The Education Policy Center
AT MICHIGAN STATE UNIVERSITY

WORKING PAPER #53

Who Are the Homeless? Student Mobility and Achievement in Michigan 2010-2013

Joshua Cowen
Michigan State University

May 2016

Who Are the Homeless? Student Mobility and Achievement in Michigan 2010-2013

Author Information

Joshua Cowen
Michigan State University

Acknowledgements

Corresponding author: jcowen@msu.edu; funding for this project provided in part by the Walton Family Foundation for a larger project on public school choice and mobility in Michigan. I am grateful for the assistance with data access and data questions provided by the Michigan Department of Education, in particular Erika Bolig and and Melissa Bisson at the Michigan Center for Educational Performance and Information. Interpretation and errors are mine alone.

Abstract

I provide a new, systematic profile of more than 18,000 homeless students in Michigan, utilizing rich administrative data from all test-taking students in grades 3-9 during the 2010-11, 2011-12 and 2012-13 school years. These data are part of a larger study of school choice and student mobility in that state. Homelessness is a condition found disproportionately away from suburban school districts. African American and Hispanic students are more frequently homeless and homeless students are almost universally impoverished. They are far more mobile between districts and zip codes than their non-homeless peers and are more likely to participate in inter-district school choice and charter schools. Finally, homeless students score far lower on state math and reading tests.

Who Are the Homeless?
Student Mobility and Achievement in Michigan 2010-2013

Joshua M. Cowen, Ph.D.+
Associate Professor of Education Policy
College of Education
Michigan State University
jcowen@msu.edu
517-355-2215

MAY 2016

Abstract

I provide a new, systematic profile of more than 18,000 homeless students in Michigan, utilizing rich administrative data from all test-taking students in grades 3-9 during the 2010-11, 2011-12 and 2012-13 school years. These data are part of a larger study of school choice and student mobility in that state. Homelessness is a condition found disproportionately away from suburban school districts. African American and Hispanic students are more frequently homeless and homeless students are almost universally impoverished. They are far more mobile between districts and zip codes than their non-homeless peers and are more likely to participate in inter-district school choice and charter schools. Finally, homeless students score far lower on state math and reading tests.

Correspondence: jcowen@msu.edu; funding for this project provided in part by the Walton Family Foundation for a larger project on public school choice and mobility in Michigan. I am grateful for the assistance with data access and data questions provided by the Michigan Department of Education, in particular Erika Bolig and and Melissa Bisson at the Michigan Center for Educational Performance and Information. Interpretation and errors are mine alone.

Introduction

The research community is devoting heightened attention to the ways in which the lives of American children are shaped and developed by their immediate residential surroundings. Local conditions determined at once by historical trends, static and changing peer groups, the degree of social cohesion and shared economic experiences may combine to determine the extent to which parents have ready access to high-quality child care, heath or dental care, safe playgrounds and other areas for recreation, the prevalence of crime and even environmental quality. These in turn directly impact health and other childhood outcomes (e.g., Brooks-Gunn et al. 1996; Cook, et al, 2002; Sampson, Morenoff, and Gannon-Rowley 2002; Galster 2012). Neighborhood and residential conditions also affect the education of children. There is evidence that neighborhoods influence the eventual attainment levels of students living within them (Owens 2010; Wodkte, Harding and Elwert 2011), and may even contribute to test-score differences apart from the contributions that schools make to student learning (Carlson and Cowen 2015). So strong, therefore, is the potential of our immediate geographic experience to influence the course of our lives that neighborhood effects can linger into the lives of our own children as well (Chetty, Friedman and Rockoff 2014; Chetty and Hendren 2015).

Notwithstanding this renewed appreciation for the importance of children's residential conditions to their future opportunity, a particular set of conditions remains under-examined, especially by analysts focused more broadly on the link between poverty and educational disadvantage. The plight of children who are homeless, or lack safe and reliable housing on a regular basis, is largely absent from recent studies of achievement and attainment gaps, for example, or school choice policies designed to provide access to traditional and alternative schools by breaking the link between student residence and school assignment. Such discussion is also absent from work on school accountability, despite the attention to specific race, language and academic needs-based sub-groups outlined by state and federal policy—the No Child Left Behind Act of 2002 most prominently. There are, to sum, few systematic studies on homeless students in the empirical student mobility literature, in the literatures devoted to test score gaps or on school reform found in the economics, sociological or policy analytic traditions.

Thus a relative dearth of systematic evidence informs policy toward the nearly 1.2 million homeless students in American public schools.[1] The McKinney-Vento Homeless Assistance Act, which became federal law in 1987, most recently re-authorized in 2001, provides financial assistance and guidance for states to serve their populations of homeless students (as well as homeless populations more generally). [2] The law requires states to establish plans targeted specifically toward the education of homeless youth, and to monitor state statues and policies that may further disadvantage these children in school. States are also required to fund grants to local school districts to aid homeless education and to collect and report regular data on homelessness across their public school systems. In practice, one result of such attention is the immediate enrollment of homeless students as needed in local schools, regardless of residential documentation.[3]

---

[1] National Associate for the Education of Homeless Children and Youth
http://www.naehcy.org/sites/default/files/dl/homeless-ed-101.pdf

[2] McKinley-Vento Homeless Education Assistance Improvements Act of 2001.

[3] http://www.michigan.gov/documents/Homeless_Enrollment_45522_7.pdf

A handful of researchers have focused squarely on the educational experiences of homeless children or have provided theoretical frameworks for doing so (Tierney, Gupton and Hallett 2008; Tierney and Hallett 2010). Some of these (e.g. Obradović, et al., 2009; Larsen and Meehan 2011; Fantuzzo, et al., 2012, 2013; Herbers, et al. 2012; Cutili 2013; Miller and Bourgeois 2013) have used large-scale administrative data. From the sum of this empirical work a few general patterns are discernible, though these raise as many questions for educational policy as answers. Homeless children are particularly at risk for health problems and chronic medical conditions (Buckner 2008; Greene et al. 1999; Whitbeck 1999), and to exhibit higher incidence of behavioral problems (Kurtz, Jarvis and Kurtz 1991). Academically, they appear to have lower than average rates of literacy (Thompson, et al. 2003; Herbers, et al. 2012), limited English proficiency and lower math scores (National Center for Homeless Education 2007; Obradović, et al., 2009; Fantuzzo, et al. 2012, 2013; Cutili, et al. 2013) and generally score below grade level on state exams. Homeless children appear to have lower attendance rates (Rafferty and Rollins 1989; Rafferty and Shinn 1991) and be as a result more likely to repeat grades (Rafferty and Shinn 1991). They are, perhaps almost by definition, far more mobile between schools and school districts than their peers (Stronge 2000; Moor 2005; Larsen and Meehan 2011; Fantuzzo, et al. 2012; Miller and Bourgeois 2013). Collectively, although the evidence on student residence and student outcomes has made wide use of large-scale and even population-level sets of data, most of this extant research on homeless children in particular has been confined, except as noted above, to case study and ethnographic approaches.

In this paper, I provide a new, systematic profile of more than 18,000 homeless students in Michigan, utilizing rich administrative data from the universe of test-taking students in grades 3-9 during the 2010-11, 2011-12 and 2012-13 school years. These data are drawn from a larger study of school choice and student mobility in that state, conducted in partnership with the Michigan Department of Education. As such, I am able to examine not only demographic and achievement differences between all homeless and non-homeless students in the testing data, but am able to pay particular attention to differences in residential and school mobility between these populations, including the extent to which homeless students use two different forms of school choice: inter-district open enrollment and charter school enrollment. In summary, these data represent an important opportunity to provide rigorous evidence on the plight of a particularly high-risk population of children.

This evidence indicates widespread disadvantages faced by homeless students on typical demographic, economic and school quality measures. Homelessness is a condition found disproportionately in rural and urban (rather than suburban) school districts. African American and Hispanic students are more likely to be homeless and, perhaps almost by definition, homeless students are overwhelmingly impoverished. Homeless students are, not surprisingly, far more mobile than their non-homeless peers, with nearly 40 percent in any given year living in a new zip code, and 30 percent learning in a new school district. Perhaps as a result homeless students are also somewhat more likely to participate in inter-district school choice, and are actually more likely to enroll in charter schools as well. Finally, homeless students score far below their state, district and school peers on Michigan's math and reading standardized tests, although regression-adjusted comparisons indicate that for individual students there is no particular disadvantage associated with *becoming* homeless in a

given year once district and residential mobility is taken into account. Thus the presence of a homeless indicator in the data may reflect other, disruptive attributes of a student's background overall and over time rather than the onset of a singularly difficult transition to a new condition.

I conclude by noting that the descriptive profile presented here is necessarily a beginning not an end to new attention to homeless schoolchildren in the policy-analytic literature. These new results are important not so much because "homeless youth act in a particular way" but because "to overlook that homelessness impacts youth, often in pernicious and injurious ways, is to ignore the social contexts of their lives and to obscure educational recommendations that might enable them to succeed." (Tierney and Hallett 2012, p. 50) In other words, homelessness is a condition unto itself that requires explicit attention apart from services directed at other at-risk youth on the basis of race, income or parental education. I argue that despite the high-quality body of work already devoted to homeless students, attention to these children by scholars of policies concerning more general areas such as accountability, income and race-based achievement gaps, school choice and school finance is warranted. Perhaps just as importantly, as data access and data quality improve, the cost of making that effort is lower than ever.

Data

The data and analysis for this paper are drawn from a larger project (Cowen, Creed and Keesler 2015) evaluating the state of Michigan's Schools of Choice inter-district open-enrollment program. As the results below indicate, the population of Michigan homeless students represent a particularly mobile group of students, as reflected not only in their disproportionate between-district mobility but also in the use of local and charter school choice programs. As part of the Cowen, Creed and Keelser (2015) evaluation, I 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. These permit the construction of mobility indicators between local schools, districts and zip codes. The data set also provides Michigan Educational Assessment Program (MEAP) test scores for students in grades 3 through 9.[4]

The final three years of data from the choice evaluation project, 2010-11 through to 2012-13, include indicators that classify a student as "homeless" per the state's compliance with McKinney-Vento. Schools are required to offer immediate enrollment to students even if typically required paperwork such as birth certificates, and documents providing residence and immunization records are unavailable. A student's eligibility for McKinney-Vento services is determined by a liaison working with or for each local school district to assess student living circumstances on a case-by-case basis. Under the law, a student who lacks "fixed, regular, and adequate nighttime residence" is considered homeless. This includes students who may be living in hotels/motels, campgrounds, shelters, trailer parks, cars,

[4] Although students in 9th grade sit for the state exam, the exam covers social studies but not math and reading. Ninth grade students are included in the demographic counts for the analyses presented in this paper, but not in the testing results, which include math and reading only.

parks, bus or train stations or generally substandard housing (McKinney-Vento Homeless Education Assistance Improvements Act of 2001 Section 725). According to best practices for such determinations published by the National Center for Homeless Education include guidelines to:

- *Talk with parents and youth about their living situation, focusing on basic questions such as, "Why did you leave your last residence?" or "Where did you sleep last night?" Let them know you are asking questions of a personal nature to determine if they are eligible for additional services. Avoid using the word "homeless" in initial conversations due to the associated stigma; instead, use terminology such as "in a temporary living arrangement".*
- *Share information about McKinney-Vento services, rights, and definitions when a parent or youth cannot provide proof of residency, guardianship, or other documentation, or when they display other possible indicators of homelessness.*
- *Work with parents, youth, and caregivers to determine if they are able to provide any documents that could confirm their living situation. Keep in mind that the McKinney-Vento Act prohibits schools from requiring documents for school enrollment.* (National Center for Homeless Education 2007)

During the 2010-11, 2011-12 and 2012-13 schools years, 18,147 Michigan students in grades 3-9 were indicated as homeless under the legal definition. This translates into 1.8 percent of students in grades 3-9 during these years. Approximately 77.8 percent of student-year homeless observations had a homeless flag for only one of the three years of data available, 18.5 percent were homeless for two years, and less than 4 percent for all three years of data.[5]

Demographic Characteristics

Basic Homeless Demographic, Academic, and Mobility Comparisons

Table 1 indicates that homeless students are disproportionately black (24.3 percent) relative to non-homeless students (17.9 percent); they are also disproportionately Hispanic (11.7 compared to 6 percent) and, correspondingly, disproportionately non-white. Few differences (unreported) exist among the tiny proportion of homeless and non-homeless students who identify as Asian or multi-racial. Not surprisingly, they are almost uniformly poor: 86 participate in free/reduced lunch (and all are eligible), compared to 45 percent of the non-homeless population. They are also more likely to be diagnosed as having special academic needs (16.3 percent compared to 10.5 percent) and are more than twice as likely to be retained from the previous year's grade (although for both groups the retention rates numbers are fairly small). On other background measures, however, homeless and non-homeless students appear more similar. Despite the disproportionate number of Hispanic students among the homeless population, they are not particularly more likely to have limited English proficiency (LEP). Students are also essentially equally distributed across the tested grades of 3-9.

The bottom rows of Table 1 compare both groups on the state's MEAP math and reading exams. All scores are standardized by year, grade and subject, but I report results from standardizing at the school, resident district and the state level. On both measures homeless students score far below the non-homeless population, though the comparison is (slightly) more favorable relative to students' districts and schools. Homeless students are nearly half a

[5] See http://www.michigan.gov/documents/Homeless_Enrollment_45522_7.pdf http://www.michigan.gov/documents/mde/Challenging_MV_Determinations_2015_502359_7.pdf for more information on specific Michigan policies toward homeless students.

standard deviation behind their non-homeless counterparts across the state, and just under one-third of a standard deviation behind their non-homeless counterparts at the district and school levels. For further illustration, Figures 1 and 2 provide kernel density estimates of state-standardized math and reading scores, de-meaned by school. These indicate that relative to statewide averages, even net of school fixed effects, homeless students are scoring well behind their peers in the same year, grade and subject. I explore these differences further below.

Among the requirements of McKinney-Vento is that districts must allow students who become homeless (or who they determine to be homeless) who are already enrolled in a given school to remain in that school as long as their parent or guardian chooses. This implies particular attention to student mobility among an already potentially transient population. Table 2 provides a first cut at homeless student mobility, in two different ways. The first set of rows simply reports the rates of students in a new school (within the same district), new district, or new zip code relative to the year before. Perhaps the least surprising result across any of the tables in this paper is that students are highly mobile between residential zip codes. Nearly 4 in 10 homeless students are in a different zip code at time *t* than the year before, compared to only 10 percent of non-homeless students. Table 2 also indicates that homeless students are somewhat less likely to be in a new school within the same district as in the previous year, they are more than three times more likely (27.6 compared to 8.9 percent) to be in a different district. This is consistent not only with the higher mobility rates reported in earlier studies, but also with the guidelines outlined in McKinney-Vento best practices discussed above. Upon recognizing and classifying (their newly arriving) students as homeless, districts are encouraged to keep their students in the same school if possible to minimize any additional instability. As a result, it is unsurprising to see that homeless students are highly mobile between but not necessarily within districts.

The bottom rows of Table 2 also provide a second set of mobility measures. The bottom set of rows indicates homeless student participation in each of Michigan's two general public choice programs, between-district local open enrollment, and the charter school sector.[6] Homeless students are somewhat more likely to be in charter schools (nearly 11 percent) than non-homeless students (7.8) percent. This difference is slightly more narrow between students participating in Schools of Choice or other non-resident inter-district student enrollment programs: 12 percent compared to 9.6 percent (this is consistent with evidence I obtained in my broader Schools of Choice evaluation, which found economically disadvantaged students overall more likely to participate in that program, see AUTHOR 2015). It is possible that one these two sets of programs—the charter sector and open enrollment—more broadly provide a certain degree of stability for homeless students, and may appeal to a parent who anticipates or has experienced regular housing changes. It is also possible that local exchanges of students are one mechanism that districts employ to meet their McKinney-Vento obligations. Still, the homeless-non-homeless differences in

[6] In addition participating in the state's open enrollment program, Schools of Choice, according to their own rules and procedures individual districts may also partner with nearby districts for their own exchange of students. Although most non-resident public school students transfer under Schools of Choice, for some students these local agreements dictate transfer policy in addition to or apart from Schools of Choice (see AUTHOR 2015 for more details)

participation within these choice systems are nowhere near as stark as those associated with between year district or zip code mobility.

Schools Attended by Homeless Students

Although the focus of this particular paper are the differences between homeless and non-homeless students themselves rather than a difference in the overall schooling environment, I provide in Table 3 a summary of the same student-level demographic information reported in Table 1 aggregated to the school-level. These data provide a simple comparison of the differences between schools attended by homeless and non-homeless children. These patterns largely track with the student-level results above, but are worth stating explicitly here: students homeless students tend to be located in schools with slightly higher proportions of Hispanic and African American students. They attend schools that are more heavily low income, as measured by free/reduced lunch participation, but there are few differences in the share of LEP or special needs students. Perhaps surprisingly, homeless students in Michigan are disproportionately located in rural schools: 34.5 percent of homeless compared to 23.9 percent of non-homeless students in rural schools. This difference almost entirely explains the relative lack of students attending schools in Michigan suburbs.

On average, homeless students attend schools that are far below the statewide means in math and reading. Homeless students are in schools that approach one fifth of a standard deviation below the statewide mean math level, and 0.15 standard deviations below the statewide reading average. On these academic measures, at least, the schooling environment experienced by homeless students is itself one of relative disadvantage apart from any particular child-specific attributes that each student brings into his or her classroom. On the other hand, when school-level averages are standardized at the district level, this disadvantage shrinks, though it does not disappear entirely. Homeless students are attending schools that are well below statewide averages, but are more comparable to those in their particular school districts.

Multivariate Adjustments

On the one hand, the data in Tables 1-3 provide an unambiguous picture of Michigan's homeless student population. Little insight is needed to recognize that these students are disproportionately disadvantaged on a host of demographic and achievement measures. From a policy perspective, however, I am interested in the particular disadvantage faced by homeless students apart from their tendency to be members of other disadvantaged groups. As I note in the introduction—and other scholars have stressed (Tierney and Hallett 2012)—homelessness is a problem that requires a separate focus of attention apart from educational policies that may be directed toward other, broader groups of students classified on the basis of race, income, or academic ability.

Accordingly, it is helpful to consider the relationship between the condition of homelessness and student outcomes net of other characteristics. To do so, I estimate two basic models:

$$(1) \qquad Y_{it} = \beta_0 + \beta_1 homeless + \beta_2 X_i + \beta_3 M_{it} + \beta_4 S_j + \beta_5 Y_{ij,t-1} + \varepsilon_{ijt}$$

Where *Y* are state-standardized (by grade and year) math or reading scores for student *i* at time *t*. I focus on scores relative to the statewide grade/year means due to the high rates of year-to-year mobility noted above. In Equation 1, β_1 is the difference in achievement associated with homelessness, net of the partial impacts of *X,* a vector of student demographics, and *M*, a vector of mobility indicators and *S* a vector of school sector, and locale indicators. The model includes an indicator for grade level (which I collapse to be elementary relative to junior high grades) and a stochastic error term ε which I cluster at the school-level. Because I also include for Y_{it-1}, student *i's* outcome in the previous time period, Equation 1 becomes a model of student growth between the two years. I estimate the model with and without *M* to consider any differences in homeless student achievement apart from any differences that may be driven by higher rates of mobility.

I follow this approach by estimating a similar model but with a student fixed effect, γ_i, included:

$$(2)\ Y_{it} = \beta_0 + \beta_1 homeless + \beta_2 X_i + \beta_3 M_{it} + \beta_4 S_j + \gamma_i + \varepsilon_{ijt}$$

I estimate Equation 2 in two ways. First by maintaining the definition of Y_{it} as the student achievement level at time *t*, and the other by subtracting the lagged score at *t-1* from that level at *t*. The subtraction of a lagged dependent variable from both sides of the equation assumes a value of 1 on the implied coefficient of that variable, and without this assumption fixed effects estimates are inconsistent. It is not, however, uncommon in the econometric literature to assume a value of 1 and include this resulting gain score on the left-hand side of the model. The two fixed effects approaches, levels and gains, serve as bounds for the true difference in achievement associated with homelessness (see Imberman 2011). Note, however, that the inclusion of the fixed effect changes my interpretation of β_1 from the difference in achievement between homeless and non-homeless students at time *t* to the difference associated with becoming classified as homeless at time *t*. Taken with the estimates of Equation 1, these different specifications of Equation 2 provide a useful gauge not only of cross-sectional differences between homeless and non-homeless students (Equation1) but of a change to a homeless condition experienced by an individual student *i* his or herself.

Table 4 provides results from estimating Equation 1. Adjusted for student race, gender, and other demographics, there remains a significantly negative difference between homeless and non-homeless students in both reading and math—around 0.04 to 0.05 standard deviations lower than the state average in each subject and grade. These differences also persist after accounting for the separate negative differences between students who are in new districts or zip codes as the year before (recall that homeless students were more likely to be in these new contexts, but not more likely to be in a new school within the same district).

Table 5 provides results from estimating Equation 2. The fixed effects results—which, as I note above, are estimates of the difference associated with *changes* to homeless status, are more ambiguous. On the one hand, the results for math and reading show significantly negative differences after becoming homeless. On the other hand, after controlling for whether the move resulted in a district or zip code mode, the estimates are insignificant. In the latter columns of Table 5, which include gain scores as outcomes instead of math and

reading levels, the homeless/non-homeless differences are smaller for math and essentially zero for reading. Thus the change to homelessness estimates reported in Table 5 are not robust across all specifications. This suggests that other time-specific events associated with mobility and the level of prior achievement may be explaining a further drop in outcomes in the year a student becomes homeless.

All told, these results from Table 4 indicate that homeless students score on average below their non-homeless peers, even after accounting for demographics and the separate consequences of a more mobile educational experience. On the other hand, as Table 5 shows, *becoming* homeless may only reduce test score levels between two years rather than altering achievement trajectories, and these changes are at least partly explained by changes in student residence or district. This indicates that the real disadvantage may be homelessness *per se* relative to non-homeless conditions, not the particular event of becoming homeless itself. It is also possible—perhaps likely—that the presence of a homeless indicator in the data may reflect other, disruptive attributes of a student's background overall and over time rather than the onset of a singularly difficult transition to a new condition in the year I observe. In that sense, homelessness may be a symptom not a cause.

Summary

In this paper I have provided a new picture of the population of homeless students in Michigan. This contribution is based on a rich set of administrative data collected by the state's department of education in compliance with federal law. From that standpoint, perhaps the most important aspect of this paper is simply a new addition of homeless students to the kinds of analyses—and subsequent policy-oriented discussion—conducted on similar large-scale data panels by researchers across the country. For all of the appropriate attention devoted in these analyses to the outcomes of students such as those with special academic needs, those learning English as a second language, those who are low-income or those who are members of historically disadvantaged racial or ethnic minorities, recognizing that homeless students are disproportionately drawn from several of these groups and bear their own unique risks as well is necessary for a full understanding of poverty and hardship born by some American schoolchildren. The fact that homeless students represent so tiny a fraction of all students—approximately 2 percent in Michigan, far less than ELL, free lunch, special needs or minority students overall—may help explain the relative paucity of large-scale data analyses on their circumstances. But the fact that 2 percent translates into more than 18,000 individual school children in these data, each no further than their 9th grade of education, and each with their own challenges to face, should be enough to warrant new attention, especially in states where the problem of housing insecurity is even more severe.

From this first picture a few clear patterns emerge. Homeless students are more heavily concentrated among minority populations, they are (by definition) low-income and they are achieving well below their peers on statewide exams even relative to others in their own school buildings and are more than twice as likely to be retained in grade. They are far more mobile than other students, not surprisingly, both between zip codes (my proxy for residential location) and between districts. This mobility helps to but does not fully explain achievement differences. In regression-adjusted comparisons, the particular academic disadvantaged persists even after controlling for other demographics and for mobility. The

estimates of β_1 across all models—and especially those from Equation 1—are not strictly causal in the sense understood by policy analysts, statisticians or econometricians. They may represent differences associated with a number of conditions broadly experienced by students along with or as part of their homelessness (but net of the relationships explicitly included in the model). Given the state of the literature, I do not interpret this as a limitation but as an indicator for where new research must lead.

Moreover, from a policy perspective, a fully identified version of β_1 may in some sense be over-controlled. The qualitative work I discuss above illuminates an incredibly complicated set of conditions and experiences faced by homeless students. A more sophisticated modeling approach might isolate the causal impact of "being" homeless but may provide a more narrow (in the language of economists, a local) interpretation of that effect. What the estimates of β_1 indicate is that net of the typical characteristics considered by policymakers in their efforts to aid students in poverty, being homeless still separates children from their peers academically even if—as some estimates from Equation 2 indicate—becoming labeled as homeless itself may not differentiate a student's outcomes in a particular year from his or her average.

Clearly there remains much more to learn. There is no shortage of critics of federal education policy for myriad reasons, but without McKinney-Vento and the accompanying funds and guidelines focusing particularly on the plight of homeless children, large-scale data like those summarized here and in a small number of other studies (e.g. Obradović, et al., 2009; Larsen and Meehan 2011; Fantuzzo, et al., 2012, 2013; Herbers, et al. 2012; Cutili 2013; Miller and Bourgeois 2013) may not have been available. This implies that more analyses can and should be done in states across the country. From this work we might make the sort of inferences now common for other children in particular situations of risk: how peer effects operate in classrooms with homeless children, whether homeless children are more likely to be served by less experienced teachers more prone to turnover, as other disadvantaged students appear to be even within the same school (e.g. Lankford et al. 2002; Feng 2010; Bastian, Thomas and Henry 2013), or whether marginal changes in financial (federal, state or local) resources intended for homeless education mitigate effects on their likelihood of moving again and/or on their student outcomes. For that matter, other measures of outcomes currently unavailable in the data I discuss here are readily available to my own future work and that of others: yearly school attendance, high school completion, and an accurate measure of post-secondary enrollment most obvious among these. Most of all, careful attention to these students over the duration of their academic careers and beyond is warranted. How likely is it that once-homeless students become homeless again? Is residential instability a condition that persists throughout the childhoods of most students who become identified at a given point as homeless? Does placement in foster care, or other not explicitly school-related support like housing vouchers or rent or food assistance at all alleviate the classroom consequences of temporary homelessness that occur? What other policies not yet in place can the results of richer analyses than this one suggest?

Where we live matters. In his celebrated new ethnography on families routinely facing the prospect of homelessness, the sociologist Matthew Desmond writes that "residential stability begets a kind of psychological stability, which allows people to invest in their home and social relationships. It begets school stability, which increases the chances that children will

excel and graduate" (Desmond 2016). "America," he notes "is supposed to be a place where you can better yourself, your family, and your community. But this is only possible if you have a stable home." Desmond's work and that of the other scholars I have noted who have focused explicitly on homelessness documents individual stories and cases that portray the at times inhumane and always tragic conditions of lives in a cycle of housing insecurity. But if these studies take our understanding of those conditions to new depths, the breadth of the problem—its scope across communities and, as I have tried to begin to show here, across schools and school districts—requires the sort of wide-angle lens that only population-level data can provide. Policy analysts need not move into urban trailer parks, as Desmond did, nor decamp to city streets as others have to document the particular problems facing homeless children in public school systems. We are studying many of these children already, and other policies designed to improve their academic welfare from a situation caused by historical, social or economic hardships. But we still know so little, beyond what I expect is the almost intuitive or obvious—perhaps too obvious—notion that a child who leaves her school each day for an uncertain or insecure domesticity is almost certainly suffering through a condition unknown to classmates heading for warm homes and full kitchen tables and quiet, dry and restful bedrooms. If we cannot measure that experience in papers like this, we can still measure a handful of the readily observed results.

It is the very least we might do.

REFERENCES

Bastian, K. C., Henry, G. T., & Thompson, C. L. (2013). Incorporating Access to More Effective Teachers into Assessments of Educational Resource Equity. *Education Finance and Policy, 8*(4), 560-580.

Brooks- Gunn, J., Klebanov, P. K., & Duncan, G. J. (1996). Ethnic differences in children's intelligence test scores: Role of economic deprivation, home environment, and maternal characteristics. *Child Development*, 67, 396-408

Buckner, J. C. (2008). Understanding the impact of homelessness on children challenges and future research directions. *American Behavioral Scientist*, *51*(6), 721-736.

Carlson, D. E. and J. M. Cowen. (2015). "Student Neighborhoods, Schools and Test Score Growth: Evidence From Milwaukee Wisconsin" *Sociology of Education* 88(1): 38-55

Chetty, R. and N. Hendren. (2015) "The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effecs and County-Level Estimates" Harvard University Working Paper
http://scholar.harvard.edu/files/hendren/files/nbhds_paper.pdf?m=1430722623 Accessed 3/7/16

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). "Where is the land of opportunity? The geography of intergenerational mobility in the United States (No. w19843)" National Bureau of Economic Research.

Cowen, J.M., B. Creed & V. Keesler. (2015) "Dynamic Participation in Inter-disrict Open Enrollment: Evidence from Michigan 2005-2013" Working Paper #49, Michigan State University Education Policy Center http://education.msu.edu/epc/library/papers/WP-49-Dynamic-Participation-in-Open-Enrollment-Cowen.asp

Cook, T. D., Herman, M. R., Phillips, M., & Settersten Jr, R. A. (2002). Some ways in which neighborhoods, nuclear families, friendship groups, and schools jointly affect changes in early adolescent development. *Child development*, 73, 1283-1309

Cutuli, J. J., Desjardins, C. D., Herbers, J. E., Long, J. D., Heistad, D., Chan, C. K., ... & Masten, A. S. (2013). Academic achievement trajectories of homeless and highly mobile students: Resilience in the context of chronic and acute risk. *Child Development*, *84*(3), 841-857.

Fantuzzo, J. W., LeBoeuf, W. A., Chen, C. C., Rouse, H. L., & Culhane, D. P. (2012). The unique and combined effects of homelessness and school mobility on the educational outcomes of young children. *Educational Researcher*, *41*(9), 393-402.

Fantuzzo, J., LeBoeuf, W., Brumley, B., & Perlman, S. (2013). A population-based inquiry of homeless episode characteristics and early educational well-being. *Children and youth services review*, *35*(6), 966-972.

Feng, L. (2010). Hire Today, Gone Tomorrow: New Teacher Classroom Assignments and Teacher Mobility . *Education Finance and Policy, 5*(3), 278-316.

Galster, G. (2012). The Mechanism(s) of Neighbourhood Effects: Theory, Evidence, and Policy Implications. In van Ham, Manley, Bailey, Simpson, and Maclennan, (Eds.) *Neighbourhood Effects Research: New Perspectives* (Pp. 23-56), Dordrecht, NL: Springer

Greene, J. M., Ennett, S. T., & Ringwalt, C. L. (1999). Prevalence and correlates of survival sex among runaway and homeless youth. *American journal of public health*, *89*(9), 1406-1409.

Herbers, J. E., Cutuli, J. J., Supkoff, L. M., Heistad, D., Chan, C. K., Hinz, E., & Masten, A. S. (2012). Early reading skills and academic achievement trajectories of students facing poverty, homelessness, and high residential mobility. *Educational Researcher*, *41*(9), 366-374.

Imberman, S. A. (2011). Achievement and behavior in charter schools: Drawing a more complete picture. *The Review of Economics and Statistics*, *93*(2), 416-435

Kurtz, P. D., Jarvis, S. V., & Kurtz, G. L. (1991). Problems of homeless youths: Empirical findings and human services issues. *Social work*, *36*(4), 309-314.

Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational evaluation and policy analysis*, *24*(1), 37-62.

Larson, A. M., & Meehan, D. M. (2011). Homeless and highly mobile students: A population-level description of the status of homeless students from three school districts. *Journal of Children and Poverty*, *17*(2), 187-205.

Mawhinney-Rhoads, L., & Stahler, G. (2006). Educational Policy and Reform for Homeless Students An Overview. *Education and Urban Society*, *38*(3), 288-306.

Miller, P. M., & Bourgeois, A. K. (2013). Considering the geographic dispersion of homeless and highly mobile students and families. *Educational Researcher*, *42*(4), 242-249.

National Center for Homeless Education (2007) Best Practices in Homeless Education: Confirming Eligibility for McKinney-Vento Services: Dos and Don'ts for School Districts http://www.michigan.gov/documents/mde/Confirming_Eligibility_for_M-V_Services_-_District_Dos__Donts_311293_7.pdf Accesses 3/13/2016

Obradović, J., Long, J. D., Cutuli, J. J., Chan, C. K., Hinz, E., Heistad, D., & Masten, A. S. (2009). Academic achievement of homeless and highly mobile children in an urban school district: Longitudinal evidence on risk, growth, and resilience. *Development and psychopathology*, *21*(02), 493-518.

Rafferty, Y., & Shinn, M. (1991). The impact of homelessness on children.*American Psychologist*, *46*(11), 1170.

Reed-Victor, E., & Stronge, J. H. (1997). Building resiliency: Constructive directions for homeless education. *Journal of Children and Poverty*, *3*(1), 67-91.

Sampson, R.J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "neighborhood effects": Social processes and new directions in research, *Annual review of sociology*, 28, 443-478

Sharkey, P., & Elwert, F. (2011). The Legacy of Disadvantage: Multigenerational Neighborhood Effects on Cognitive Ability. *American Journal of Sociology,* 116, 1934-1981.

Stronge, J. H. (1993). Emerging service delivery models for educating homeless children and youth: Implications for policy and practice.*Educational Policy*, *7*(4), 447-465.

Stronge, J. H., & Reed-Victor, E. (2000). *Educating Homeless Students: Promising Practices*. Eye on Education, 6 Depot Way, Suite 106, Larchmont, NY 10538.

Thompson, S. J., Maguin, E., & Pollio, D. E. (2003). National and regional differences among runaway youth using federally-funded crisis services.*Journal of Social Service Research*, *30*(1), 1-17.

Tierney, W. G., Gupton, J. T., & Hallett, R. E. (2008). Transitions to Adulthood for Homeless Adolescents: Education and Public Policy. *Center for Higher Education Policy Analysis, University of Southern California*.

Tierney, W. G., & Hallett, R. E. (2010). Writing on the margins from the center: Homeless youth+ politics at the borders. *Cultural Studies↔ Critical Methodologies*.

Tierney, W. G., & Hallett, R. E. (2012). Homeless youth and educational policy: A case study of urban youth in a metropolitan area. *Living on the Boundaries: Urban Marginality in National and International Contexts (Advances in Education in Diverse Communities: Research, Policy and Praxis, Volume 8), Emerald Group Publishing Limited*, 49-78.

Utresky, M.C. & Stone, S. (2016) Factors Associated with High School Exit Exam Outcomes among Homeless High School Students *Children & Schools* 38: 91-98

Whitbeck, L. B., Hoyt, D. R., & Ackley, K. A. (1997). Families of homeless and runaway adolescents: A comparison of parent/caretaker and adolescent perspectives on parenting, family violence, and adolescent conduct. *Child Abuse & Neglect*, *21*(6), 517-528.

Wodtke, G. T., Harding, D. J., & Elwert, F. (2011). Neighborhood effects in temporal perspective the impact of long-term exposure to concentrated disadvantage on high school graduation. *American Sociological Review*, 76, 713-736.

TABLES AND FIGURES

Table 1 Characteristics of Homeless and Non-Homeless Students 2010-11 to 2012-13

	Homeless	Non-Homeless
Hispanic	11.69	6.01
African American	24.31	17.78
White	61.51	72.20
Female	50.26	49.22
Free/Reduced Lunch	86.43	45.25
LEP	4.16	3.76
Special Needs	16.31	10.47
Ever Retained in Grade	4.02	1.73
Grade 3-5	46.50	42.28
Grade 6-8	40.99	42.80
Grade 9	12.33	14.84
Math (state stand.)	-0.46	0.01
Reading (state stand.)	-0.42	0.01
Math (district stand.)	-0.34	0.01
Reading (district stand.)	-0.31	0.01
Math (school stand.)	-0.31	0.01
Reading (school stand.)	-0.29	0.01

Source: Michigan Department of Education Note: Grades reported are from Michigan MEAP testing data, which serves students in grades 3-9, although small numbers of students in 10th and 11th grade sat for the exam as well. All descriptive statistics include the population of test-taker student-year records; results of significance tests unreported. All cells except test scores are percentages.

Table 2: Homeless and Non-Homeless Student Mobility 2010-11 to 2012-13

Student at time *t* in:	Homeless	Non-Homeless
New School Same District	24.68	31.26
New District	27.60	8.91
New Zip Code	39.17	10.15
Local choice school	11.98	9.59
PSA (charter school)	10.70	7.81

Source: Michigan Department of Education; All descriptive statistics include the population of test-taker student-year records; results of significance tests unreported. All cells are percentages. New school, district and zip code indicators constructed by comparing school, district and zip code at year *t* to the same data in year *t-1*.

Table 3: Characteristics of Schools Attended by Homeless and Non-Homeless Students 2010-11 to 2012-13

	Homeless	Non-Homeless
%Hispanic	9.53	6.11
%African American	19.21	18.00
%White	68.84	71.88
%Female	48.42	48.71
%Free/Reduced Lunch	56.54	45.30
%LEP	4.11	4.00
%Special Needs	13.34	12.11
%Urban	25.08	23.72
%Rural	34.46	23.89
%Suburb	40.46	52.38
Mean Math (state stand.)	-0.18	-0.00
Mean Reading (state stand.)	-0.15	-0.00
Mean Math (district stand.)	-0.02	0.01
Mean Reading (district stand.)	-0.02	0.01

Source: Michigan Department of Education; All descriptive statistics include the population of test-taker student-year records; results of significance tests unreported.

Table 4: Regression-Adjusted Achievement Differences Between Homeless and Non-Homeless Students 2010-11 to 2012-13

	(1)	(2)	(3)	(4)
VARIABLES	**Math**	**Math**	**Reading**	**Reading**
Homeless at *t*	-0.068***	-0.053***	-0.072***	-0.057***
	(0.007)	(0.007)	(0.007)	(0.007)
African American	-0.163***	-0.157***	-0.199***	-0.192***
	(0.007)	(0.007)	(0.007)	(0.007)
Hispanic	-0.060***	-0.059***	-0.047***	-0.046***
	(0.005)	(0.005)	(0.004)	(0.004)
Female	-0.003**	-0.003***	0.061***	0.061***
	(0.001)	(0.001)	(0.001)	(0.001)
Free/Reduced Lunch	-0.126***	-0.124***	-0.144***	-0.142***
	(0.003)	(0.003)	(0.003)	(0.003)
LEP	-0.050***	-0.053***	-0.177***	-0.180***
	(0.008)	(0.008)	(0.008)	(0.008)
Special Needs	-0.173***	-0.174***	-0.276***	-0.276***
	(0.003)	(0.003)	(0.003)	(0.003)
Elementary	0.002	0.002	0.004	0.004
	(0.006)	(0.006)	(0.004)	(0.004)
In Charter Schools	0.034***	0.039***	0.026***	0.031***
	(0.010)	(0.010)	(0.009)	(0.009)
Urban	0.008	0.008	0.004	0.004
	(0.010)	(0.010)	(0.008)	(0.008)
Rural	-0.021***	-0.021***	-0.024***	-0.024***
	(0.007)	(0.007)	(0.005)	(0.005)
New District (t)		-0.052***		-0.052***
		(0.004)		(0.005)
New Zip Code (t)		-0.027***		-0.027***
		(0.003)		(0.003)
Math (t-1)	0.762***	0.760***		
	(0.003)	(0.003)		
Reading (t-1)			0.656***	0.655***
			(0.002)	(0.002)
Constant	0.102***	0.107***	0.098***	0.103***
	(0.006)	(0.006)	(0.004)	(0.004)
Student-year N	979,290	979,048	975,585	975,345
R^2	0.661	0.661	0.536	0.536

***p<0.01 **p<.05 * p<0.10, two-tailed; robust standard errors clustered by school at *t* in parantheses.

Table 5: Student Fixed Effect Achievement Differences 2010-11 to 2012-13

	Y_t				$Y_t - Y_{t-1}$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Math	Math	Reading	Reading	Math	Math	Reading	Reading
Homeless at *t*	-0.021***	-0.007	-0.023***	-0.011	-0.023*	-0.022*	-0.003	-0.005
	(0.006)	(0.007)	(0.007)	(0.010)	(0.013)	(0.013)	(0.017)	(0.017)
Free/Red Lunch	0.016***	0.019***	0.009***	0.010***	0.024***	0.024***	0.013**	0.013**
	(0.003)	(0.004)	(0.003)	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)
LEP	-0.014*	0.012	-0.030***	-0.012	0.060***	0.060***	0.051***	0.051***
	(0.008)	(0.013)	(0.006)	(0.011)	(0.022)	(0.022)	(0.019)	(0.019)
Special Needs	-0.003	-0.003	-0.029***	-0.026***	0.011	0.011	0.013	0.014
	(0.003)	(0.006)	(0.004)	(0.007)	(0.009)	(0.010)	(0.012)	(0.012)
Elementary	0.018***	0.007	0.030***	0.016***	-0.015*	-0.015*	-0.011	-0.011
	(0.005)	(0.006)	(0.003)	(0.004)	(0.009)	(0.009)	(0.007)	(0.007)
In Charter	-0.006	0.012*	-0.012*	0.006	0.040***	0.040***	0.038***	0.037***
	(0.007)	(0.007)	(0.006)	(0.008)	(0.010)	(0.011)	(0.012)	(0.012)
Urban	0.004	-0.015*	0.006	0.001	-0.027*	-0.027*	-0.006	-0.006
	(0.007)	(0.008)	(0.005)	(0.006)	(0.014)	(0.014)	(0.010)	(0.010)
Rural	0.019***	0.015*	0.010**	0.013**	0.018	0.018	0.018*	0.019*
	(0.007)	(0.009)	(0.005)	(0.006)	(0.014)	(0.014)	(0.010)	(0.010)
New District (t)		-0.013***		-0.004		-0.000		0.006
		(0.003)		(0.004)		(0.006)		(0.006)
New Zip (t)		0.000		0.002		-0.003		0.003
		(0.003)		(0.003)		(0.005)		(0.006)
Constant	-0.018***	-0.001	-0.010***	0.002	-0.023***	-0.023***	-0.031***	-0.032***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.007)	(0.007)	(0.006)	(0.006)
Student-year N	1,841,449	981,607	1,834,553	979,079	979,290	979,048	975,585	975,345
R^2	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000

***p<0.01 **p<.05 * p<0.10, two-tailed; robust standard errors clustered by school at *t* in parantheses. Columns 1 and 3 exclude lagged data and result in the addition of 2010-2011 student observations.

Figure 1: Estimated Math Distribution of Homeless and Non-Homeless Students

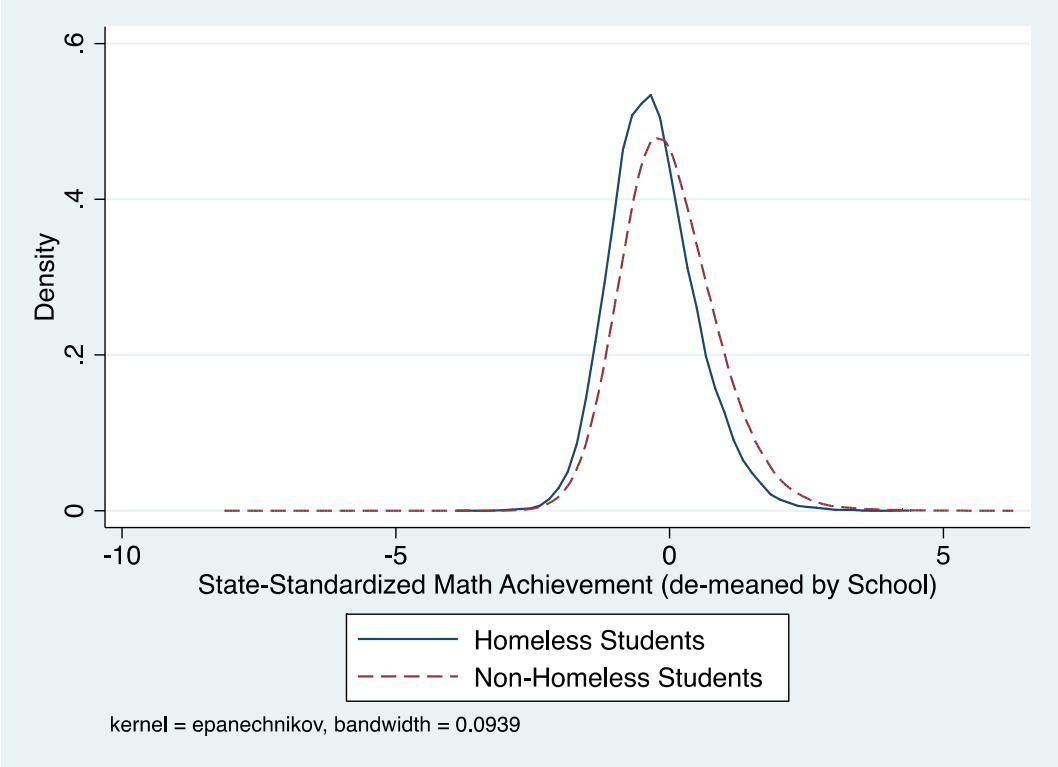

Figure 2: Estimated Reading Distribution of Homeless and Non-Homeless Students