

A Review of the Literature on the Effects of Concentrations of Poverty on School Performance and School Resource Needs

Prepared for
Maryland State Department of Education

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The Maryland General Assembly enacted Chapter 288, Acts of 2002 – the Bridge to Excellence in Public Schools Act, which established new primary state education aid formulas based on adequacy cost studies using the professional judgment and successful schools/districts methods and other education finance analyses that were conducted in 2000 and 2001 under the purview of the Commission on Education Finance, Equity and Excellence. State funding to implement the Bridge to Excellence Act was phased in over six years, reaching full implementation in fiscal year 2008. Chapter 288 required a follow-up study of the adequacy of education funding in the State to be undertaken approximately 10 years after its enactment. The study must include, at a minimum, adequacy cost studies that identify a base funding level for students without special needs and per pupil weights for students with special needs to be applied to the base funding level, and an analysis of the effects of concentrations of poverty on adequacy targets. The adequacy cost study will be based on the Maryland College and Career-Ready Standards (MCCRS) adopted by the State Board of Education and include two years of results from new state assessments aligned with the standards, which are scheduled to be administered beginning in the 2014-2015 school year.

There are several additional components mandated to be included in the study. These components include evaluations of: the impact of school size, the Supplemental Grants program, the use of Free and Reduced Price Meal eligibility as the proxy for identifying economic disadvantage, the federal Community Eligibility Program in Maryland, prekindergarten services and funding, the current wealth calculation, and the impact of increasing and decreasing enrollments on local school systems. The study must also include an update or revision of the Maryland Geographic Cost of Education Index.

APA Consulting, in partnership with Picus, Odden, and Associates, and the Maryland Equity Project at the University of Maryland, will submit a final report to the State no later than October 31, 2016.

This report, required under 3.2.7.1.5 of the Request for Proposals (R00R4402342), is the first of two reports addressing the effects of concentrations of poverty on the research team’s adequacy recommendations. This report provides a review of the relevant literature related to the effects of poverty on both student- and school-level academic outcomes. This report also discusses whether there is evidence to support providing additional per student funding to districts with higher concentrations of poverty. A second report, due in fall 2016, will discuss the research team’s recommendation for whether Maryland’s adequacy funding targets should be adjusted for school districts with high concentrations of poverty.

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Introduction

Over the last 50 years, research in education has repeatedly found that for K-12 students, student socioeconomic statuses and student poverty levels are associated with academic achievement and outcomes. Nearly all of the current research on school composition and student achievement makes reference to the seminal “Coleman Report,” produced for the U.S. Department of Education in 1966. The report, formally titled *Equality of Educational Opportunity*, documents how “the economic composition of a school’s student body has a significant impact on the educational outcomes of individual students, independent of their family backgrounds” (Saporito & Sohoni, 2007, 1228). The Coleman Report’s findings – that a school’s demographics are strongly related to its levels of student achievement – have been consistently supported by research studies conducted in the decades following the report’s publication. (See, for example, Gamoran & Long, 2006). School funding systems in Maryland and other states have historically taken into consideration the relationship between demographics and student achievement. These states use various mechanisms in their school funding systems to provide additional funding for districts and schools serving students from low-income families.

This literature review begins to address one of the questions raised in the Request for Proposals for the State’s adequacy of funding study¹, namely the question of whether adequate funding for education in Maryland requires additional funding for school districts with higher concentrations of poverty. As concentrations of poverty increase in schools and districts, so too do the types and numbers of services required to enable all students to be successful. Most state school funding formulas include a mechanism for providing additional funding for low-income students. However, in nearly all of these funding formulas, including Maryland’s, the funding adjustment is linear, meaning that the amount of additional funding per low-income student remains the same regardless of the concentration of low-income students in a district.

The discussion of linear versus non-linear formulas is essentially a question of whether the cost of educating low-income students increases equally for each additional low-income child in a district or if the cost increases at a greater rate with each additional low-income child because of the specific challenges associated with educating high concentrations of low-income students. Is a linear approach adequate for supporting the additional services necessary for students to be successful in schools with higher concentrations of poverty? Or, do the effects of poverty in schools with higher concentrations of poverty compound so that a non-linear funding approach is required? That is, as the concentration of low-income students in a district increases, does the amount of necessary funding increase for each additional low-income student?

A follow-up report, due along with the adequacy study’s final report in October 2016, will present the research team’s recommendations for 1) whether funding for low-income students should be increased for districts

¹ *Study of the Adequacy of Funding for Education in the State of Maryland*, Maryland State Department of Education, Request for Proposals solicitation number R00R4402342, dated March 7, 2014.

with higher concentrations of poverty, 2) at what poverty concentration level or levels should funding be increased, and 3) if funding is increased for districts with higher concentrations of poverty, what the magnitude of that funding adjustment should be. Two of the approaches the research team is employing to estimate the cost of an adequate education in Maryland, the evidence-based (EB) and professional judgment (PJ) approaches, will include recommendations for additional resources for students in poverty. When either of these approaches is applied, districts with high concentrations of poverty typically receive a significant amount of additional resources. However, in past studies, both of these approaches have assumed that this increase in resources is linear – that is, that each eligible low-income student generates the same additional amount of funding, regardless of whether the concentration of poverty in a district is five percent or 100 percent.

This review of the literature begins with a description of the method used to identify relevant literature. Next, the review presents a brief discussion of how poverty is typically measured. This is followed by a review of the evidence for poverty’s impact on achievement, at both the student-level and the school-level. It discusses the mechanisms through which poverty influences achievement and outcomes. Finally, the review summarizes relevant school finance literature to determine if school finance research supports a non-linear funding mechanism for districts with higher concentrations of poverty.²

Method

Research literature relevant to this review was identified through a general internet search and through a search of academic journal databases (including Academic Search Premier, EBSCOhost/ERIC, and JSTOR). Keywords or phrases used in the searches included *effects of poverty in schools*, *effects of poverty on learning*, *poverty and academic performance*, *concentrations of poverty in schools*, *at-risk students*, and *compensatory education funding*. The criteria for including documents in the review consisted of relevance to the topic, rigor (peer reviewed journals were preferred), and impact on the field (as measured by the number of times cited by other publications). Based on these criteria, 31 items were included in this review.

Measuring Poverty

In a discussion of the effects of poverty, it is important to consider the variations in how poverty can be – and has been – defined and measured. In education research, a student’s qualification for Free and Reduced-Price Meals (called FARMS in Maryland and abbreviated as such through the rest of this report) is frequently used as a proxy for that student’s status as low-income, in poverty, and/or “at risk.” A student’s eligibility for such programs can present a number of challenges to learning. While the

² Whereas Maryland’s education funding system provides funding for low-income students at the district-level, most the literature reviewed for this report discusses the challenges low-income students face at the individual and school levels. While this distinction should be kept in mind, the research team believes the student- and school-level findings from the literature can, and should, be used to inform Maryland’s education funding system. Specific recommendations from the research team regarding Maryland’s funding for low-income students will appear in the final adequacy study reports due in fall 2016.

mechanism used to count low-income students for the purpose of compensatory funding is an important topic, it is not discussed here because it is being addressed in another component of the larger adequacy study.

The FARMS measure, the most commonly used proxy for identifying students who are low-income and/or at-risk, groups together families facing many different challenges. Put differently, FARMS is a broad measure that groups together families across a wide range of income levels and socioeconomic statuses. The number of FARMS-eligible students is not necessarily the same as the number of students in poverty: Whereas more than 50 percent of public school students were FARMS-eligible in 2012, only 22 percent of public school students were classified as being in poverty in that same year (Snyder & Mussu-Gillette, 2015). This is because the threshold to be eligible for FARMS is more lenient than the threshold to be classified as being in poverty. The eligibility threshold for free meal programs is 130 percent of the poverty level, while the threshold for reduced-price lunches is 185 percent of poverty. A number of researchers note that FARMS is just one factor among many factors that may affect student academic experiences (American Institutes for Research, 2005; Baker, 2011; Fantuzzo, LeBoeuf, & Rouse, 2013).

A school's academic results can change dramatically depending on the types of challenges that face the families it serves. Describing a report by Stephen Caldas (1999), the Poverty & Race Research Action Council (PRRAC) notes, "The prevailing family structure of a school's students accounts almost completely for variations in performance between school districts" (PRRAC, 2015, 6).

Baker (2011, 10) calls for a more adequate and precise measurement of poverty, writing that, "Yes, in some cases, we continue to be stuck with these less than precise indicators of child poverty. [...] But it is our responsibility to seek out better measures where we can." Regarding reliability, American Institutes for Research (AIR) (2005, 21) noted that FARMS is "not entirely reliable due to selection bias (some eligible families will not apply), inconsistencies in reporting, and school practices such as universal feeding." New rules for the 2014-15 school year (the Community Eligibility Provision) make it possible for qualifying schools to provide free lunch for all students as long as "certain minimum thresholds are met" (Barshay, 2015). Regarding comprehensiveness, AIR (2005, 1) cautioned that FARMS eligibility "does not capture all dimensions of poverty." There are multiple experiences and risk factors connected to educational outcomes that are not captured with FARMS eligibility (Fantuzzo et al., 2013).

Poverty and Student Learning: Student-Level

Poverty has a direct, observable relationship to academic progress and achievement (Coleman, 1966; Lacour & Tissington, 2011; Baker, Sciarra & Farrie, 2014). Poverty affects students in several ways and through several different mechanisms. The impacts of concentrations of poverty are not manifested at the individual level. It is not until students come together at school and the concentration of poverty increases that non-linear impacts may come into play. At a student level, poverty can produce language gaps, summer learning loss, and attendance and motivation issues.

First, research has shown that students living in poverty may have a significant language gap in comparison to their more affluent peers. In 2012, Stanford psychologist Anne Fernald and a team of researchers followed up on previous research concerning socioeconomic status (SES) and language development (Fernald, Marchman & Weisleder, 2013). Fernald's team found that SES has a measurable impact on children's language proficiency and language processing rates. This is likely related to the fact that, depending on SES, "parents differ in the amount of language stimulation they provide to their infants" (Carey, 2013, para. 18). Higher-SES parents tend to engage in more child-directed speech, while lower-SES parents may not provide this same type of language modeling for their children. Carey (2013) further explains the results of Fernald's (2013) study:

In studies following both English- and Spanish-learning toddlers over several years, [Fernald's research team] found that children who are faster at recognizing familiar words at 18 months have larger vocabularies at age two years and score higher on standardized tests of language and cognition in kindergarten and elementary school. (para. 17)

The skills (e.g. oral language skills and language processing skills) students bring with them when they enter school are related to their levels of achievement as they enter school and progress through the education system. In recognition of the language skill discrepancies between lower- and higher-SES students entering school, the Commission on Education Finance, Equity and Excellence, or Thornton Commission (2002), recommended remedial services for at risk students and for students from economically disadvantaged backgrounds. The recommended services included prekindergarten programs and extended day and year programs for elementary and middle school students.

Students in poverty are also associated with higher levels of summer learning loss. During summers spent outside of school, students – particularly students from lower-income backgrounds – may lose much of the learning they completed during the academic year (Amatucci, 2014). This phenomenon is known as "summer learning loss," or "summer slide." While research shows that all students lose some of the past school year's "factual and procedural information" over the summer, lower-income students experience a more dramatic learning loss (Boone, 2007). Jeff Smink (2011) writes:

Decades of research confirm that summer learning loss is real. According to a report released [in June 2011] by the RAND Corporation, the average summer learning loss in math and reading for American students amounts to one month per year. More troubling is that it disproportionately affects low-income students: They lose two months of reading skills, while their higher-income peers — whose parents can send them to enriching camps, take them on educational vacations and surround them with books during the summer — make slight gains. A study from Johns Hopkins University of students in Baltimore found that about two-thirds of the achievement gap between lower- and higher-income ninth graders could be explained by summer learning loss during the elementary school years. This learning loss is cumulative, summer after summer. It has a tremendous impact on students' success, including high school completion, post-secondary education and work force preparedness. (para. 2)

Summer learning loss is an important student-level factor to consider when examining outcomes from schools with higher concentrations of poverty compared to schools with lower concentrations of poverty.

Finally, attendance and motivation are also frequent issues for low-income students. Low-income

students are more likely to have chronic school attendance issues that may lead to decreased outcomes (Hernandez, 2011). It follows then, that low attendance is a major problem in high-poverty schools, so much so that these schools may focus on attendance before, or in place of, academics (PRRAC, 2015). Further, in high-poverty contexts, motivation and hard work in school may not be clearly linked to success in life. Rather, high-poverty students may feel excluded from mainstream opportunities or goals. They may feel that, even with dedication and hard work, their benefit attainment will not match that of their middle-class counterparts (PRRAC, 2015).

Poverty and Student Learning: School Level

Poverty can negatively affect not just individual students, but also entire schools and districts. The 1966 Coleman Report showed that “concentrated poverty inevitably depresses achievement on a school-wide and a district-wide basis” (Brief Amicus Curiae, 19, cited in PRRAC). Coleman (1966) determined that “the social [class] composition of the student body is more highly related to achievement, independent of the students’ own social background, than is any other school factor” (Coleman et al., 1966, 325). Lippman & McArthur (1996, 10) also found that “young adults who had attended urban high-poverty schools had much higher poverty and unemployment rates later in life than those who had attended other schools.”

Concentration of poverty is inversely correlated with student achievement. Low-income students tend to perform less well on state assessments than their more affluent peers. Similarly, schools with more students in poverty tend to have lower average test scores than schools with fewer students in poverty (Coleman, 1966). While some literature presents the relationship between poverty and achievement as a linear relationship, other literature describes non-linear leaps in challenges when schools reach a certain “critical mass” of poverty. An *amicus* from the NAACP Legal Defense and Educational Fund, Inc. and the New York Civil Liberties Union, prepared for *Paynter v. State* and cited in PRRAC, used research from the U.S. Department of Education to mark a critical mass of poverty concentration at 25 percent:

In schools with less than 7% poverty, 27.6% of poor students and 11% of non-poor students achieved below the national average. But when school poverty levels increase to greater than 25%, then 56% of poor students and 36.9% of non-poor students fell below the national average. (Kennedy et al., 1986; Brief Amicus Curiae, 2001, 24)

The *amicus* further states:

Research establishes that most successful schools are those in which the middle class is the majority. Success starts turning to failure, it is generally agreed, when the school becomes 50% minority or low income. [...] The *Prospects* studies found that when half a student body is poor, then all students' achievement will be depressed, and that when 75% is poor, then all students' achievement will be "seriously" depressed. [...] Another expert has concluded that a district with over 60% poor children "can no longer rely solely on its own internal efforts" to avoid failure. (Puma, M. et al., 1997; Schellenber, S., 1998, 133; Brief Amicus Curiae, 2001, 134)

Poverty’s influence on outcomes affects all students, not just low-income students. For all students, regardless of individual SES, the proportion of poor students in school is negatively correlated with

academic achievement (Kennedy, Jung & Orland, 1986). For all students, regardless of individual SES, a school's average SES is positively correlated with academic achievement (Perry & McConney, 2010). A school's average SES then, has as much of an influence on a student's academic achievement as his or her individual SES (Rumberger & Palardy, 2005). Students who are poor and who also attend high-poverty schools suffer what has been called a "double handicap" (Brief Amicus Curiae, 2001).

Students in high-poverty schools may have difficulty finding motivation for their studies and may view school as unimportant. In "the absence of a strong positive peer influence," even students who *are* academically invested can find their achievement decreased by an overall negative peer effect (Orfield & Lee, 2005, 15; Rumberger & Palardy, 2005). This peer effect could create a linear set of challenges associated with poverty or it could create a non-linear set of challenges. Depending on whether the challenges were linear or non-linear, funding might address peer effects by allocating a flat amount per low-income student (linear) or by allocating a greater amount per low-income student in schools with high concentrations of poverty, where overall negative peer effects are likely (non-linear).

In the absence of clear opportunities and career options that result from education, it is easy to see how high-poverty students in high-poverty schools might view school as unimportant (Orfield & Lee, 2005; Lacour & Tissington, 2011). Lippman and McArthur (1996, 9) found that "students in high-poverty schools regardless of location were less likely [...] to spend as much time on homework than those in low-poverty schools." Even for students with high aspirations, negative peer effects can influence both the motivation to achieve and the capacity to achieve (PRRAC, 2015).

High-poverty schools tend to have lower parental involvement than their lower-poverty counterparts (PRRAC). The *amicus* (2001, 28) for *Paynter v. State* noted that, "Middle class parents are simply more active in and more demanding upon their children's schools," and that these middle class parents' "involvement and higher expectation translate into higher performance [for their students]." Whereas middle class parents often work in partnership with schools and teachers, low-income parents often have "abysmally low" levels of involvement in their children's schools (Brief Amicus Curiae, 2001).

Teachers also influence student outcomes. PRRAC (2015) explains that high-poverty schools are more likely than other schools to have less qualified teachers or teachers who lack licensure. These teachers may be less effective at educating students, as they may have lower levels of experience, education, and subject area expertise. Furthermore, high-poverty schools often have higher rates of teacher turnover, leaving hard-to-fill vacancies. Lippman and McArthur (1996) found that administrators in urban high-poverty schools had a more difficult time hiring teachers. Lippman and MacArthur also found that urban high-poverty schools had more problems with teacher absenteeism than their counterparts in suburban schools. The researchers linked this persistent absenteeism to low teacher morale.

Finally, in schools with high concentrations of poverty, curricula may be diluted, "undercut[ting] even the bright, motivated student who happens to attend a high-poverty school" (Brief Amicus Curiae, 2001, 30-32). Lippman and McArthur (1996) found that students in urban high-poverty schools were less likely to have gifted and talented programs at their schools. Academic results may also be diluted so that work

is actually lower quality than grades or test scores seem to indicate (PRRAC, 2015). In schools with concentrated poverty, expectations for students may also be lowered to the point where students suffer from decreased expectations from all angles: from peers, parents, counselors, administrators, and principals (PRRAC, 2015).

Taken together, there are multiple mechanisms through which concentrated poverty in schools can lead to increased educational challenges for both poor and non-poor students. Evidence from the literature shows that schools with higher concentrations of poverty face increased challenges. Some researchers suggest that these increased challenges may be non-linear; in other words, the challenges schools face may be more severe with each additional low-income student.

How Does Poverty Become Concentrated in Schools?

In most communities, schools reflect the attributes of the communities they serve. Schools located in communities with high concentrations of poverty are likely to have student bodies with high concentrations of poverty. The issues associated with poverty extend beyond the school walls. This raises a key issue for school funding: Where does a school system's responsibility to address poverty-related issues end and where does a community's responsibility begin? This community responsibility could include a drive to provide adequate housing and adequate transportation, and/or to promote economic development. This review does not seek an answer to the question of how responsibility should be divided between school systems and communities. However, because neighborhood concentration of poverty is related to school concentration of poverty, it is important to understand how neighborhood challenges are manifested in schools.

Saporito and Sohoni (2007) used census data and school enrollment data to examine high-poverty public schools in 21 large school districts. In a report, "Mapping Educational Inequality," they explain that "to understand how poverty becomes concentrated in schools, it is necessary to integrate geo-demographic data" (1230). The causes of concentrated poverty in schools are closely related to the causes of concentrated poverty in the larger community. It is well-documented that poverty tends to concentrate itself; it is more common in some areas than in others and more common among some racial-ethnic groups than others (Jargowsky, 2013). Concentrations of spatially- and racially-distributed poverty exist and are maintained through the sociological phenomena described below.

Poverty is spatially distributed (Jargowsky, 2013). Residents of low-income neighborhoods face a number of challenges, including lower education levels, lower employment levels, and more single-parent families. (Jargowsky, 2013). Dietz (2002, 540) explained that poverty has "neighborhood effects," where a neighborhood effect is defined as "a social interaction that influences the behavior or socioeconomic outcome of an individual." Neighborhood effects can lead to negative effects in schools. Jargowsky (2013, 22) explains: "Concentration of poverty has implications for educational outcomes because schools are creatures of neighborhoods. Often, this relationship [between neighborhoods and schools] is legally encoded in school attendance zone boundaries."

However, Dietz (2002, 539) suggests that, “although neighborhood characteristics are important, their influences are much smaller than suggested by previous research.” The effects of poverty are visible in neighborhoods, but they are much more visible in schools. Poor children typically encounter more poverty in their neighborhood schools than in their neighborhoods. Saporito and Sohoni (2007) explain:

By chance alone, when the average poor child steps out of her door, she is more likely to associate with a more affluent child than another poor child. But when a poor child attends a public school, she is much more likely to associate with another poor child than with a more affluent counterpart. (1242)

Poverty is intensified in schools compared to neighborhoods. One reason for this intensification is that wealthier families can choose to leave neighborhood schools for private, magnet, or charter schools, while poorer families are left without this option. When wealthier families withdraw from public schools, they leave their neighborhood schools with higher concentrations of poor and minority students and under-representations of more affluent students. In this way, public schools isolate children by socioeconomic status even more than the neighborhoods where children grow up (Saporito & Sohoni, 2007). The flight of wealthier families from neighborhood schools has trickle-down effects on all families, since wealthier families’ choices lead to higher concentrations of poverty – and, as a consequence, lower levels of achievement – in neighborhood schools.

Student Poverty and School Funding

A goal of the Maryland adequacy cost study is to provide information on how to construct a school funding structure that is responsive to student- and district-level needs. Maryland’s current school funding formula provides additional revenue for every FARMS-eligible student in a district. For example, in the 2014-15 school year, the compensatory education adjustment provides an additional \$6,654 per FARMS student. In a school of 500 students with 50 percent of students eligible for FARMS, this totals nearly \$1.7 million in additional funding. The current formula is linear; that is, it does not provide a higher rate of funding per low-income student as the concentration of poverty in a district increases. Nevertheless, as the school example above (a school of 500 students with 50 percent FARMS-eligible students) illustrates, the formula provides considerable additional revenue for each low-income student.

There are many suggestions within the literature related to both the need for increased funding to high-poverty schools and uses of that funding. Baker et al. (2014, 2) highlight the need for school funding to deal with the “large and growing population of poor students who are concentrated in high-poverty school districts.” In 2011, 21 percent of school-aged children were living below the federal poverty line and 16 percent were attending schools with concentrations of poverty above 30 percent (Baker et al., 2014). Each of these figures represents a major increase in levels of childhood poverty and school poverty since 2007. Baker et al. (2014) suggest that school funding should be increased for schools with concentrated poverty, assuming concentrated poverty creates greater levels of school or district need:

Student poverty — especially concentrated student poverty — is the most critical variable affecting funding levels. Student and school poverty correlates with, and is a proxy for, a multitude of factors that increase the costs of providing equal educational opportunity — most notably, gaps in educational achievement, school district racial composition, English language proficiency, and student mobility. State

finance systems should deliver greater levels of funding to higher-poverty versus lower-poverty settings, while controlling for differences in other cost factors. (5)

At the classroom- and school-levels, Lacour and Tissington (2011) recommend tailoring instructional techniques to student populations. They explain that instructional techniques, such as differentiated instruction, can also help improve outcomes for low-income students and for students in low-income schools. Instructors should and must find ways to make academic material applicable to students' experiences and cultures. Instructors should call for more participation, especially from at risk students. Instructors should also work with parents to increase parental involvement in schools and in student learning. Burkam and Lee (2002) suggest that equalizing the levels of resources available across schools "would aid in reducing the inequality that children and schools face at the starting gate."

It is also possible that some of the negative effects of concentrated poverty in schools could be mitigated through more effective uses of school funding. For example, attendance issues might be mitigated with better funding for before- and after-school programs or better funding for in-school healthcare (e.g. school nurses). Clotfelter et al. (2008) suggest that bonus payments for attracting and retaining higher-quality teachers in high-poverty or low-achievement schools might improve instructional effectiveness and reduce teacher turnover rates, particularly for higher-quality teachers. There are a number of other examples or suggestions for using available funds more effectively. For example, funding could provide for incentive bonuses for effective teachers who stay in a high-poverty school for more than three years. It could provide for better instructional materials and curricula updates. It could provide for improved parent engagement or even teacher professional development sessions on how to engage parents in high-poverty schools. There are a number of opportunities for better using school funds to improve outcomes for students in schools with concentrated poverty.

The research linking school funding to poverty supports increased funding for low-income students. However, the research is less clear regarding how much additional funding is required to support students in districts with high concentrations of poverty or what level of poverty constitutes a high concentration of poverty.

Summary

The current Maryland school funding formula includes linear increases in funding for low-income students (measured using FARMS eligibility as a proxy for low-income status). The formula applies a weight of .97 to the base per-pupil funding amount. This literature review provides information and analysis to help answer the question of whether funding for Maryland's low-income students should continue to be linear, or if funding should instead be non-linear.

The research offers rich descriptions of the connection between poverty and low student achievement at the student- and school-levels. It also describes the mechanisms by which both students and schools are affected by poverty. The research clearly establishes that lower student achievement and other school challenges are associated with student poverty. It also provides evidence to support increased funding for low-income students. However, the research is not conclusive on whether the mechanism

for this increased funding should be linear or non-linear –whether the additional per student funding for low-income students should increase as school or district concentrations of low-income students increase. Some of the research suggests certain poverty thresholds, ranging from 25 percent to 75 percent, create non-linear leaps in school-wide challenges. However, the research does not establish a definitive relationship between these increased challenges and the resources needed to address such challenges. School enrollment data show that, using FARMS eligibility to measure low-income status, the majority of Maryland schools have more than 25 percent poverty and many Maryland schools have more than 75 percent poverty. Maryland’s current funding formula was created to provide the additional resources necessary to support key programs for low-income students. These programs, noted in the literature, include services like extended learning time and prekindergarten programs for low-income children (publically funded prekindergarten for four-year-olds). The research team will continue to explore the issue of whether funding for low-income students in Maryland should be linear or non-linear. The team will report its recommendations for this, along with its overall adequacy study recommendations, in fall 2016.

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