrant 4	0.09	0.28
Log Average Math Score	6.42	0.03

The dataset also includes the home's address as well as its latitude and longitude. We used this information to map each home and link it to its nearest public elementary school.

An important difficulty in evaluating the impact of school quality on home prices in Milwaukee is that the city adopted a widely utilized open enrollment policy in the mid 1970's. Under this policy, parents can request that their child attend any public school in Milwaukee, and the city reports that the vast majority of parents are

granted one of their first choices. Because of this policy, we are not able to directly match a home to a particular public school in the city. This introduces some severe theoretical problems into the estimation for which we cannot directly account.

Because we cannot match homes to a particular elementary school based on residential location, we match homes to the public school that is geographically closest. Other papers have also matched homes to the geographically closest school. However, in these prior cases it was because the authors lacked information about school boundaries, not because such boundaries did not exist.

We match homes to the closest public elementary school and supplement this dataset with mean test score data on the fourth grade administration of the state's mandated math test as reported by the Wisconsin Department of Education. Because the dataset covers multiple years, we match each home to its nearest elementary school that year. For each year we utilize the school's average fourth grade math score in the prior year as the measure of its quality. This is based on the idea that the most recent test score is the best information that a homebuyer has about the quality of the local public school.

Another important implication of the lack of assignment zones to our estimation procedure is that in Milwaukee we are not able to account for neighborhood differences by matching homes to school borders as in Black (1999). This means that we are not able to account for neighborhood differences to a large degree, which could severely limit the reliability of any findings.

Another difficulty with estimation is that both public and private school choice are theoretically available city-wide. Measuring the impact of changes in private school choice on home values requires that we identify some variation in the availability of school choice for particular residences. We attempt to identify such variation in choice availability by dividing the city into sections that people living in one area would be unlikely to cross

when sending their child to school and focusing on the differences in private choice options within these sections.

Following the advice of members of the School Choice Demonstration Project on the ground in Milwaukee, we separate the city into quadrants relative to interstates 94 (north, south) and 43 (east, west). SCDP members indicated that individuals are not likely to seek schooling options outside their own quadrant. The hope is that use of these quadrants will allow for some differential impact of the voucher program, if more private schools came online in particular areas. Further, since these quadrants are distinguishing mostly because they are thought to have important differences in the quality of the surrounding communities, controlling for their fixed-effect represents a (relatively crude) control for neighborhood characteristics that are unobserved in our dataset.

We then supplement the dataset with information about private schools participating in the city's voucher program made available by the SCDP. The dataset includes the school's address as well as the year that the school began to accept vouchers under the program. We matched each private school to the quadrant in the city in which it is located by year of operation.

Table 2 reports the number of private schools in each quadrant by year. Though there is some variation, unfortunately there was not a great deal of increase in private school choice during the years that we have access to home data. The largest increase in private school choice came in Quadrant 1 -- west of Highway 43 and north of Highway 94 -- and there is some variation over time in Quadrant 3 -- west of Highway 43 and south of Highway 94. The other two quadrants saw little to no increase in private options.

Table 2
Voucher Accepting Private Schools by Quadrant and Year

Quadrant	2001	2002	2003	2004	2005	2006	I-43	I-94
1	42	47	51	52	55	56	West	North
Avg. Math	621.8	608.7	612.7	606.3	610.3	604.3		
2	11	11	12	12	12	12	East	North
Avg. Math	626.8	615.9	619.3	613.8	613.9	610.4		
3	15	15	18	19	19	20	West	South
Avg. Math	624.1	615.4	620.1	611.6	619.3	614.9		
4	4	4	4	4	4	4	East	South
Avg. Math	632.9	621.7	628.7	623.1	616.8	612.6		

The table also shows average math scores for public schools within each quadrant by year. Schools in Quadrant 1 have the lowest scores on average, and schools in Quadrant 4 have the highest, with those of Quadrants 2 and 3 quite similar to one another.

Method

We first follow a model inspired by (1) in order to measure the impact of the quality of the closest public school. Specifically, we estimate an equation taking the form:

$$(3) \qquad \ln(y_{it}) = \alpha_0 + \alpha_1 X_{iqt} + \alpha_2 Year_t + \alpha_3 Quadrant_q + \alpha_4 \ln(math_{iqt}) + \nu_{iqt}$$

Where i indexes the home, q indexes the city quadrant, and t indexes the year; Quadrant is a binary variable indicating the quadrant in Milwaukee as determined by proximity to the major highways; ln(math) is the natural log of the average scale score of the geographically nearest public elementary school to the home; ν is a stochastic term; and all other variables are as previously defined.

Estimation of (3) seeks to identify whether there is a persistent relationship between school quality and home prices in Milwaukee in light of both public and private school choice. Milwaukee's large amount of public school choice even prior to the original adoption of the private voucher program suggests that there may no longer be a relationship between home price and quality of the nearest public school.

Utilization of the log-log framework allows us to measure the relationship of interest in elasticity terms. We can interpret our variable of interest, α_4, as the percent increase in a home's sale price that occurs from a 1 percent increase in the nearest elementary school's average fourth grade math score.

We then seek to evaluate whether there is a changing relationship between home prices and school quality in quadrants with differential changes in the availability of private school choice options. Working from (3) we add an interaction between year, quadrant, and log of mean math score to estimate a model taking the form:

$$(4) \qquad \begin{aligned} \ln(y_{it}) &= \psi_0 + \psi_1 X_{iqt} + \psi_2 Year_t + \psi_3 Quadrant_q + \psi_4 \ln(math_{iqt}) \\ &+ \psi_5 (Quadrant_{qt} * \ln(math_{iqt} * Year_t) + \tau_{iqt} \end{aligned}$$

The interaction between Quadrant, log average math score at the nearest school, and year allows us to test whether the relationship between school quality and home prices varied by quadrant and year -- which are the variables that determine the amount of private school choice reasonably available to the home based on the assumptions discussed in the Data section. If the additional private school choice since 2002 has an impact on home prices, we would expect to see a larger decrease in the relationship between log math score and home prices over time in Quadrant 1 and potentially Quadrant 3, where there was a larger increase in private school options.

Results

The results from estimating (3) are found in Table 3. The first thing to notice is that the R-squared suggests that the included variables are explaining about half of a home's price within the dataset. It is also worth noting the coefficients on the quadrants themselves are each found to be statistically meaningful, suggesting that they are important to home price.

We find a substantially positive and statistically significant relationship between home prices and the log average math score of the nearest public school. The result suggests that a 1 percent increase in average math scores for the closest public elementary school will tend to increase a home's price by about 1.35 percent.

Table 3: Effect of Quality of Closest School on Home Price

Quadrant 1	-0.259***
	[0.00512]
Quadrant 2	0.319***
	[0.0179]
Quadrant 4	0.153***
	[0.00739]
Log Average Math Score	1.352***
	[0.112]
N	23012
R-squared	0.537

Dependent variable is log of home's sale price. Model also includes sale year, sale month, a cubic function for lot size, indicators for number of bathrooms, indicators for number of bedrooms, indicators for decade home was built, indicators for number of stories, indicators for wall material type, and a cubic function for square footage. Robust standard errors reported in brackets.
*** p < 0.01 ; ** p < 0.05 ; * p < 0.10

The finding of a relationship between the quality of the closest school and home price is somewhat surprising given the availability of public school choice throughout Milwaukee in each of the included years. Even more surprising is that the magnitude of this finding is substantially larger than what has been found in past research. It should also be noted that the use of quadrant dummy variables means that this relationship between home price and the quality of nearby school is found within city quadrants, which might not eliminate but should help to temper the impact of clustering of high quality schools near homes.

One potential interpretation of the result is that homebuyers are willing to pay a premium in order to be close to a more desirable school. Though in Milwaukee students may not be required to attend the closest school because of the lack of assignment zones, parents may still be willing to pay a premium to be near a school of greater quality because they do not want to make their children travel to other parts of the city.

We now turn to the model evaluating a differential relationship between school quality and home price over time. Table 4 reports the results of our estimation when we include the interaction terms for quadrant, year, and log math score.

Table 4

Differential Effect of School Quality Over Time and Across City Quadrants

Quadrant 1	9.300***
	[1.368]
Quadrant 2	-7.498
	[4.586]
Quadrant 4	8.736***
	[2.403]
Log Average Math Score	0.852***
	[0.129]
Quad 2 * 2002 * Math	2.735***
	[0.708]
Quad 2 * 2003 * Math	2.735***
	[0.707]
Quad 2 * 2004 * Math	2.734***
	[0.708]
Quad 2 * 2005 * Math	2.684***
	[0.709]
Quad 2 * 2006 * Math	2.703***
	[0.709]
Quad 3 * 2002 * Math	1.486***
	[0.213]

Quad 3 * 2003 * Math	1.480***
	[0.213]
Quad 3 * 2004 * Math	1.487***
	[0.213]
Quad 3 * 2005 * Math	1.494***
	[0.213]
Quad 3 * 2006 * Math	1.492***
	[0.213]
Quad 4 * 2002 * Math	0.149
	[0.355]
Quad 4 * 2003 * Math	0.146
	[0.354]
Quad 4 * 2004 * Math	0.147
	[0.355]
Quad 4 * 2005 * Math	0.165
	[0.354]
Quad 4 * 2006 * Math	[0.355]
Observations	23012
R-squared	0.546

Dependent variable is log of home's sale price. Model also includes indicator for sale year, indicator for sale month, a cubic function for lot size, indicators for number of bathrooms, indicators for number of bedrooms, indicators for decade home was built, indicators for number of stories, indicators for wall material type, and a cubic function for square footage. Robust standard errors reported in brackets.

*** p < 0.01 ; ** p < 0.05 ; * p < 0.10

We are not primarily interested in the statistical significance of the coefficients of the interaction terms because the underlying model is not concerned with whether or not there is any differential relationship between home prices and quality of nearby school by quadrant. Rather, we are interested in whether there are differences between the changes in this relationship over time across quadrants. That is, we seek to compare how these interaction coefficients change from one year to the next within a quadrant to how they change from one year to the next for another quadrant.

The comparison group here is Quadrant 1, which is the quadrant in Milwaukee with the largest increase in school choice in the city. The insignificance of each of the interactions that include Quadrant 4 suggests that there was no difference in the relationship between school quality and home prices over time across Quadrant 1, which had some increase in private school options, and Quadrant 4, where there was no increase in private school options during the years evaluated here.

The coefficients in each year from Quadrants 2 and 3 are found to be statistically different than for Quadrant 1. However, the size of the coefficients does not noticeably change across years. Thus, we find a difference in the relationship between home prices and school quality by quadrant, but that these differences have not changed over time as homes in some quadrants have seen expanded access to private options.

Interpretation and Limitations

This paper has provided some limited evidence of a persistent relationship between home prices and the quality of the nearest public school even in absence of legal school attendance boundaries. The most obvious explanation for this result is that parents prefer to live near to high quality public schools so that their children do not need to travel long distances (even within the city quadrants developed here) to attend them. This result is at least qualitatively consistent with what is expected from the theoretical model by Epple and Romano (2003).

However, limitations mostly stemming from the available data suggest that other forces may be at work here. Another potential reason for a prolonged relationship between school quality and home prices as measured here would be if there are unobserved differences in the quality of homes and neighborhoods near particular schools. Such differences that are unobserved to the research may occur because of a lasting impact of the prior relationship between residential location and school quality. Further, if such prior residential sorting by income driven by school quality also brought externalities that were either positive (parks, restaurant districts, etc.) or negative (higher crime rates, low quality supermarkets, etc.) then these neighborhood characteristics could themselves have an impact on home prices. These attributes surrounding particular schools may persist, even after the relationship between school attendance and residential location is removed. That is, it may be the case that homes surrounding different schools may not be similar even if they share the same observable characteristics.

We could go a long way to account for such neighborhood differences were we able to follow Black (1999) and evaluate homes on either side of a prior public school boundary. Unfortunately, for the reasons discussed above, this strategy is unavailable in Milwaukee.

Unfortunately, our lack of data on home prices in Milwaukee prior to the expansiveness of intra-district school choices severely limits our ability to study the ramifications of removing school boundaries, i.e. the implementation of inter-district choice on home prices. We attempted to look into such a relationship by focusing on expansiveness of choice within an arbitrary barrier (quadrant of the city) because we lack legal barriers to school attendance. However, while it provides some new information the data limitations suggests we should take such estimates with caution as well.

Conclusion

This paper provides a look at the relationship between home price and school quality in an area with expansive school choice. We find evidence of a persistent relationship between nearby school quality and home prices even in an area with widespread public and private school choice.

However, it must be emphasized that the results of this paper should be treated with caution. Future research in other areas that do not face similar empirical difficulties as Milwaukee would help shed a much brighter light on this potential important relationship.

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About the Author

Marcus Winters is a senior fellow at the Manhattan Institute. Winters conducts research and writes extensively on education policy, including topics such as school choice, high school graduation rates, accountability, and special education.

He has performed several studies on a variety of education policy issues including high-stakes testing, performance-pay for teachers, and the effects of vouchers on the public school system. His research has been published in the journals Education Finance and Policy, Economics of Education Review, Teachers College Record, and Education Next. His op-ed articles have appeared in numerous newspapers, including the Wall Street Journal, Washington Post, and USA Today and he is often quoted on education issues.

Winters received his B.A. in political science from Ohio University in 2002, a Ph.D. in economics from the University of Arkansas in 2008. He resides in Manhattan.

SCHOOL CHOICE
DEMONSTRATION PROJECT

School Choice Demonstration Project

Department of Education Reform

University of Arkansas

201 Graduate Education Building

Fayetteville, AR 72701

479-575-6345

http://www.uark.edu/ua/der/SCDP/Research.html