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Dynamic Participation in Inter-district Open Enrollment: Evidence from Michigan 2005-2013

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Abstract

This paper considers the determinants of student participation in Michigan's large inter-district open enrollment system, known as Schools of Choice. Employing a rich dataset from the Michigan Department of Education, we examine the population of public school students in resident and non-resident school districts between the 2005-06 and 2012-13 academic years. We find substantial evidence that historically disadvantaged students are those most likely to participate in Schools of Choice: African American students and low-income students are more likely than their peers in their resident districts to make an inter-district transfer; they are, however, also the most likely among other Schools of Choice participants to exit the program. In addition, students who are relatively low performing on the state's standardized exam—especially in mathematics—are most likely to both participate in Schools of Choice and, among participants, the most likely to exit. We conclude by noting that these patterns are similar to those found among the determinants of more general forms of student mobility.

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Abstract

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Introduction

Although charter schools and, in recent years, vouchers for private school tuition are highly visible alternatives to traditional public schooling, open enrollment programs represent an important form of school choice policy across the United States. Twenty-one states require schools to accept students from outside their home districts (inter-district open enrollment) under certain circumstances, while 23 require districts to allow students to choose within their boundaries (intra-district open enrollment) (Mikulecky, 2013). In other states, open enrollment is voluntary, but in only Alabama and Maryland are both intra-district and inter-district choice entirely non-existent (National Center for Education Statistics, 2013). Since 2002, federal policy under the No Child Left Behind Act began to require open enrollment options within districts for students in schools failing repeatedly to make Adequate Yearly Progress. The law also expanded public school choice for students with certain physical, mental or emotional needs (Cowen & Toma, 2015).

Within these broad national parameters, considerable variation exists at the state level. Districts with financial or capacity-related barriers to accepting new students are often exempt. In many cases, the rules governing entry into high-demand schools are set at local levels, often in the form of lotteries for over-subscribed schools or means-tests prioritizing students with socioeconomic or academic disadvantages. Historically, open enrollment and particularly magnet school programs have been used to address racial segregation (Schneider, Schiller, & Coleman, 1996), and in the contemporary context some states issue explicit guidelines intended to maintain racial or ethnic balances. Transportation costs associated with open enrollment are borne by individual districts, or shared by multiple districts trading students, while in others parents are responsible for transportation across catchment areas or district boundaries. Finally, the implications of these plans for district finances varies widely (Cowen and Toma, 2015; Mikulecky, 2013).

Despite the prevalence of open enrollment plans, however diverse, research on these policies is scant relative to the extensive scholarship devoted to charter schools. A handful of studies have been devoted to considering the determinants of student transfer under open enrollment-type programs, either by comparing sending and receiving districts (e.g. Reback 2008; Welsch, Statz, and Skidmore 2010; Carlson, Lavery, and Witte 2011) or by examining the characteristics of individual students themselves (e.g. Phillips, Hausman, and Larson 2012; Lavery and Carlson 2014; Bifulco, Cobb, and Bell 2009). Several studies have considered the impacts of public school choice on student achievement, (Cullen, Jacob and Levitt 2005, 2006; Hastings and Weinstein 2007; Bifulco, Cobb and Bell 2009; Deming, et al. 2011; Welsch and Zimmer 2012; Carlson, Lavery and Hughes 2014), although of these the majority are focused entirely on transfers within rather than between school districts. Finally, a number of other studies have considered the more general effects of student transfers and student mobility (e.g. Alexander, Entwisle and Dauber 1996; Hanushek, Kain and Rivkin 2004; Ingersoll, Scamman and Eckerling 1989; Rumberger et al. 1999; South, Haynie and Bose 2007; Temple and Reynolds 1999; Xu, Hannaway and D'Souza 2009)

The present paper contributes to this relatively underdeveloped literature in the school choice field by considering the characteristics of individual students who opt to leave their resident districts for a public school elsewhere through an open enrollment policy. Drawing on a rich set of administrative data on students in Michigan between 2005 and 2013, we estimate models predicting which individuals participate in the state's large-scale open enrollment program. We find consistent evidence that participation in Michigan's Schools of Choice program is dynamic, with similar student demographic and academic characteristics predicting both entry into and exit from the program. In particular, African Americans are more likely than their peers in the same district to exit the district using Schools of Choice, as are students participating in free/reduced lunch

and students with lower state test scores. These students are also the most likely to exit the program, however. Prior school characteristics appear to play a weaker role in determining student entry into Schools of Choice, but a number of demographic and academic characteristics at the school level are related to student exit. We conclude by noting that these patterns are comparable to those found in studies of broader forms of student mobility: in particular, we note that the evidence here suggests that one practical result of Michigan's Schools of Choice program is to open district borders to disadvantaged students who are likely more mobile in the first place.

Background

Previous Research: Who Chooses, Where Do They Go, and What are the Effects?

As in studies of charter or private school choice, one of the critical questions for research on open enrollment programs focuses on the characteristics of students who participate. Among the studies employing student-level data, race, academic background and socioeconomic background have all appeared among the determinants of intra or inter-district choice. Studies of Colorado's program have indicated that on some measures, open enrollment students are more advantaged—they are less likely to be eligible for free/reduced lunch, designated for special educational services, and English Language Learning, have higher reading achievement scores prior to transferring (Carlson, Lavery and Hughes 2014; Lavery and Carlson 2014). On the other hand, prior math achievement may be lower for open enrollment participants (Lavery and Carlson 2014) and race plays differential roles depending on student grade: Hispanics are disproportionately less likely to transfer, but African Americans in younger grades are more likely to transfer than white students (Lavery and Carlson 2014). Descriptive statistics from one large district in the same region have found less ambiguity, with white students and those not eligible for free/reduced lunch more likely to participate (Phillips, Hausman and Larsen 2012).

Among studies focusing on district-level differences in open enrollment participation in either Colorado, Minnesota or Wisconsin, the evidence has indicated that districts with higher levels of income are considerably more likely to have high rates of choice (Holme and Richards 2009; Welsch, Statz and Skidmore 2010; Carlson, Lavery and Witte 2011; Lavery and Carlson 2014), and that higher levels of achievement may also be associated with higher levels of public school choice. A handful of district-level studies have also considered where students who opt into open enrollment actually attend. Generally, these studies have found that schools and districts receiving transfer students tended to be better advantaged, as measured by higher test scores, higher levels of resident income or housing value, or in some cases lower levels of non-white minority students (Fossey 1994; Armore and Peiser 1998; Reback 2008; Carlson, Lavery and Witte 2011) Taken as a whole, because there is evidence that districts with higher levels of achievement send students to districts with even higher student outcomes, and because students appear to be choosing within and out of comparably high income districts, the available evidence indicates that open enrollment programs are utilized primarily in areas where socioeconomic and academic advantages are already substantial (Carlson, Lavery and Witte 2011).

The effects of public school choice have also been generally considered in a variety of geographic and programmatic settings. Evidence from Chicago's lottery-based intra-district open enrollment system has shown positive impacts of choice (Cullen, Jacob and Levitt 2005; 2006), a pattern consistent with data from Charlotte, North Carolina (Hastings and Weinstein 2007; Deming, et al. 2011) and evidence from magnet school lotteries in Connecticut (Bilfulco, Cobb and Bell 2009). Non-experimental evidence from Colorado has been mixed, with Carlson, Lavery and Hughes (2014) finding no immediate effects of transferring but, for

students who maintained participation over several years, eventual gains to achievement, particularly in reading. There is also district-level evidence from Wisconsin that indicates indirect effects of open enrollment on outcomes for students remaining in districts with high enrollment losses: these districts may be responding to competitive pressures to maintain enrollment through improved performance (Welsch and Zimmer 2012).

Finally, it is important to note that open enrollment programs are not the only source of student transfer within the public school system. A larger literature on student mobility has consistently found student transfers outside of formal choice programs (or, at least, not explicitly accounting for the existence of open enrollment) are a phenomenon associated with substantial socioeconomic disadvantage. As much as half of all urban students may transfer schools for "non-structural" reasons (i.e. reasons other than meeting a school's terminal grade) within three years (Kerbow, Azcoitia and Buell 2003), including many who transfer during the school year (Alexander, Entwisle and Dauber 1996). Such numbers may be as high as 75 percent of students across the first and twelfth grades (Rumberger, et al. 1999). All else equal, race, academic ability, income and family background appear related to student mobility and, with few exceptions, the literature has consistently demonstrated negative academic consequences for students who move and students in classrooms with high rates of turnover (Alexander, Entwisle and Dauber 1996; Hanushek, Kain and Rivkin 2004; Ingersoll, Scamman and Eckerling 1989; Kerbow, Azcoitia and Buell 2003; Rumberger et al. 1999; South, Haynie and Bose 2007; Temple and Reynolds 1999; Xu, Hannaway and D'Souza 2009). As we discuss further below, these patterns may help explain in ways otherwise underappreciated in the broader school choice literature, why substantial variation exists in both the determinants of participation and its effects on outcomes.

Michigan's Schools of Choice Program

In Michigan, various forms of modern school choice have existed since 1994. The state's Schools of Choice program established by the state legislature governs inter-district student enrollment. Michigan school districts are permitted but not required to participate in Schools of Choice.[1] Under Section 105 of the State School Aid Act, non-resident parents may choose to enroll their children in a participating local district within the same regionally determined (typically county-based) intermediate school district (ISD) as their resident district; or, under Section 105c, within a different intermediate district altogether if the choice district shares a border with the resident ISD. Each participating district determines specific provisions, including: caps on non-resident enrollment; which schools and grades are eligible to receive non-residents; whether specific academic programs are available to non-residents; and the timeline for applying for enrollment. Although most districts in the state nominally accept non-resident students, the provisions for local control imply substantial statewide variation in the extent to which school choice is realistically available to individual students.[2] Subject to these provisions, individual students may choose to leave their residential district, and in areas with more than one participating district may choose between schools in different districts. In addition to the Schools of Choice program authorized at the state level, neighboring districts may establish local cooperative agreements to permit other forms of student transfers between their borders. For the present paper, we focus exclusively on students participating in inter-district open enrollment via Schools of Choice.

[1] Michigan State School Aid Act [MCL 388.1705; 388.1705c; Sections 105, 105c]; Michigan Department of Education (2013; http://mi.gov/documents/mde/choice1_279579_7.pdf)

[2] For example, some districts participate at minimum levels required to receive Best Practices funding from the state http://www.michigan.gov/documents/mde/Best_Practice_Guidance_463861_7.pdf

Data and Methods

Data

We utilized the Michigan Department of Education's (MDE) administrative dataset from the 2005-2006 school year through the 2012-2013 school year. This dataset contains demographic information and enrollment history for the universe of Michigan students. The enrollment history contains information on whether a student participates in Michigan's School of Choice, attends a Public School Academy (charter school), or attends school in the district of residency in every year. The data set also provides Michigan Educational Assessment Program (MEAP) test scores for students in grades 3 through 8. Each student receives a unique identification code upon entry into Michigan public schools enabling us to follow a student's enrollment choices across years. In total, we are able create a panel spanning 7 years with 14,346,368 unique student-year observations which exhaustively covers Michigan students attending both traditional public schools and public school academies. Table 1 depicts the number of and percentage of enrolled students in either Section 105 or 105c of Michigan's Schools of Choice program (hereafter SoC students), as well as the number and percentage of charter students (PSA) for comparison against the total enrollment numbers. As Table 1 indicates, participation in both SoC and in the charter sector has grown steadily over the years for which we have data, while overall grade 3-8 enrollment has declined.

In our primary analyses below, which focus on differences between SoC and traditionally assigned public school students, we exclude charter school students from these comparisons. Future work will consider differences between students who choose SoC options and charter school students. Further, we limit our final sample to exclude those students attending alternative schooling options, such as vocational education schools. After removing duplicate entries for students our final sample consisted of 13,647,204 student-year observations for nearly 3 million individual students in schools serving traditional K-12 students.[3]

Variables

We constructed a series of enrollment dummy variables for each student-year observation which represent our key outcome variables of interest. Using the enrollment codes provided by MDE, we created a series of dummy variables for use of the schools of choice policy: in this paper, we focus on students who enrolled in Schools of Choice under either Section 105 or 105c described above. As we are interested in the switching decisions of students and families, we created two sets of variables to capture whether a student switched into or out of Schools of Choice. This requires comparing students' enrollment choices in year *t-1* to year *t*, effectively removing the 2005-2006 year of observations when we explore switching decisions. If a student is not in Schools of Choice in *t-1* but is flagged as a School of Choice student in t, we count them as switching into schools of choice at time *t*. Conversely, if they are in schools of choice at *t-1* but not at time *t* we code them as switching out of schools of choice at time *t*.

[3] Approximately 5.75% of student-years (806,341) had multiple records for a given year in the raw data. An examination of the data revealed this occurred typically when students switched schools midyear. We used a three step process to deal with duplicate student observations in time 1) if a student participated in SoC at any point in time t, all non-SoC entries were dropped; 2) if a student had multiple observations associated with SoC enrollment, we kept the record associated with the earliest SoC enrollment (i.e. we selected the October enrollment record over a December enrollment date); 3) for students with multiple records in a given t and never enrolled in SoC, we randomly selected an observation for the student in year t.

The richness of the MDE data set enabled us to develop a series of student, school, and district variables to use in our analysis. At the student level, we created variables from the data capturing student gender, race/ethnicity, grade of attendance, free or reduced price lunch status (FRL), limited English proficiency status (LEP), and special needs status. In addition to these demographic characteristics, we were able to include the MEAP scores for students in grades 3 – 8. We used the MEAP math and reading scores to generate two variables for each subject: the student's MEAP scores standardized for a given year at the district level, and at the state level.

The school and district level variables were generated by aggregating the individual student-year variables to the respective levels. Thus, we created variables capturing the proportion of various racial/ethnic groups, proportion of FRL students, proportion of LEP students, and proportion of special needs students at the school and district levels. Further, we have the school mean standardized district and state MEAP scores as well as the district mean standardized state MEAP scores. These variables at the school and district level let us explore what, if any, characteristics of schools and districts are associated with students opting in or opting out of Schools of Choice.

Methods

Initial Participation Statistics

As no baseline descriptive information about Michigan's School of Choice program exists in the literature, we focus considerable attention to a careful descriptive analysis. We begin with a series of bivariate analyses that provide simple comparisons between SoC students and those remaining in their residential schools. There are two ways to construct these comparisons. The first considers students who either are enrolled in SoC or enrolled in their district of residency at any given point in time, *t*, regardless of when they first entered the program. The other comparison, which we call a switcher analysis, compares students who leave their residential districts after *t-1* to enter a new district under SoC at *t* with students who remain in their residential district at *t*. Because our modeling strategy below is focused on students who switch into SoC, we similarly focus on switchers for the preliminary bivariate analyses here. In the Appendix to this paper, we present the first such comparisons between SoC and traditionally assigned public school students.

We also consider the characteristics of schools and districts of schools serving the SoC students in our panel. As with the decision to participation in SoC in the first place, there are at least two ways to consider school and district characteristics. The first simply takes a population-level view of the schools and districts attended by SoC students compared to those attended by stayer students. Such a comparison addresses the policy question: "do schools/districts attended by choice students differ, on average, than those attended by stayer students?" A second, more complicated approach contains relative comparisons: a.) between sending and destination schools/districts for each student *i* or b.) between different potential destinations for each student *i*. These two sets of comparisons address the policy questions: "how do schools/districts that students select under SoC differ from their resident schools/districts?" and "what characteristics of schools/districts make them more likely to be selected by students as destinations under SoC?", respectively. These latter two formulations are important in their own right, but speak largely to a school or district-level study focus. In this initial paper, where we are focused largely on individual participants, we simply consider school and district differences by students' SoC status. We note also that the estimated relationships between the *S* characteristics in Equation 1 provide an initial analysis of the relationship between students' school characteristics and the decision to opt out of a residential district in the following year.

Finally, we consider the characteristics of students who exit the Schools of Choice program at some point during their observed careers in the data. Mechanically such analyses in our data are difficult to conduct for all students, since despite the longevity of our panel—the eight academic years between 2005-06 and 2012-13.Only those in early grades in the early years of the panel are at least in principle observed from 2005 through 2012. We are able to simply calculate the average number of years in Schools of Choice observed in our data for all students who switch into the program at some point in our data, but these averages only provide a partial picture of the extent to which School of Choice is a permanent or more transitory feature of a student's education. In our multivariate framework below, we are able to simply estimate the probability that a student exits School of Choice conditional on participating in a given year. To obtain other descriptive statistics related to the duration of a student's participation, we necessarily focus on the students who we observe in Schools of Choice at the beginning of their academic careers.

Modeling Switchers – Multivariate Analysis

We model the choice for student *i* to opt into the School of Choice program in year *t* as a function of student, school, and district characteristics at time *t-1* (Equation 1). *O* represents the outcome of interest, whether student *i*, in school *s*, in district *d*, at time *t* opts out of their assigned district through Schools of Choice:

$$O_{isdt} = \boldsymbol{\beta C}_{isdt-1} + \boldsymbol{\gamma S}_{isdt-1} + \boldsymbol{\delta_{dt}} + \varepsilon_{isdt} \quad (1)$$

The opting out decision in time *t* is a function of a vector of student characteristics $\boldsymbol{C}$, and school characteristics $\boldsymbol{S}$ at time *t-1*, a residential district-by-year fixed effect δ and an idiosyncratic error term (ε_{isdt}). The district-by-year fixed effects imply that we are comparing students within the same resident district in the same year on the basis of whether they choose to leave under Schools of Choice or remain in that district. This is important not only to net out local variation in educational quality and access to other choice options (such as charter schools or private schools) but also because, as described above, intermediate school districts within which each student's residential districts are clustered make their own participation rules for the School of Choice program. We use the linear probability model (LPM) to estimate (1). We utilize the LPM approach for three main reasons: 1) the results are straightforward to interpret, 2) the LPM does a good job of approximating the partial effects (Wooldridge, 2010, p. 563) and the marginal effects (Angrist & Pishke, 2009, p. 107), and 3) we are interested in looking at partial correlations, not making causal claims.

The decision to leave the School of Choice program, *L*, is a function of the same vector of student and school-level controls found in (1). However, in specifying the decision to leave the program and return to a resident district, we estimate:

$$h(t_i) = exp(\boldsymbol{\beta C}_{isdt-1} + \boldsymbol{\gamma S}_{isdt-1})\boldsymbol{g}(t_i) \quad (2)$$

across all students in SoC at time *t*, where the dependence on time of students' continued participation in Schools of Choice, $g(t_i)$ is distributed Weibull. Equation 2 allows us to explicitly account for the possibility that the longer a student remains in SoC the less (or more) likely it is that she will continue her participation in the following year. Such survival models are increasingly common in the school choice literature, as well as those in education policy more generally (e.g. Lavery and Carlson 2014).

Results

Participation in Schools of Choice

Table 2 compares students who stayed in their resident district (stayer) to SoC students who left their residential district after time *t* (leaver). Several differences and similarities are particularly apparent. The proportion of white students is considerably smaller among SoC participants than among students who remain in their assigned schools (0.65 compared to 0.74). This difference is explained almost entirely by disproportionate participation in Schools of Choice among African American students, as Hispanic and multiracial or other students participate at a rate similar to the proportion of these students who remain in public schools. School of Choice students are also more likely to receive free or reduced price lunch. The program has somewhat more balance between high school, middle school and elementary school students. Similar proportions of students with limited English proficiency or special academic needs participate in SoC relative to stayer students. Perhaps most striking in Table 2 are the math and reading MEAP scores of SoC students, which are considerably lower than those for stayer students. When standardized against their own residential district means (by grade), students who left their district to participate in SoC scored 0.08 of a standard deviation lower in math in their last year prior to switching than did students who did not switch. That difference was similar in reading. When standardized against the statewide means, these differences are even more stark, around 1/5 of a standard deviation. The bottom panel of Table 2 indicates that students who leave their resident districts under SoC attend schools with higher proportions of African Americans and higher levels of free/reduced price participation in the year prior to exit. Similarly, they also attend schools at *t - 1* with lower levels of academic achievement relative to state averages (but not, unlike with student-level, lower levels relative to district averages).

The student-level patterns for switching into SoC at time *t* are largely present in Table 3, which provides estimates of Equation 1 both with and without school-level covariates included in the student-level model. In this multivariate framework, the role of race is less apparent than in the bivariate results in Table 2, but many of the other relationships are still evident. Lower income students (as indicated by free/reduced price lunch designation) are more likely to participate in Schools of Choice than non-F/RL students in the same district; students with special academic needs are less likely. Students with higher mathematics MEAP scores (standardized at the district level) are less likely to participate in SoC, while no relationship is apparent between MEAP reading and SoC participation (math and reading scores are highly correlated, at 0.65, so this is driven partly by collinearity). These results generally all hold when school-level attributes are added to the model. Few of these school-level predictors appear related to student-level participation, perhaps due to the absence of within-district school-level variation across much of the state—recall that each model already includes district fixed effects. The exception appears to be in school-level MEAP results: students attending schools with higher MEAP scores in math relative to other schools in the district are actually more likely to opt out. That result aside, the important comparison between both specifications in Table 3 is that student-level predictors of SoC participation are not affected by the inclusion or exclusion of school-level measures of those variables. Of note, the disproportionate rate of African American participation in Schools of Choice is explained away in the multivariate model once prior achievement and free/reduced lunch eligibility is taken into account.

Exiting Schools of Choice

To obtain a basic indication of a student's duration in Schools of Choice, we simply calculate the average number of years of participation in SoC that we observe for each participant in the data. Among all

participants, the average number of years in SoC is slightly less than 3 years (2.86). Among participants whom we observe transferring into the program at some point in the data—i.e. those we were not SoC in their first year in our data—this number is somewhat lower, at 2.29 years of SoC participation. As noted above, however, these numbers are somewhat affected by both the range of the data (2005-06 through 2012-13) and the fact that only a sub-group of our students—those whose kindergarten year coincided with our first year of data—are those we observe throughout the entirety of the panel. For those students, as well as those in kindergarten in either the fall of 2006 or 2007, we are able to observe at least the entirety of a student's elementary school career (for the 2005 and 2006 cohorts we can observe at least one year of middle school as well, but we limit this description to elementary school for consistency across the three cohorts). For each of these students, the maximum number of years in School of Choice is 6—kindergarten plus grades 1 through 5. Table 4 reports the percentage of School of Choice participants who began in kindergarten and completed fifth grade in Schools of Choice. As Table 4 indicates, just under 40 percent of students who began kindergarten in Schools of Choice remained in the program through 5th grade. That figure is considerably lower for African American students, free/reduced lunch students and LEP students, and somewhat lower for Hispanics and students with special needs.

Table 5 depicts similar information for all students who exit in any given year, and includes standardized MEAP scores. Similar patterns emerge in the overall population of students: African American and free/reduced price lunch students are more prevalent among students who leave Schools of Choice than among those who stay. Students who leave the program also have lower math and reading MEAP test scores in their chosen school. Among school-level characteristics, the bottom panel of Table 5 also indicates that students in schools with more African Americans and free/reduced price lunch students are more likely to exit the program. On the other hand, students who leave SoC tend to leave schools with average district MEAP scores but slightly lower than the statewide school average. Taken alongside the student-level results, these patterns suggest that lack of sustained participation in SoC may be partly explained by attendance at schools with marginally higher levels of at-risk or minority students as well.

Table 6 provides estimates of Equation 2, the model of student duration in SoC. Among SoC participants at *t-1*, generally the same individual characteristics that predicted SoC in the first place also predict exit from the open enrollment program—and in the same directions as well. The hazard coefficient of 0.08 for African American students corresponds to a hazard ratio of about 1.09—the odds of exit are nearly 10 percent higher for African Americans. Lower income students are also more likely to exit: the reported hazard coefficient corresponds to a hazard ratio 1.5 times (or 50 percent greater) for free/reduced lunch students. Higher performing SoC participants on the MEAP exam—both math and reading subjects—are less likely to exit as well. A number of school characteristics also appear to predict exit. Students in schools with higher MEAP (reading) scores are less likely to exit, while students in schools with higher rates of special needs and LEP students are more likely to exit SoC. Although all of the coefficients on school-level race demographics are positive, the coefficient for school-level African American means stands out: going from a school with no African Americans to a school with all African Americans increases would more than triple the hazard of exit from SoC. To summarize: the results in Tables 4, 5, and 6 indicate that more advantaged students stay in the SoC program longer, as do students in schools with lower levels of at-risk or minority students.

Additional Specifications and Robustness Checks

The primary results above indicate that students who leave their resident districts under schools of choice tend to be lower performing in mathematics than their peers in the same district, and more likely to be from

low-income families, as measured by free/reduced lunch participation. They are also disproportionately African American, but that difference disappears in the multivariate framework. Although we believe that the primary models provide adequate controls for observed local and temporal factors—the district-by-year fixed effect in all models and the additional time-varying school characteristics in some specifications account for locality-specific trends at a given point in time—there are still a number of other possibilities to consider. We test each of these possibilities in Table 7.

The first is that our results are explained by a small number of districts with disproportionate participation in Schools of Choice. In the appendix, we show a sample of districts with particularly high and low rates of student exit or entry, and the point is that there is considerable local variation in these transfers. We might especially worry that our results were driven by student mobility in the metropolitan Detroit area, which not only serves the greatest number of students in absolute terms, but with the presence of charter schools is a particularly choice-rich environment. To test this possibility, we re-estimate Equation 1 (the full specification, Column 2, presented in Table 3) excluding all students in Wayne County, which includes students in Detroit Public Schools and the immediate area. Column 1 of Table 7 reports these results, which are essentially unchanged.

More generally, it is possible that larger regional or geographic variation is driving these results. For example, large-urban centers are typically the focus of much of the literature on school choice due to the density of both students and schools. If our results are not confined simply to students in the Detroit-area, they may still be driving by mobility between districts in urban or suburban settings. To test this, we again re-estimate the full specification of Equation 1 (again, Column 2 of Table 3) separately for rural school districts and report these results in Column 2 of Table 7. Yet again, we see these results substantively unchanged from Table 3.

A separate explanation concerns the possibility that low performing or low-income students select into Schools of Choice at higher rate because other potential choosers—i.e. higher performing and higher-income students—select other options. For example, critics of charter schools have suggested that such a sector "cream-skims" more academically advantaged students away from traditional public schools. If, on the other hand, students attending charter schools are qualitatively similar to students participating in Schools of Choice the main estimates here should be attenuated. To consider these possibilities, we re-estimated Equation 1 including all charter students in the comparison group, and report these results in Table 7, column 3. The student-level results are materially unchanged from the earlier specification. On the other hand, the proportion of both LEP and Black/African American students in a school become statistically significant when including charter students in the comparison group. This suggests that charter school students attend schools with lower proportions of LEP and Black/African American students.

Finally, although our primary focus is specifically on students who transfer between districts under the Schools of Choice program provided by state statute, we have noted above that many districts operate local versions of open enrollment programs in partnerships with their neighboring communities. It is possible that, for whatever reason, students who select into Schools of Choice are different than inter-district transfers who switch under separate, local partnerships. We cannot observe all of these students directly in the data, but we can provide an "upper bound" estimate of their participation by simply considering a "local chooser" any student who is attending a district that is not listed as the student's own residential district *and* is not listed as a School of Choice student in our administrative data. The district of residence is only available for the school years 2009-10 through 2012-13 which necessarily restricts the following analyses to those years. Table 8 depicts these students, as well as students we observe as formal participants in Schools of Choice, to provide

a full estimate of all students participating in any kind of inter-district choice in Michigan. As indicated, when non-SoC choosers are included, the overall rate of inter-district choice in our sample jumps to 8.84 % between 2009-10 and 2012-13 compared with 6.27% for just SoC. We also re-estimate Equation 1 (column 2 of Table 3) in two new ways: first, by simply adding the local choosers to a more comprehensive indicator of inter-district choice, and predicting participation overall; second, by excluding School of Choice students and simply predicting participation in some other form of locally defined open enrollment. The results are presented in columns 1 and 2 of table 9, respectively. Column 3 of Table 9 presents a re-estimation of Equation 1 for the years 2009-2012 for students using SoC to enable a comparison within the same set of years. The results suggest some differences between local choosers and users of SoC. Black/African American students and students flagged as special needs are more likely to utilize local choice options that white students. In comparison, special needs students are less likely to utilize SoC options in both the 2009-2012 subsample and the full 2005-2012 panel. Black/African American students appear to be no more or less likely to use SoC than white students, although this is also the case in the primary results above, and is partially explained by the inclusion of prior test scores. It also appears that users of local choice policies are leaving schools with low average reading performance, which runs counter to those who are using SoC. While we cannot directly explore the nature of the local choice policies, students utilizing SoC differ in potentially systematic ways from students using local choice policies. It is possible local districts may coordinate with neighboring districts to provide specialized services to students with special needs, creating economies of scale. Further research is needed to understand the rules and rationale of the local choice policies in Michigan.

Discussion

The objective of this paper is to document student-level explanations for participation in Michigan's Schools of Choice inter-district open enrollment program. From a purely descriptive standpoint, the results provided here are straightforward: participation is directly related to student-level attributes traditionally considered by both scholars and policymakers to indicate socioeconomic disadvantage. Students who choose to exit their resident districts are more likely to be African American, and have lower levels of income as measured by free/reduced lunch participation. They are also considerably lower performing, on average, on Michigan's statewide math and reading exams, both relative to district and statewide averages. For the most part, these patterns hold when considered in a multivariate framework that not only holds constant each relationship between individual student characteristics and SoC participation but, importantly, also after netting out school-level explanations and comparisons to students within the same Michigan school district. Students who opt to leave their resident districts under Michigan's open enrollment program are less advantaged on a number of measures than their peers who stay in the same district.

Taken in isolation, such results would indicate that Schools of Choice is a program that directly appeals to low-performing and other at-risk students in Michigan. But the same characteristics also help explain student exits from open enrollment. African Americans, free/reduced lunch participants, and students with lower MEAP scores are all more likely to exit the SoC program. They are also more likely to be leaving schools with higher concentrations of at-risk or minority students. The schools they leave have similar math and reading test scores to their district averages, but somewhat lower school test scores relative to the state average. Broadly, the notion that at-risk or low achieving students are among those most likely to transfer out of a choice program after earlier participation has been demonstrated in other choice systems—notably those employing school vouchers (Howell, et al. 2004; Cowen, et al. 2012)—as well as in other studies of open enrollment in other states (Carlson, Lavery and Hughes 2014).

These patterns indicate two broad patterns associated with participation in Michigan's open enrollment program. The first is that participation itself is dynamic: to choose is not necessarily to stay. The second is the open enrollment participation rates imply the program provides a form of school choice to students from less advantaged backgrounds; however, those who exit the program are also the least advantaged relative to other SoC participants. If to choose is not necessarily to stay, it is especially not so for African Americans, free/reduced lunch participants, and students with lower test scores. In this, participation in and out of Michigan's Schools of Choice program resembles patterns identified more broadly in studies of student mobility. In those studies, the most mobile students—those who transfer between public schools between and within academic years—are generally the least advantaged along a number of socioeconomic and academic measures. That such a pattern holds here suggests at least in part that one practical result of Michigan's Schools of Choice is to open inter-district borders to students who are more mobile in the first place. Whether open enrollment influences the number of switches for this already mobile population is left to future research.

School choice remains a field that draws considerable controversy among scholars, policymakers and the general public as well. Much of that debate concerns access to high quality education—whether provided by traditionally organized public schools, charter schools, or non-public alternatives—for historically disadvantaged students. Given that such students are precisely those we have shown here to both participate and exit from this particular choice option, it is important to state directly what this paper does not show—at least in its present iteration. First, this paper does not attempt to link participation in Schools of Choice to changes in student achievement. We do not, in other words, identify or estimate the effect of open enrollment on outcomes, despite our consideration of the relationship between achievement among SoC participants and the decision to stay in or leave the program. Second, this paper does not directly consider which characteristics of a particular school or district may draw a student toward it under Schools of Choice: without considering the characteristics of receiving schools or districts, we cannot draw firm conclusions about the role of a school's demographic or academic characteristics and its ability to draw or retain choice students. Finally, for the same reason, our results do not directly inform questions about race-based school or district segregation. Whether Michigan's School of Choice program alleviates, exacerbates, or has little implication for segregation in the state's public school system is not under study here. That question, along with the others outlined above, are subjects for our next studies of this choice program.

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TABLES

Table 1: Participation Rates for Schools of Choice and Charter Schools 2005-6 to 2012-13

Year	SoC	PSA	Total K-12 Enrollment
2005-06	66560	94529	1781866
	3.74%	5.31%	100%
2006-07	71587	101787	1766148
	4.05%	5.76%	100%
2007-08	83177	103839	1755975
	4.74%	5.91%	100%
2008-09	86341	103983	1718093
	5.03%	6.36%	100%
2009-10	91995	109348	1693019
	5.43%	6.74%	100%
2010-11	99982	114057	1660234
	6.02%	7.22%	100%
2011-12	107970	119943	1642437
	6.57%	7.91%	100%
2012-13	115209	129942	1629432
	7.07%	7.97%	100%
Total sample	809162	981411	13647204
	5.93%	7.19%	100%

Source: Author calculations from data provided by the Michigan Department of Education

Table 2: Characteristics of Students Transferring into Schools of Choice 2005-06 to 2011-12

Variables (all at *t*)		**Stayer in District at *t***	**Enter Schools of Choice at *t***
Student characteristics			
Female		0.484	0.497
White		0.742	0.649
Black/African American		0.165	0.273
Hispanic		0.053	0.049
Multiracial		0.014	0.015
Elementary school		0.476	0.420
Middle school		0.253	0.245
High School		0.271	0.335
Free/Reduced lunch		0.387	0.540
Limited English Proficiency		0.038	0.017
Special Needs		0.129	0.136
Standardized at district level			
MEAP Math z-score at t		0.005	-0.080
MEAP Reading z-score at t		0.003	-0.053
Standardized at state level			
MEAP Math z-score at t		0.0400	-0.243
MEAP Reading z-score at t		0.0311	-0.188
Proportion switched or not switched		0.984	0.016
Student year N		8,910,850	142,145
School Characteristics			
School Mean Female		0.484	0.483
School Mean White		0.738	0.662
School Mean Black/African American		0.166	0.255
School Mean Hispanic		0.054	0.052
School Mean Multiracial		0.014	0.013
School Mean Free/Reduced lunch		0.383	0.475
School Mean Limited English Proficiency		0.037	0.025
School Mean Special Needs		0.129	0.136
Standardized at district level			
School Mean MEAP Math z-score		0.012	0.012
School Mean MEAP Reading z-score		0.007	0.008
Standardized at state level			
School Mean MEAP Math z-score		0.002	-0.197
School Mean MEAP Reading z-score		-0.007	-0.170

Student-year N		10,301,574	170,174

Source: Author calculations from data provided by the Michigan Department of Education; transfer defined as participation at t conditional on non-participation at t-1; 2012-13 excluded.

Table 3: Estimated Models of Student Transfer into Schools of Choice at *t*

Variables (all at t-1)	1	2
female	0.001***	0.001***
	(0.000)	(0.000)
blackafam	0.000	0.001
	(0.001)	(0.001)
hispanic	0.000	0.000
	(0.000)	(0.000)
multiracial	0.001**	0.001*
	(0.001)	(0.001)
amerindian	0.002**	0.002**
	(0.001)	(0.001)
asianamer	0.000	0.000
	(0.001)	(0.001)
pacificislander	0.001	0.001
	(0.002)	(0.002)
middle	0.013***	0.013***
	(0.003)	(0.003)
frl	0.005***	0.005***
	(0.000)	(0.000)
lep	-0.006***	-0.006***
	(0.001)	(0.001)
specialneeds	-0.001***	-0.001***
	(0.000)	(0.000)

district_standardizedMEAPmath	-0.001***	-0.001***
	(0.000)	(0.000)
district_standardizedMEAPreading	-0.000	-0.000
	(0.000)	(0.000)
schmeandistrictMEAPmath		-0.003**
		(0.001)
schmeandistrictMEAPreading		0.007***
		(0.002)
schmeanspecialneeds		0.001
		(0.004)
schmeanlep		0.002
		(0.003)
schmeanfrl		-0.002
		(0.002)
schmeanwhite		0.026**
		(0.013)
schmeanpacificislander		0.026
		(0.019)
schmeanblackafam		0.019
		(0.013)
schmeanasianamer		0.031**
		(0.014)
schmeanamerindian		0.007
		(0.008)
schmeanmultiracial		0.037**
		(0.014)

schmeanhispanic		0.020
		(0.013)
state_standardizedMEAPmath		
state_standardizedMEAPreading		
Constant	-0.002	-0.026**
	(0.003)	(0.013)
Observations	4,188,476	4,188,476
Number of distxyear	3,986	3,986

***p<0.01 **p<0.05 *p<0.10; robust standard errors in parantheses clustered by school at *t-1*. Estimates are linear probability coefficients; Models include district by year fixed effects and grade fixed effects.

Table 4: % of School of Choice Participants Remaining in Program Through Elementary School

	% in School of Choice K through 5th Grade
All Students in Schools of Choice	**39.49**
Female	40.43
Male	38.68
White	41.34
Black/African American	28.75
Hispanic	34.47
Free/Reduced Lunch	28.47
LEP	28.95
Special Needs	33.68

Note: Based on kindergarten cohorts from the 2005, 2006 and 2007 academic years.

Table 5: Characteristics of Students Transferring Out of Schools of Choice 2005-06 to 2011-12

Variables (all at t-1)		**Stayer in SoC at *t***	**Exit SoC at *t***
Female		0.499	0.492
White		0.723	0.666
Black/African American		0.198	0.257
Hispanic		0.048	0.048
Multiracial		0.018	0.017
Elementary school		0.460	0.449
Middle school		0.229	0.216
High School		0.298	0.305
Free/Reduced lunch		0.405	0.480
Limited English Proficiency		0.012	0.010
Special Needs		0.107	0.121
Standardized at district level			
MEAP Math z-score[a]		-0.029	-0.128
MEAP Reading z-score[a]		0.000	-0.092
Standardized at state level			
MEAP Math z-score[a]		-0.028	-0.241
MEAP Reading z-score[a]		0.008	-0.188
Student-year N		434,056	104,298
School Characteristics			
School Mean Female		0.487	0.486
School Mean White		0.761	0.705
School Mean Black/African American		0.158	0.217
School Mean Hispanic		0.047	0.047
School Mean Multiracial		0.014	0.013
School Mean Free/Reduced lunch		0.392	0.426
School Mean Limited English Proficiency		0.019	0.018
School Mean Special Needs		0.119	0.122
Standardized at district level			
School Mean MEAP Math z-score[a]		0.017	0.006
School Mean MEAP Reading z-score[a]		0.015	0.008
Standardized at state level			
School Mean MEAP Math z-score[a]		-0.015	-0.113
School Mean MEAP Reading z-score[a]		-0.006	-0.085
Student-year N		434,056	104,298

Source: Author calculations from data provided by the Michigan Department of Education; transfer defined as non-participation at t conditional on participation at t-1; 2012-13 excluded.

Table 6: Hazard Estimates of Student Exit from Schools of Choice at *t*

Variables (all at *t-1)*	**(1)**
female	0.018*
	(0.011)
blackafam	0.084***
	(0.032)
hispanic	-0.009
	(0.031)
multiracial	0.031
	(0.038)
amerindian	0.178***
	(0.067)
asianamer	-0.148**
	(0.073)
pacificislander	0.157
	(0.179)
middle	-0.412***
	(0.033)
frl	0.382***
	(0.016)
lep	0.058
	(0.063)
specialneeds	-0.028
	(0.019)
district_standardizedMEAPmath	-0.063***
	(0.008)
district_standardizedMEAPreading	-0.027***
	(0.007)
schmeandistrictMEAPmath	0.018
	(0.204)
schmeandistrictMEAPreading	-0.222
	(0.224)
schmeanspecialneeds	1.331***
	(0.205)
schmeanlep	1.008***
	(0.313)
schmeanfrl	-0.631***
	(0.130)
schmeanwhite	0.396
	(0.302)
schmeanblackafam	1.143***
	(0.305)
schmeanhispanic	0.289

	(0.371)
Constant	-5.540***
	(0.297)
ln_p	0.718***
	(0.006)
Student-year N	400,213

***p<0.01 **p<0.05 *p<0.10; robust standard errors in parantheses clustered by school at *t-1*. Estimates are hazard coefficients

Table 7: Estimated Models of Student Transfer into Schools of Choice at t for Different Sample Specifications.

	Excluding Wayne County	Rural	Including PSA
Variables (all at t-1)			
female	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
blackafam	-0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)
hispanic	-0.000	-0.002**	0.000
	(0.000)	(0.001)	(0.000)
multiracial	0.001	0.002	0.001
	(0.001)	(0.002)	(0.001)
amerindian	0.002**	0.002	0.002***
	(0.001)	(0.002)	(0.001)
asianamer	-0.001	-0.001	0.000
	(0.001)	(0.001)	(0.001)
pacificislander	0.001	0.002	0.001
	(0.002)	(0.004)	(0.002)
middle	0.011***	0.007	0.007
	(0.004)	(0.007)	(0.004)
frl	0.006***	0.007***	0.004***
	(0.000)	(0.000)	(0.000)
lep	-0.006***	-0.008***	-0.006***
	(0.000)	(0.001)	(0.001)
specialneeds	-0.001***	-0.001	-0.001***
	(0.000)	(0.000)	(0.000)
district_standardizedMEAPmath	-0.001***	-0.002***	-0.001***
	(0.000)	(0.000)	(0.000)
district_standardizedMEAPreading	-0.000	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)
schmeandistrictMEAPmath	-0.002	0.001	-0.003**
	(0.001)	(0.003)	(0.001)
schmeandistrictMEAPreading	0.006***	0.003	0.007***
	(0.002)	(0.003)	(0.002)
schmeanspecialneeds	-0.001	0.006	0.001
	(0.005)	(0.007)	(0.004)
schmeanlep	-0.001	0.017	0.006*
	(0.004)	(0.014)	(0.003)
schmeanfrl	0.004*	0.003	-0.000
	(0.002)	(0.005)	(0.002)
schmeanwhite	0.008	-0.027	0.033**

	(0.013)	(0.023)	(0.014)
schmeanpacificislander	-0.001	-0.164	0.029
	(0.018)	(0.114)	(0.019)
schmeanblackafam	-0.004	-0.029	0.027**
	(0.014)	(0.030)	(0.014)
schmeanasianamer	0.009	-0.047*	0.039***
	(0.013)	(0.026)	(0.015)
schmeanamerindian	0.000	-0.048	0.007
	(0.008)	(0.033)	(0.008)
schmeanmultiracial	0.003	-0.013	0.057***
	(0.014)	(0.024)	(0.016)
schmeanhispanic	0.006	-0.036	0.026*
	(0.013)	(0.023)	(0.013)
Constant	-0.009	0.031	-0.028**
	(0.013)	(0.024)	(0.014)
Observations	3,430,297	990,524	4,530,376
Number of Districts x Year	0.001	0.001	0.001

***p<0.01 **p<0.05 *p<0.10; robust standard errors in parantheses clustered by school at *t-1*. Estimates are linear probability coefficients; Models include district by year fixed effects and grade fixed effects.

Table 8: Summary of All Inter-district Transfers in Michigan 2009 - 2012

	N (% of all Inter-district Choosers)
Students transferring under Schools of Choice	415,156 (70.9%)
Non-PSA "local choosers"	170,424 (19.1%)
Total	585,580 (100%)
(% of All Michigan Students)	8.84%

Note: "local choosers" defined as students with non-matching resident and attending district codes, excluding students in Schools of Choice.

Table 9: Estimated Models of Student Transfer into Alternate Definitions of Inter-district Choice at *t* (2009-2012)

Variables (all at *t-1)*	**(1)**	**(2)**	**(3)**
	Any Non-Resident Switch	**Switch Under Local Policy**	**SoC**
female	0.001***	-0.000	0.001***
	(0.000)	(0.000)	(0.000)
blackafam	0.001	0.002***	-0.001
	(0.001)	(0.000)	(0.001)
hispanic	0.001	0.001	-0.001
	(0.001)	(0.001)	(0.001)
multiracial	0.001	0.002**	0.000
	(0.001)	(0.001)	(0.001)
amerindian	0.001	0.001	-0.000
	(0.002)	(0.001)	(0.001)
asianamer	0.003**	0.001**	0.001
	(0.001)	(0.001)	(0.001)
pacificislander	0.003	0.001	0.002
	(0.004)	(0.003)	(0.003)
middle	0.047***	0.020**	0.026***
	(0.010)	(0.009)	(0.008)
frl	0.008***	0.003***	0.005***
	(0.000)	(0.000)	(0.000)
lep	-0.010***	-0.003***	-0.006***
	(0.001)	(0.001)	(0.001)
specialneeds	0.003***	0.004***	-0.001***
	(0.001)	(0.000)	(0.000)
district_standardizedMEAPmath	-0.002***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
district_standardizedMEAPreading	-0.000***	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)
schmeandistrictMEAPmath	-0.005	-0.002	-0.002
	(0.004)	(0.003)	(0.002)
schmeandistrictMEAPreading	-0.008	-0.016**	0.008***
	(0.008)	(0.007)	(0.002)
schmeanspecialneeds	0.009	0.003	0.000
	(0.014)	(0.012)	(0.005)
schmeanlep	-0.026**	-0.023**	-0.002
	(0.011)	(0.009)	(0.004)
schmeanfrl	-0.003	-0.008	0.003
	(0.007)	(0.006)	(0.003)
schmeanwhite	0.049*	0.022	0.027

	(0.029)	(0.018)	(0.017)
schmeanpacificislander	0.113	0.056	0.036
	(0.119)	(0.113)	(0.050)
schmeanblackafam	0.018	0.001	0.019
	(0.029)	(0.020)	(0.017)
schmeanasianamer	0.078**	0.050**	0.031*
	(0.034)	(0.025)	(0.018)
schmeanamerindian	0.006	0.003	0.003
	(0.023)	(0.020)	(0.009)
schmeanmultiracial	0.012	0.002	0.013
	(0.027)	(0.018)	(0.019)
schmeanhispanic	0.029	0.007	0.025
	(0.028)	(0.016)	(0.016)
Constant	-0.072**	-0.028	-0.039**
	(0.030)	(0.020)	(0.019)
Observations	1,636,522	1,637,799	1,703,473
Number of Districts x Year	1,631	1,631	1,702

***p<0.01 **p<0.05 *p<0.10; robust standard errors in parantheses clustered by school at *t-1*. Estimates are linear probability coefficients; Models include district by year fixed effects and grade fixed effects. Note: The sample for these estimates are restricted to the years 2009 -2012. This is limited due to data availability for students' district of residence.

APPENDICES:

A1 Descriptive statistics of students based on enrollment in Schools of Choice (2005 – 2012)

Variables (all at *t*)		**Non-School of Choice students (at t)**	**Students in any type of School of Choice (at t)**
Student characteristics			
Female		0.485	0.498
White		0.713	0.707
Black/African American		0.191	0.214
Hispanic		0.056	0.050
Multiracial		0.015	0.019
Elementary school		0.444	0.424
Middle school		0.232	0.213
High School		0.324	0.363
Free/Reduced lunch		0.400	0.427
Limited English Proficiency		0.039	0.012
Special Needs		0.123	0.107
Standardized at district level			
MEAP Math z-score at t		0.004	-0.045
MEAP Reading z-score at t		0.001	-0.016
Standardized at state level			
MEAP Math z-score at t		0.010	-0.068
MEAP Reading z-score at t		0.005	-0.027
Proportion switched or not switched		0.946	0.054
Student year N		12,251,258	695,329
School Characteristics			
School Mean Female		0.486	0.487
School Mean White		0.710	0.745
School Mean Black/African American		0.193	0.174
School Mean Hispanic		0.056	0.048
School Mean Multiracial		0.015	0.016
School Mean Free/Reduced lunch		0.399	0.408
School Mean Limited English Proficiency		0.038	0.020
School Mean Special Needs		0.125	0.119
Standardized at district level			
School Mean MEAP Math z-score		0.015	0.017
School Mean MEAP Reading z-score		0.010	0.013
Standardized at state level			
School Mean MEAP Math z-score		-0.033	-0.040
School Mean MEAP Reading z-score		-0.038	-0.020

Student-year N		12,251,258	695,329

A2: SoC Participation by Students Classified as SoC 2005-2013

A2. Top and bottom quintiles of districts based on proportion of students in district that are SoC based on average per year proportion.				
Quintile 1			**Quintile 5**	
Allegan Area Educational Service	0		Sodus Township S/D #5	0.8908529
Allendale Public Schools	0		Oneida Township S/D #3	0.874958
Alpena-Montmorency-Alcona ESD -	0		Colfax Township S/D #1F	0.8601665
Atherton Community Schools	0		Bangor Township S/D #8	0.8098626
Barry ISD - District created fro	0		Glenn Public School District	0.7691527
Bay-Arenac ISD - District create	0		Sigel Township S/D #3F	0.7138045
Beaver Island Community School	0		Church School District	0.6482862
Beecher Community School Distric	0		Verona Township S/D #1F	0.6347761
Belding Area School District	0		Hagar Township S/D #6	0.6189465
Bendle Public Schools	0		Moran Township School District	0.5952899
Berrien RESA - District created	0		Sigel Township S/D #6	0.580763
Bloomfield Hills Schools	0		Highland Park City Schools	0.4718556
Bois Blanc Pines School District	0		Mar Lee School District	0.4621197
Branch ISD - District created fr	0		Clintondale Community Schools	0.450133
C.O.O.R. ISD - District created	0		Bloomfield Township S/D #7F	0.4416667
Caledonia Community Schools	0		Free Soil Community Schools	0.4387443
Calhoun ISD - District created f	0		Sigel Township S/D #4F	0.4102028
Charlevoix-Emmet ISD - District	0		Madison School District (Lenawee	0.408216
Cheb-Otsego-Presque Isle ESD - D	0		Vandercook Lake Public Schools	0.4078569
Chelsea School District	0		Westwood Community School Distri	0.407191
Clare-Gladwin Regional Education	0		School District of the City of I	0.3967995
Clinton County RESA - District c	0		Grant Township S/D #2	0.39375
Clio Area School District	0		Oak Park, School District of the	0.3886454
Comstock Public Schools	0		AuTrain-Onota Public Schools	0.3876815
Copper Country ISD - District cr	0		Madison District Public Schools	0.3842303
Dearborn City School District	0		Dearborn Heights School District	0.3836385
Delta-Schoolcraft ISD - District	0		Carrollton Public Schools	0.3798007
Dexter Community School District	0		Eau Claire Public Schools	0.3723673
Dickinson-Iron ISD - District cr	0		Galien Township School District	0.3595136
Dundee Community Schools	0		Britton Deerfield Schools	0.3518681
Eastern Upper Peninsula ISD - Di	0		Jonesville Community Schools	0.3451546
Easton Township S/D #6	0		River Rouge, School District of	0.3436198
Eaton ISD - District created fro	0		Corunna Public Schools	0.3384913
Education Achievement System-EAS	0		Arvon Township School District	0.3271329
Genesee ISD - District created f	0		Beal City Public Schools	0.3196734

Godfrey-Lee Public Schools	0		Riverview Community School Distr	0.3191296
Gogebic-Ontonagon ISD - District	0		Sand Creek Community Schools	0.3139615
Grand Rapids Public Schools	0		Wells Township School District	0.3106419
Grant Public School District	0		Caseville Public Schools	0.3023363
Gratiot-Isabella RESD - District	0		Pittsford Area Schools	0.3012538
Grosse Pointe Public Schools	0		Essexville-Hampton Public School	0.2940496
Harbor Springs School District	0		Houghton-Portage Township School	0.291479
Hillsdale ISD - District created	0		Bridgman Public Schools	0.2811575
Huron ISD - District created fro	0		School District of Ypsilanti	0.2707297
Ida Public School District	0		Dollar Bay-Tamarack City Area Sc	0.2688
Ingham ISD - District created fr	0		Lakeview Public Schools (Macomb)	0.2650043
Ionia ISD - District created fro	0		Pennfield Schools	0.2642007
Ionia Public Schools	0		Swan Valley School District	0.2637673
Iosco RESA - District created fr	0		Bark River-Harris School Distric	0.2543038
Jackson ISD - District created f	0		Western School District	0.2535662
Kalamazoo Public Schools	0		Carney-Nadeau Public Schools	0.2526017
Kalamazoo RESA - District create	0		Coloma Community Schools	0.2488133
Kelloggsville Public Schools	0		Mason County Eastern Schools	0.2486079
Kent ISD - District created from	0		Hanover-Horton School District	0.2475046
Lake Orion Community Schools	0		New Buffalo Area Schools	0.2437747
Lapeer ISD - District created fr	0		Michigan Center School District	0.2426145
Lenawee ISD - District created f	0		Melvindale-North Allen Park Scho	0.2415673
Lewis Cass ISD - District create	0		Onekama Consolidated Schools	0.2410066
Livingston ESA - District create	0		Pentwater Public School District	0.2375597
Mackinac Island Public Schools	0		Mason County Central Schools	0.2365329
Macomb ISD - District created fr	0		Watervliet School District	0.2359947
Manistee ISD - District created	0		Bangor Township Schools	0.2346192
Marquette-Alger RESA - District	0		Clawson Public Schools	0.2324029
Mecosta-Osceola ISD - District c	0		Ecorse Public Schools	0.2319877
Menominee ISD - District created	0		East Jackson Community Schools	0.2306659
Michigan Department of Human Ser	0		West Bloomfield School District	0.228474
Midland County Educational Servi	0		North Adams-Jerome Public School	0.2281646
Montcalm Area ISD - District cre	0		Burt Township School District	0.2273935
Muskegon Area ISD - District cre	0		Ferndale Public Schools	0.2268047
Newaygo County RESA - District c	0		Saugatuck Public Schools	0.2232514
Northview Public Schools	0		Peck Community School District	0.2181366
Novi Community School District	0		Bear Lake Schools	0.2130223
Oakland Schools - District creat	0		Big Jackson School District	0.2086378
Oakridge Public Schools	0		Palo Community School District	0.2072192
Ottawa Area ISD - District creat	0		Fulton Schools	0.2058943
Portland Public Schools	0		Berrien Springs Public Schools	0.2051829
Rochester Community School Distr	0		Elm River Township School Distri	0.2041667
Saginaw ISD - District created f	0		Fraser Public Schools	0.2041353
Sanilac ISD - District created f	0		Owendale-Gagetown Area School Di	0.2015345

Saranac Community Schools	0		Buena Vista School District	0.1994212
School District of the City of B	0		Concord Community Schools	0.1990893
Shiawassee Regional ESD - Distri	0		New Lothrop Area Public Schools	0.1947801
St. Clair County RESA - District	0		East Lansing School District	0.1921928
St. Johns Public Schools	0		Mount Clemens Community School D	0.1914591
St. Joseph County ISD - District	0		Allen Park Public Schools	0.190322
Summerfield Schools	0		Carsonville-Port Sanilac School	0.1902555
Traverse Bay Area ISD - District	0		Bullock Creek School District	0.1902307
Tuscola ISD - District created f	0		Walkerville Public Schools	0.189461
Van Buren ISD - District created	0		Lake Shore Public Schools (Macom	0.1876862
Washtenaw ISD - District created	0		Milan Area Schools	0.1869294
Wayne RESA - District created fr	0		Homer Community School District	0.1835621
West Shore Educational Service D	0		Port Hope Community Schools	0.1826151
Wexford-Missaukee ISD - District	0		Reese Public Schools	0.182154
Whiteford Agricultural School Di	0		Boyne Falls Public School Distri	0.1806984
Flint, School District of the Ci	0.000013		Southgate Community School Distr	0.1803922
Northville Public Schools	0.0000157		Leland Public School District	0.1788193
Monroe Public Schools	0.000018		Ellsworth Community School	0.1742559
Forest Hills Public Schools	0.0000361		Brandywine Community Schools	0.1730274
Coldwater Community Schools	0.0000387		Chassell Township School Distric	0.172523
Orchard View Schools	0.0000432		Mackinaw City Public Schools	0.1722113
Kentwood Public Schools	0.0000543		Northport Public School District	0.1714843
East Grand Rapids Public Schools	0.0000832		Pickford Public Schools	0.1713319
Bentley Community School Distric	0.0001524		Clinton Community Schools	0.1684491
Glen Lake Community Schools	0.000159		Lakeview Sch. District (Calhoun)	0.167474
Grand Blanc Community Schools	0.0001671		Berkley School District	0.1663842
Livonia Public Schools School Di	0.000169		Potterville Public Schools	0.1656566
Rockford Public Schools	0.0001887		Springport Public Schools	0.1649686
Baldwin Community Schools	0.0002073		Tekonsha Community Schools	0.1648171
Alpena Public Schools	0.00024		Marcellus Community Schools	0.1643792
Crestwood School District	0.0003084		McBain Rural Agricultural School	0.1643627
Freeland Community School Distri	0.0003393		Alcona Community Schools	0.1641555
Mt. Morris Consolidated Schools	0.0003483		Iron Mountain Public Schools	0.1605676
Zeeland Public Schools	0.0003835		Big Bay De Noc School District	0.1596613
Byron Center Public Schools	0.0004095		Holt Public Schools	0.159248
Wyoming Public Schools	0.0004306		Camden-Frontier School	0.1586438
Reeths-Puffer Schools	0.0004502		Wyandotte, School District of th	0.1585435
Monroe ISD - District created fr	0.0004647		Warren Woods Public Schools	0.1578923
Flushing Community Schools	0.0005379		Waverly Community Schools	0.1561055
Centreville Public Schools	0.0005517		Napoleon Community Schools	0.1559368
Kenowa Hills Public Schools	0.0006973		Leslie Public Schools	0.155762
Kent City Community Schools	0.0007109		Webberville Community Schools	0.1555311
Trenton Public Schools	0.0008478			
Total	0.0000661		Total	0.2936637

A3: District Rates of Student Exit Under SoC

A3 Top and bottom quintiles of districts based on proportion of students exiting the district through SoC based on average per year proportion.				
Quintile 1			Quintile 5	
Allegan Area Educational Service	0		Grant Township S/D #2	0.2083333
Allendale Public Schools	0		Bloomfield Township S/D #7F	0.1875
Alpena Public Schools	0		Oneida Township S/D #3	0.1861284
Alpena-Montmorency-Alcona ESD -	0		Highland Park City Schools	0.1521386
Atherton Community Schools	0		Bangor Township S/D #8	0.1423525
Barry ISD - District created fro	0		Sigel Township S/D #3F	0.1406712
Bay-Arenac ISD - District create	0		Free Soil Community Schools	0.1274565
Beaver Island Community School	0		Verona Township S/D #1F	0.1177929
Beecher Community School Distric	0		Glenn Public School District	0.1118257
Belding Area School District	0		Colfax Township S/D #1F	0.1054088
Bendle Public Schools	0		Moran Township School District	0.1049691
Bentley Community School Distric	0		Westwood Community School Distri	0.0986202
Berrien RESA - District created	0		Mar Lee School District	0.0965102
Bloomfield Hills Schools	0		Sodus Township S/D #5	0.0922846
Bois Blanc Pines School District	0		Hagar Township S/D #6	0.0834192
Branch ISD - District created fr	0		Sigel Township S/D #6	0.0785985
Byron Center Public Schools	0		Clintondale Community Schools	0.0748343
C.O.O.R. ISD - District created	0		River Rouge, School District of	0.0719892
Caledonia Community Schools	0		AuTrain-Onota Public Schools	0.0712547
Calhoun ISD - District created f	0		Wells Township School District	0.0683517
Carman-Ainsworth Community Schoo	0		Church School District	0.0658505
Centreville Public Schools	0		Oak Park, School District of the	0.0634621
Charlevoix-Emmet ISD - District	0		School District of the City of I	0.0621733
Cheb-Otsego-Presque Isle ESD - D	0		Madison District Public Schools	0.0612982
Chelsea School District	0		Galien Township School District	0.0600117
Clare-Gladwin Regional Education	0		School District of Ypsilanti	0.0562567
Clinton County RESA - District c	0		Burt Township School District	0.055753
Clio Area School District	0		Ecorse Public Schools	0.052441
Coldwater Community Schools	0		Vandercook Lake Public Schools	0.0520655
Comstock Public Schools	0		Mount Clemens Community School D	0.0516361
Copper Country ISD - District cr	0		Dearborn Heights School District	0.050126
Dearborn City School District	0		Buena Vista School District	0.0496493
Delta-Schoolcraft ISD - District	0		Carrollton Public Schools	0.0478989
Dexter Community School District	0		Pennfield Schools	0.0459872
Dickinson-Iron ISD - District cr	0		Mason County Eastern Schools	0.0453666
Dundee Community Schools	0		Pittsford Area Schools	0.0452079
East Grand Rapids Public Schools	0		Caseville Public Schools	0.045162
Eastern Upper Peninsula ISD - Di	0		North Muskegon Public Schools	0.0445727

Easton Township S/D #6	0		Eau Claire Public Schools	0.0431992
Eaton ISD - District created fro	0		Willow Run Community Schools	0.0424224
Education Achievement System-EAS	0		Tekonsha Community Schools	0.0419866
Excelsior Township S/D #1	0		Elm River Township School Distri	0.040625
Flint, School District of the Ci	0		Michigan Center School District	0.0393156
Forest Hills Public Schools	0		Britton Deerfield Schools	0.0391212
Freeland Community School Distri	0		Jonesville Community Schools	0.0384725
Genesee ISD - District created f	0		Madison School District (Lenawee	0.0382965
Glen Lake Community Schools	0		Elk Rapids Schools	0.0371671
Godfrey-Lee Public Schools	0		Walkerville Public Schools	0.0350796
Godwin Heights Public Schools	0		Clawson Public Schools	0.0349824
Gogebic-Ontonagon ISD - District	0		Mason County Central Schools	0.0347798
Grand Blanc Community Schools	0		Coloma Community Schools	0.034508
Grand Rapids Public Schools	0		Frankfort-Elberta Area Schools	0.0339422
Grandville Public Schools	0		East Jackson Community Schools	0.0335773
Grant Public School District	0		Ellsworth Community School	0.033437
Gratiot-Isabella RESD - District	0		North Adams-Jerome Public School	0.0330536
Greenville Public Schools	0		Boyne Falls Public School Distri	0.0318803
Grosse Pointe Public Schools	0		Pentwater Public School District	0.0316826
Harbor Springs School District	0		Corunna Public Schools	0.0316355
Hart Public School District	0		Ashley Community Schools	0.0315964
Hillsdale ISD - District created	0		Fulton Schools	0.0313476
Huron ISD - District created fro	0		Mancelona Public Schools	0.0311067
Ida Public School District	0		Alba Public Schools	0.030784
Ingham ISD - District created fr	0		Beal City Public Schools	0.0306298
Ionia ISD - District created fro	0		Ionia Township S/D #2	0.0305556
Ionia Public Schools	0		Alcona Community Schools	0.0304709
Iosco RESA - District created fr	0		Kaleva Norman Dickson School Dis	0.0302392
Jackson ISD - District created f	0		Peck Community School District	0.0300397
Kalamazoo Public Schools	0		Reading Community Schools	0.029991
Kalamazoo RESA - District create	0		Palo Community School District	0.0297695
Kelloggsville Public Schools	0		Melvindale-North Allen Park Scho	0.0295577
Kenowa Hills Public Schools	0		Watervliet School District	0.0291021
Kent ISD - District created from	0		Houghton-Portage Township School	0.0286834
Kentwood Public Schools	0		St. Louis Public Schools	0.028435
Lake Orion Community Schools	0		Riverview Community School Distr	0.0284168
Lakeview Community Schools (Mont	0		Waldron Area Schools	0.0283662
Lapeer ISD - District created fr	0		Onekama Consolidated Schools	0.0279136
Lenawee ISD - District created f	0		Sand Creek Community Schools	0.0277243
Lewis Cass ISD - District create	0		Webberville Community Schools	0.0275374
Livingston ESA - District create	0		Bullock Creek School District	0.0272022
Mackinac Island Public Schools	0		Owendale-Gagetown Area School Di	0.0271156
Macomb ISD - District created fr	0		Homer Community School District	0.0269304
Manistee ISD - District created	0		Clare Public Schools	0.0264578

Marquette-Alger RESA - District	0		St. Ignace Area Schools	0.0260264
Mecosta-Osceola ISD - District c	0		Covert Public Schools	0.0259624
Menominee ISD - District created	0		Concord Community Schools	0.0258617
Michigan Department of Human Ser	0		Engadine Consolidated Schools	0.0257527
Midland County Educational Servi	0		Swan Valley School District	0.0255322
Monroe Public Schools	0		Brandywine Community Schools	0.0255211
Montcalm Area ISD - District cre	0		Ferndale Public Schools	0.025222
Mt. Morris Consolidated Schools	0		New Buffalo Area Schools	0.0248937
Muskegon Area ISD - District cre	0		Johannesburg-Lewiston Area Schoo	0.0244121
Newaygo County RESA - District c	0		Carsonville-Port Sanilac School	0.0243989
Northview Public Schools	0		Bridgman Public Schools	0.0243344
Northville Public Schools	0		Sigel Township S/D #4F	0.0240275
Nottawa Community School	0		Essexville-Hampton Public School	0.0236242
Novi Community School District	0		Marcellus Community Schools	0.0235769
Oakland Schools - District creat	0		Saugatuck Public Schools	0.0235635
Oakridge Public Schools	0		Bark River-Harris School Distric	0.0235208
Ottawa Area ISD - District creat	0		Kingsley Area Schools	0.0234447
Portland Public Schools	0		Kingston Community School Distri	0.0232658
Rochester Community School Distr	0		Hanover-Horton School District	0.0231532
Rockford Public Schools	0		Morrice Area Schools	0.0230438
Saginaw ISD - District created f	0		Lakeview Public Schools (Macomb)	0.0230112
Sanilac ISD - District created f	0		Port Hope Community Schools	0.0227382
Saranac Community Schools	0		Camden-Frontier School	0.0227123
School District of the City of B	0		Southgate Community School Distr	0.0225549
Shiawassee Regional ESD - Distri	0		Hale Area Schools	0.0225312
Sparta Area Schools	0		Fruitport Community Schools	0.0224993
St. Clair County RESA - District	0		Western School District	0.0224721
St. Johns Public Schools	0		Milan Area Schools	0.022368
St. Joseph County ISD - District	0		Fraser Public Schools	0.0220231
Summerfield Schools	0		Hillsdale Community Schools	0.0219118
Traverse Bay Area ISD - District	0		Alma Public Schools	0.0219048
Trenton Public Schools	0		Lake Shore Public Schools (Macom	0.0214821
Tuscola ISD - District created f	0		Litchfield Community Schools	0.0214821
Van Buren ISD - District created	0		Mid Peninsula School District	0.0213597
Washtenaw ISD - District created	0		Bear Lake Schools	0.0212758
Wayne RESA - District created fr	0		River Valley School District	0.0212126
West Shore Educational Service D	0		Hartford Public Schools	0.0211516
Wexford-Missaukee ISD - District	0		Carney-Nadeau Public Schools	0.0210167
Whiteford Agricultural School Di	0		Bad Axe Public Schools	0.020982
Wyoming Public Schools	0		Total	0.0463663

A4: District Rates of Student Entry Under SoC

A4 Top and bottom quintiles of districts based on proportion of students exiting the district through SoC based on average per year proportion.				
Quintile 1			Quintile 5	
Alpena-Montmorency-Alcona ESD -	0		Bloomfield Township S/D #7F	0.2083333
Bay-Arenac ISD - District create	0		Free Soil Community Schools	0.2051317
Beaver Island Community School	0		Grant Township S/D #2	0.1791667
Bois Blanc Pines School District	0		Big Jackson School District	0.1024743
C.O.O.R. ISD - District created	0		Hillsdale ISD - District created	0.1016743
Charlevoix-Emmet ISD - District	0		Galien Township School District	0.0953223
Clare-Gladwin Regional Education	0		Washtenaw ISD - District created	0.0855716
Delta-Schoolcraft ISD - District	0		Wexford-Missaukee ISD - District	0.0810229
Eastern Upper Peninsula ISD - Di	0		Hagar Township S/D #6	0.0794033
Easton Township S/D #6	0		Arvon Township School District	0.0788691
Eaton ISD - District created fro	0		Allegan Area Educational Service	0.0645549
Education Achievement System-EAS	0		Sigel Township S/D #3F	0.0625
Gogebic-Ontonagon ISD - District	0		School District of the City of I	0.0616338
Ionia ISD - District created fro	0		Vanderbilt Area Schools	0.0613781
Iosco RESA - District created fr	0		Jackson ISD - District created f	0.0605359
Kent ISD - District created from	0		Excelsior Township S/D #1	0.0594691
Lapeer ISD - District created fr	0		Wells Township School District	0.0590909
Livingston ESA - District create	0		Gratiot-Isabella RESD - District	0.0582909
Manistee ISD - District created	0		Willow Run Community Schools	0.055369
Michigan Department of Human Ser	0		Palo Community School District	0.0544572
Muskegon Area ISD - District cre	0		North Adams-Jerome Public School	0.0540321
Newaygo County RESA - District c	0		AuTrain-Onota Public Schools	0.0535644
Oakland Schools - District creat	0		Mar Lee School District	0.0515622
Sanilac ISD - District created f	0		Verona Township S/D #1F	0.0500129
St. Clair County RESA - District	0		Mount Clemens Community School D	0.049348
West Shore Educational Service D	0		Waldron Area Schools	0.0492695
East Grand Rapids Public Schools	0.0002106		East Detroit Public Schools	0.0489211
Forest Hills Public Schools	0.0003276		Carney-Nadeau Public Schools	0.0477004
Caledonia Community Schools	0.000501		Ecorse Public Schools	0.0473695
Ida Public School District	0.0005922		Mason County Central Schools	0.0460346
Rockford Public Schools	0.0007086		East Jackson Community Schools	0.0459338
Bloomfield Hills Schools	0.0007737		Stanton Township Public Schools	0.0456461
Northview Public Schools	0.000792		River Rouge, School District of	0.0454181
Nottawa Community School	0.0008013		Litchfield Community Schools	0.04403
Zeeland Public Schools	0.0009188		Madison District Public Schools	0.0439859
Rochester Community School Distr	0.0010444		Albion Public Schools	0.0433691
West Ottawa Public School Distri	0.0010609		Sigel Township S/D #4F	0.0424936
Oakridge Public Schools	0.0010834		Pittsford Area Schools	0.0410968
Northville Public Schools	0.0010964		Madison School District (Lenawee	0.0407942

Kentwood Public Schools	0.0011102		Hillsdale Community Schools	0.0398638
School District of the City of B	0.0011379		Camden-Frontier School	0.0394626
Troy School District	0.0011626		Clintondale Community Schools	0.0393992
Byron Center Public Schools	0.0013038		Buena Vista School District	0.0390851
Grosse Ile Township Schools	0.001312		School District of Ypsilanti	0.0388958
Holland City School District	0.0013193		Ithaca Public Schools	0.0383295
Grand Rapids Public Schools	0.0013519		Glenn Public School District	0.038086
Coopersville Area Public School	0.0013962		Tekonsha Community Schools	0.0380133
Dexter Community School District	0.0013981		Oak Park, School District of the	0.0379928
Bedford Public Schools	0.0015203		River Valley School District	0.0378148
Novi Community School District	0.001539		Pennfield Schools	0.0376898
Monroe Public Schools	0.0015905		Michigan Center School District	0.0374102
Mackinac Island Public Schools	0.0016026		Highland Park City Schools	0.0373719
Chelsea School District	0.0016031		Kaleva Norman Dickson School Dis	0.0370596
Godfrey-Lee Public Schools	0.001696		Van Dyke Public Schools	0.0369943
Dickinson-Iron ISD - District cr	0.0017007		Cheb-Otsego-Presque Isle ESD - D	0.0367884
Kenowa Hills Public Schools	0.00171		Bellevue Community Schools	0.0365133
Allendale Public Schools	0.0017233		Westwood Community School Distri	0.034731
Summerfield Schools	0.0018225		Ashley Community Schools	0.0345285
Portland Public Schools	0.0018271		Baldwin Community Schools	0.0345259
Charlevoix Public Schools	0.0018657		Elk Rapids Schools	0.0344416
Grosse Pointe Public Schools	0.0018693		Powell Township Schools	0.0342955
Reeths-Puffer Schools	0.001918		Martin Public Schools	0.0342876
Clarkston Community School Distr	0.001947		Morrice Area Schools	0.03406
Plymouth-Canton Community School	0.0019801		Jonesville Community Schools	0.0330593
Farmington Public School Distric	0.0020018		Reading Community Schools	0.0328683
Lake Orion Community Schools	0.0020129		Akron-Fairgrove Schools	0.0327112
Menominee Area Public Schools	0.0020918		Concord Community Schools	0.0326558
Spring Lake Public Schools	0.0021806		Roseville Community Schools	0.0324279
Portage Public Schools	0.0022		Vandercook Lake Public Schools	0.0321873
Saline Area Schools	0.0022719		South Lake Schools	0.0318487
Kelloggsville Public Schools	0.0022796		Watervliet School District	0.0315064
Alpena Public Schools	0.0022954		Saginaw, School District of the	0.0313007
Whiteford Agricultural School Di	0.0023814		Sigel Township S/D #6	0.03125
Harbor Springs School District	0.0023982		Arenac Eastern School District	0.0311683
Trenton Public Schools	0.0024202		Caseville Public Schools	0.0309582
Flushing Community Schools	0.0024741		Calhoun ISD - District created f	0.0307025
Kent City Community Schools	0.0024803		Mason County Eastern Schools	0.0306627
Grandville Public Schools	0.0025205		Alba Public Schools	0.0305725
Ann Arbor Public Schools	0.0025613		Addison Community Schools	0.0304298
Sparta Area Schools	0.0025876		Huron ISD - District created fro	0.030042
Grand Blanc Community Schools	0.0025883		Benton Harbor Area Schools	0.0296801
Orchard View Schools	0.0026003		Kingston Community School Distri	0.0295173
Bendle Public Schools	0.0026641		Deerfield Public Schools	0.0293734

Kalamazoo Public Schools	0.0026757		Adrian, School District of the C	0.0291992
Mona Shores Public School Distri	0.0026829		Onekama Consolidated Schools	0.0288534
Grant Public School District	0.0026959		Chassell Township School Distric	0.0287887
Ionia Public Schools	0.0027327		Covert Public Schools	0.0287607
Public Schools of Petoskey	0.0028006		Eau Claire Public Schools	0.0287478
Walled Lake Consolidated Schools	0.0028117		Lenawee ISD - District created f	0.0287018
Wyoming Public Schools	0.002816		Coloma Community Schools	0.0285753
Boyne City Public Schools	0.0028364		Wayne RESA - District created fr	0.0285714
Shiawassee Regional ESD - Distri	0.0028409		Suttons Bay Public Schools	0.0283842
Dearborn City School District	0.0028415		Napoleon Community Schools	0.0283193
Centreville Public Schools	0.0028828		Britton Deerfield Schools	0.0281202
Dundee Community Schools	0.0029815		Owendale-Gagetown Area School Di	0.0280282
Davison Community Schools	0.0030338		Mayville Community School Distri	0.0279674
Livonia Public Schools School Di	0.0031051		Hudson Area Schools	0.0278634
Whitehall District Schools	0.0031438		Elm River Township School Distri	0.0277778
Saranac Community Schools	0.0031569		Vestaburg Community Schools	0.0275943
St. Johns Public Schools	0.0031698		St. Louis Public Schools	0.0272961
Sturgis Public Schools	0.0031724		Lewis Cass ISD - District create	0.0270367
South Lyon Community Schools	0.0032992		Corunna Public Schools	0.0270328
DeWitt Public Schools	0.0032996		Bridgeport-Spaulding Community S	0.0269869
Jefferson Schools (Monroe)	0.0033048		Athens Area Schools	0.0268383
Clio Area School District	0.003388		Saginaw ISD - District created f	0.0267022
Fremont Public School District	0.0034105		Carsonville-Port Sanilac School	0.0264459
Belding Area School District	0.0035077		Homer Community School District	0.0261253
Hudsonville Public School Distri	0.0036278		Ellsworth Community School	0.0261226
Avondale School District	0.0036971		Brandywine Community Schools	0.0258776
Kalamazoo RESA - District create	0.0037409		Hanover-Horton School District	0.0258545
Grand Haven Area Public Schools	0.0037586		Mid Peninsula School District	0.025787
Bentley Community School Distric	0.0037667		Webberville Community Schools	0.0257721
Coldwater Community Schools	0.0038676		Vassar Public Schools	0.0255718
Colfax Township S/D #1F	0.0039063		Fitzgerald Public Schools	0.0254491
North Muskegon Public Schools	0.0039914		Pentwater Public School District	0.0253597
Macomb ISD - District created fr	0.0040754		Berrien RESA - District created	0.0252403
West Bloomfield School District	0.0041482		Buchanan Community Schools	0.0251859
Beecher Community School Distric	0.0042361		Ionia Township S/D #2	0.025
Branch ISD - District created fr	0.0045417		Mecosta-Osceola ISD - District c	0.0247044
Huron Valley Schools	0.0045512		Rapid River Public Schools	0.0242996
Berkley School District	0.0045864		Hale Area Schools	0.0242859
St. Joseph County ISD - District	0.0046296		Total	0.0433109
Total	0.0018692			