LEAVE NO (YOUNG) CHILD BEHIND: PRIORITIZING ACCESS IN EARLY CHILDHOOD EDUCATION¹

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This essay confronts the difficult tradeoff that policymakers face regarding how to allocate finite early childhood resources to help poor children: whether to prioritize efforts to improve the intensity of programs, or to direct new funding to improve access to at least moderately intensive programs. While making additional improvements in the intensity of early childhood programs for poor children would almost surely pass a benefitcost test, the net benefits of additional spending in this area would probably be higher still from improving access—that is, providing modestly intensive services to low-income children currently not enrolled in such programs.

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During the 2008 presidential campaign, then-candidate Barack Obama pledged to increase funding for early childhood education for low-income children. The question now for President Obama is how to follow through on this pledge.

Many people (including us) would support a truly dramatic expansion in funding for early childhood education (ECE) in the United States in order to substantially improve both access to ECE programming in America for low-income children as well as the intensity of these programs, by which we mean spending per child. A serious effort along these lines might cost as much as \$40 billion or \$50 billion per year, and would have the longrun effect of dramatically reducing educational (and income) disparities in America and improving the overall competitiveness of the American economy-and pass a benefit-cost test to boot.²

For better or worse, however, this type of massive increase in ECE spending is not in the cards, given projected federal budget deficits that are measured in the trillions of dollars³ and equally grim budget forecasts for state governments around the country. What is on the table are much more modest funding increases for ECE. The American Recovery and Reinvestment Act of 2009 (ARRA) included about \$4 billion in added resources for early childhood care and education programs in Head Start and Early Head Start (EHS) (\$2.1 billion), and the Child Care and Development Block Grant (\$2.0 billion), which is around a 15 percent increase in funding.⁴ The Administration also announced in July 2009 the new Early Learning Challenge Fund (ELCF), which would provide around \$1 billion per year over ten years to support improving the early learning settings for preschool-age children.⁵ These are

important and welcome increases to existing ECE funding that we support. They nonetheless leave us short of what would be required to achieve major gains in both access and program intensity.

This essay confronts the very difficult tradeoff that policymakers must make in thinking about how to spend an additional finite pool of early childhood funding: whether to prioritize efforts to improve the intensity of ECE programs, at the expense of leaving hundreds of thousands of eligible low-income preschoolage children unenrolled in any sort of government ECE program, or whether to instead direct a significant portion of new funding to improve access to at least moderately intensive programs. Consider that Head Start's current budget is not even enough to enroll every low-income child into that program. Should we be ensuring that every poor child is receiving a program of at least the intensity of Head Start (with per child spending on the order of about $(9,000 \text{ per year})^6$ before we start providing any children with government programs that have per-child spending of \$15,000 or \$20,000?

For the purposes of this essay it is useful to decompose what most people mean by program quality into spending per child, or what we call intensity, and the developmental benefits that children receive per dollar spent, what we call efficiency. We wholeheartedly endorse current proposals to improve the efficiency of existing ECE spending through increased accountability efforts and other measures. In principle it might even be necessary to make incremental increases in total program spending to increase the efficiency of each dollar spent (if there are, for example, threshold effects of early childhood interventions on children's life outcomes). The key policy dilemma in our view is how

to choose between substantial changes in program intensity versus expansions in access given current budget constraints in the allocation of any new monies that become available.

We would ensure that every low-income child is enrolled in a program that is of at least the intensity of Head Start, with as high a developmental benefit as possible.

We believe that while making additional improvements in the intensity of ECE programs for poor children would almost surely pass a benefit-cost test, the net benefits of additional spending in this area would probably be higher still from improving access—that is, providing modestly-intensive ECE services to lowincome children who are currently not enrolled in such programs. We make this recommendation in the context of prior evidence suggesting that:

—There remains a problem of access to decent early childhood programs by disadvantaged children, including lowincome children whose family incomes exceed the eligibility criteria for government programs such as Head Start.⁷

—Even modestly intensive ECE interventions with spending levels on the order of Head Start (or even less), which produce moderately sized short-term impacts, seem capable of improving the long-term life chances of low-income children.⁸ —Variation in the quality of child care and early education programs appears to matter more for the development of lowincome children as compared to their higherincome peers.⁹

—There are positive but diminishing returns to increasing the quality and intensity of ECE programs. For example, compared to one year of ECE services, enrolling for two years produces outcomes that are less than twice as good.

We would, as our first priority, ensure that every low-income child in America is enrolled in an ECE program that is of at least the intensity (spending level) of Head Start, with as high a developmental benefit (efficiency) as possible. This would lead to important developmental gains and address the serious inequities in access to good ECE options that currently exist. As part of such an effort, special attention will need to be paid to making existing ECE programs feasible and appealing for low-income families to enroll their children, for example by making ECE center hours fit better with the work schedule of parents and addressing important issues of cultural compatibility. Improving these access and utilization challenges will be particularly important in serving populations that are traditionally under-enrolled in ECE programs, notably Hispanics and other English language learner (ELL) children.

The remainder of our paper is organized as follows. In the next section we argue that even modest short-term impacts can matter for the long-term life chances of low-income children. In the following section we argue that the best evidence suggests that there are diminishing marginal returns to increasing the intensity of ECE programs. This argument implies that the benefit-cost ratios from improving access to decent ECE programs for those children who currently do not participate in such programs are likely to outweigh the gains from substantially increasing program intensity for just a subset of poor children. In the final section we discuss the implications of this access-over-intensity argument for ECE policy.

Modest Impacts Can Matter

The tremendous enthusiasm for early childhood education in the United States comes in part from evidence of substantial disparities in achievement test scores between rich and poor children even before children reach school age, and in part from the impressive gains in children's short- and long-term outcomes achieved by intensive ECE interventions like Abecedarian and Perry Preschool. For example, the Abecedarian intervention provided very high-quality, full-time, year-round centerbased ECE to poor children starting at around 6 months of age through 5 years of age. Abecedarian was implemented as a randomized experiment, so we can have high confidence in what the program accomplishes. Evidence from the experiment suggest that Abecedarian boosted IQ scores by fully 1.2 standard deviations at age 3, a gain that is large enough to eliminate the gap in IQ scores observed between black and white children in the United States. Abecedarian even generated long-term gains in IQ scores, equal to nearly .4 standard deviations measured at age 21, as well as large treatment-control differences in college entry rates (36 percent versus 14 percent) and teen parenthood (18 percent versus 39 percent),¹⁰ with estimated benefit-cost ratios of 1.4 to 3.6.¹¹ Perry Preschool increased IQ and achievement test scores by nearly as much as Abecedarian did in the short term, and despite some fade out in test score impacts the intervention produced lasting gains in high school graduation and

employment and declines in criminal behavior.¹² The benefit-cost ratio for Perry Preschool may be as high as nearly thirteen to one.¹³

By comparison, the estimated impacts for less intensive, larger-scale interventions such as Head Start have struck many observers as disappointingly small. For example, the recent randomized experimental study of Head Start funded by the U.S. Department of Health and Human Services (HHS) and carried out by Westat suggests that the short-term effects of Head Start on children enrolled in 2002 or 2003. relative to whatever alternative center-based or informal care arrangements children would have experienced otherwise, are on the order of .1 to .3 standard deviations for cognitive outcomes.¹⁴ These short-term impacts seem to be of about the same magnitude as what was observed for previous cohorts of Head Start children who were in the program during the 1970s and 1980s.¹⁵ These short-term test score gains generally seem to fade out for program participants, a fade out that we see among children who participated in the program many decades ago, as well as those who are were enrolled in Head Start more recently.¹⁶

State-funded universal pre-K programs that offer young children focused, high-quality instruction tend to generate larger gains than Head Start in achievement test scores,¹⁷ without deleterious consequences—and perhaps with accompanying positive impacts—on socialemotional development.¹⁸ Long-term developmental impacts, however, remain to be documented. These pre-K programs have not been subject to randomized experimental study, but the results currently available are nonetheless encouraging.

While many people criticize the impacts of large-scale ECE interventions

such as Head Start as being disappointingly small, what is the right standard to use in deciding whether these program effects are large or small? Some observers have used the more-or-less arbitrary standard established in the education research world to call program effect sizes of .2 standard deviations small, .5 medium and .8 or more large.¹⁹ But it seems misguided to judge the value of a program by its benefits alone, without considering costs. Would we really enact a program with an effect size of .8 that cost \$14 trillion per year (that is our entire GDP)? Would we really want to trash a program that increased test scores by just 0.2 standard deviations, but cost only a nickel per child?²⁰

Even programs whose test score gains fade can produce lasting improvements in life outcomes and the effects need not be enormous for the programs to pass a benefit-cost test.

A different benchmark that some observers have used is relative to the scale of the social problem that is being addressed. For example in his review of the recent Head Start experiment's results, Doug Besharov of the University of Maryland argues "these small gains will not do much to close the achievement gap between poor children (particularly minority children) and the general population. We should expect more."²¹ But this is a little like visiting the Mercedes dealer with \$9,000 and then walking out disappointed.

The right way to judge public programs is by comparing program benefits to costs, which requires converting both to the same metric, usually dollars—that is, benefit-cost analysis. This sort of analysis involves identifying the benefits to society the program generates over the short, medium and long term, monetizing and aggregating these benefits, and comparing their discounted values to the program costs. It is difficult to carry out this sort of benefitcost analysis for recent cohorts of children who participate in Head Start or the newer state pre-K programs because they are still children, and so we cannot observe how the programs do or do not impact participants into adolescence and adulthood.

But what we can say is that for lowincome children who participated in Head Start in the 1960s through 1980s, the program seems to have generated lasting improvements in a range of other key outcomes that society cares about, including health, educational attainment, labor market earnings, and perhaps criminal behavior as well.²² Note that there is no randomized experimental evidence for Head Start's lasting impacts because the children in Westat's recent experimental study have been followed up for just a short period of time. The evidence for long-term Head Start impacts comes instead from natural experiments (or quasi-experiments) that we believe are convincing enough to support a persuasive case for lasting program impacts. Our case is strengthened by the fact that evidence for lasting Head Start impacts comes from several different studies that use different research designs and datasets.

Note also that the framework of benefit-cost analysis provides us with a way to judge the mixed pattern of impacts that we observe for Head Start—short-term impacts on test scores that fade out, but long-term persistent impacts on key behavioral outcomes. People who think that test scores should be the main focus for education policy will view these results as something of a disappointment, while those who hope that ECE can be an effective part of the nation's effort to reduce intergenerational transmission of poverty will be encouraged by some of the lasting behavioral impacts. The right way to adjudicate this dispute is to ask whether the dollar value to society from those outcomes that are affected by Head Start are sufficient to justify the program's costs. Our calculations suggest that Head Start passes a benefit-cost test, at least for children who participated in previous decades.²³

Our discussion in this section has focused on Head Start because that is the large-scale program for which evidence of long-term impacts is available. But the larger points we make are relevant for other, newer, ECE programs such as the universal pre-K programs that many states have begun to implement: fade-out of test score impacts is not a fatal limitation of these programs, since we have evidence that even programs whose test score gains fade can produce lasting improvements in life outcomes; and moreover the effects of these interventions need not be enormous in some absolute sense in order for the programs to pass a benefit-cost test.

Effects of Improving Program Quality

The argument for substantially improving the quality and intensity of ECE services for poor children stems in part from the striking successes found in small-scale ECE demonstration projects like Perry Preschool and Abecedarian. But more costs more. The gross costs of the Perry Preschool program are about twice as much as Head Start, while the gross costs of Abecedarian are higher still.²⁴ The key question for public policy is whether devoting additional dollars to increasing program quality or intensity generates higher or lower net benefits compared to devoting those resources to expanding enrollment rates (in other words, access). The answer, as best we can tell, is that expanding access for preschoolers to programs that meet the more modest levels of quality seen in Head Start and state pre-K programs seems to be the more productive use of additional expenditures given evidence that there are positive but diminishing marginal returns to ECE spending on children.

We can see evidence of these diminishing marginal returns to increased ECE spending per child from comparing the size of the estimated long-term outcomes for Head Start, Perry Preschool, and Abecedarian. Since no one has yet carried out a complete benefit-cost analysis for Head Start, we cannot directly compare benefit-cost ratios across different candidate ECE programs. But we can compare program impacts on those outcomes that are generally available in the different studies of these three programs, including schooling attainment, earnings, criminal behavior, and health. Analysis by David Deming of Carnegie Mellon University shows that Head Start's impact on a standardized index of these adult outcomes seems to be about 80 percent as large as the estimated impact for both Perry and Abecedarian.²⁵ Deming's finding is quite striking since Head Start costs significantly less than both Perry and Abecedarian, and because Head Start is a large-scale public-sector program rather than a small, controlled demonstration project.²⁶

It should be noted that these comparisons across programs are not perfect because the different programs have been administered to very different program populations, have been studied using different outcome measures, and were evaluated at a time when the counterfactuals

(in other words, child care and preschool education options available to the control children) were quite different from what they are today. But other data also point in the direction of diminishing marginal returns to ECE spending per child. For example data from the National Day Care Study found that cutting class sizes in half from twentyfour to twelve children, which would roughly double spending per child on day care, does indeed improve children's scores on both the Preschool Inventory or the Peabody Picture Vocabulary Test but just by 20 percent—that is, doubling inputs increases outputs, but not by twice as much.²⁷ Similarly, in Perry Preschool, children who participated in the program for two years did indeed experience larger gains than children who enrolled for just a single year, but here again the difference in program benefits was less than twice as large.²⁸

Implications for New Early Childhood Initiatives

Our discussion suggests that lowincome children and society as a whole will benefit more from prioritizing new ECE funding for expanding access over efforts to substantially improve program intensity beyond current levels. In an ideal world we would spend up to \$50 billion per year on intensive ECE programs that serve every low-income child in the United States. Such a policy would have important benefits for the long-term productivity of American workers, have potentially profound impacts on income inequality and disparities in life outcomes across race and social class lines, help reduce the inter-generational transmission of poverty in America, and would even pass a benefit-cost test as well.²⁹ But in a world of constrained resourcesthat is, the world that we actually live in—it may be a mistake to not first and foremost ensure that all poor children have the

opportunity to receive at least moderately intense, developmentally supportive early childhood educational experiences.

Low-income children and society as a whole will benefit more from prioritizing new ECE funding for expanding access over efforts to substantially improve program intensity.

Such an initiative should obviously go hand-in-glove with efforts to improve program quality, by which we mean maximizing the bang per buck achieved from existing ECE spending, including the creation of stronger incentives for states and providers to make significant quality improvements and to provide parents with transparent systems for identifying programs that pass a threshold of quality that is likely to support positive developmental outcomes. This is one potentially important function of the Quality Rating Systems that states are now putting in place and that could receive support from the Obama administration's Early Learning Challenge Fund (if it is approved by Congress). Such efforts could also include reviewing the types of curricula that Head Start centers around the country are using, trying to improve the measurement and transparency of variation in program quality, and shutting down lowquality programs. It is also true that expanding enrollment rates in our existing set of moderately-intensive ECE programs, including EHS, Head Start, state-funded universal pre-K programs, and the highestquality child care programs, could require some design changes that increase their perpupil costs. For example, in the recent federally-funded Head Start experiment only 86 percent of children assigned to the Head Start program group enrolled in the program. Anecdotal accounts suggest that many Head Start centers around the country are under-enrolled in part because they run part-time programs that do not fit well with the work schedules of low-income parents. Other program design changes might be required as well to increase utilization rates among special priority groups such as Hispanic families and other English learners, which currently have particularly low enrollment rates. But our key argument is that we should make sure that every lowincome child is enrolled in some sort of at least moderately intensive, developmentally supportive ECE program before we do even more to substantially increase program intensity.

Notes

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 ² Jens Ludwig and Isabel Sawhill, "Success by Ten: Intervening Early, Often and Effectively in the Education of Young Children," (Washington, DC: Brookings Institution Hamilton Project Discussion Paper, 2007); Deborah Phillips and Gina Adams, "Child Care and Our Youngest Children," *Future of Children* 11, no. 1 (2001): 35-51.
³ Jackie Calmes, "In \$3.8 Trillion Budget, Obama Pivots to Trim Future Deficits." *New York Times,* February 2, 2010, p. A17.

⁴ Lisa Guernsey, "A Closer Look at Obama's FY11 Budget: Head Start," New America Foundation, Early Education Intiative, Early Ed Watch Blog

(<u>http://earlyed.newamerica.net/blogposts/2010/a closer look at obama s fy11 budget head start-27490</u>, February 12, 2010); Lawrence Aber and Ajay Chaudry, *Low-Income Children, Their Families and the Great Recession: What Next in Policy?* (Washington, DC: Urban Institute, 2010).

⁵ U.S. Department of Education, "The Early Learning Challenge Fund Results-Oriented, Standards Reform of State Early Learning Programs," February 2009 (http://www2.ed.gov/about/inits/ed/earlylearning/elcf-factsheet.html).
⁶ Ludwig and Phillips, "The Benefits and Costs of Head Start."

⁷ Many low-income children currently experience very poor-quality programs, see Ajay Chaudry Putting Children First: How Low-wage Working Mothers Manage Child Care (New York: Russell Sage, 2004); Jack Shonkoff and Deborah Phillips, ed., Neurons to Neighborhoods: The Science of Early Childhood Development. (Washington, DC: National Academy Press, 2000). In fact, children living in poverty and those living in financially secure families tend to receive relatively higher-quality center-based care and education than do children in non-poor, but low-income families. This likely occurs as a result of strict means-tested eligibility criteria for most child care subsidies and public programs; see Deborah Phillips and others, "Child Care for Children in Poverty: Opportunity or Inequity," Child Development 65 (1994): 472-492; National Institute of Child Health and Human Development Early Child Care Research Network, "Poverty and Patterns of Child Care," in Consequences of Growing up Poor, ed. Greg J. Duncan and Jeanne Brooks-Gunn (New York: Russell Sage, 1997), pp. 100-131; Rebecca M. Ryan and others, "The Impact of Child Care Subsidy Use on Child Care Quality," Early Childhood Research Quarterly (2010, Manuscript under review). The quality of home-based child care, however, shows a linear relationship to family income. In both instances, many low-income children are not receiving equal access to higher-quality early care and education programs in the United States; see Phillips, "Child Care for Children in Poverty: Opportunity or Inequity." ⁸ Ludwig and Phillips, "The Benefits and Costs of Head Start."

⁹ Sarah Enos Watamura and others, "Double Jeopardy: Poorer Social-emotional Outcomes for Children in the NICHD SECCYD Experiencing Home and Child Care Environments that Confer Risk," *Child Development* (2011, in press);Elizabeth Votruba-Drzal, Rebekah Levine Coley, and P. Lindsay Chase-Lansdale, "Child Care and Low-income Children's Development: Direct and Moderated Effects," *Child Development*, 75 (2004): 96-312.

¹⁰ Frances A. Campbell and others, "Early Childhood Education: Young Adult Outcomes from the Abecedarian Project," *Applied Developmental Science* 6, no.1 (2002): 42-57.

¹¹ W. Steven Barnett and Leonard N. Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program and its Policy Implications," *Economics of Education Review* 26, no. 1 (2007): 113-125.

¹² Lawrence Schweinhart and others, *Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40*. (Ypsilanti, Michigan: High/Scope Press, 2005).

¹³ Clive R. Belfield and others, "The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age-40 Follow-Up," *Journal of Human Resources* 41, no.1 (2006): 162-190.

¹⁴ Michael Puma and others, *Head Start Impact Study: First Year Findings* (Washington, DC: US Department of Health and Human Services, Administration for Children and Families, 2005).

¹⁵ Janet Currie and Thomas Duncan, "Does Head Start Make a Difference?" *American Economic Review* 85, no.3 (1995): 341-364; Jens Ludwig and Douglas L. Miller, "Does Head Start Improve Children's Life Chances? Evidence from a Regression-Discontinuity Design," *Quarterly Journal of Economics* 122, no.1 (2007): 159-208; David Deming, "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start," *American Economic Journal: Applied Economics* 1, no.3 (2009): 111-134.

¹⁶ See for example the results of the new Head Start Impact study: Michael Puma and others, *Head Start Impact* Study and Follow-Up 2000-2010 (Washington, DC: US Department of Health and Human Services, Administration for Children and Families, 2005). Available at http://www.acf.hhs.gov/programs/opre/hs/impact_study/.

¹⁷ W. Steven Barnett, Cynthia Lamy and Kwanghee Jung, "The Effects of State Pre-Kindergarten Programs on Young Children's School Readiness in Five States," (Rutgers University, National Institute for Early Education Research, 2005); Gregory Camilli and others, "Meta-Analysis of the Effects of Early Childhood Interventions on Cognitive and Social Development." (Teachers College Record, Forthcoming); William Gormley, Deborah Phillips, and Ted Gaver, "Preschool Programs Can Boost School Readiness." Science 320 (June 2008): 1723-24: William Gormley and others, "The Effects of Universal Pre-K on Cognitive Development." Developmental Psychology 41, no.6 (2005): 872-884.

¹⁸ William Gormley and others, "Social-Emotional Effects of Early Childhood Education Programs in Tulsa" (Paper presented at the Meeting of the Society for Research in Child Development, Denver, CO, April 3, 2009). ¹⁹ Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences* (New York: Academic Press, 1977).

²⁰ For an excellent discussion of these points see Katherine Magnuson and Greg Duncan, "The Role of Family Socioeconomic Resources in the Black-White Test Score Gap Among Young Children," Developmental Review, 26, no.4 (2006): 365-399.

²¹ Douglas J. Besharov, "Head Start's Broken Promise," On the Issues Series, American Enterprise Institute, October 2005.

²² Eliana Garces, Duncan Thomas, and Janet Currie, "Longer Term Effects of Head Start," American Economic Review 92, no.4 (2002): 999-1012; Ludwig and Miller, "Does Head Start Improve Children's Life Chances;" Deming, "Early Childhood Intervention."

²³ Ludwig and Phillips, "The Benefits and Costs of Head Start;" Ibid., "Long-Term Effects of Head Start on Low-Income Children," New York Academy of Sciences 1136 (2008): 257-268.

²⁴ Barnett and Masse, "Comparative Benefit-Cost Analysis of the Abecedarian Program;" Ludwig and Sawhill, "Success by Ten."

²⁵ Deming, "Early Childhood Intervention."

²⁶ Comparing outcomes across programs on an index of adult outcomes is complicated by the sensitivity to impacts on crime. As noted earlier in the paper, Abecedarian has proportionately large but not statistically significant impacts on criminal behavior. But Abecedarian has impacts on a wide range of other adult behavioral outcomes that previous research suggests is strongly predictive of crime, such as IO scores and drug use. For Head Start the evidence for impacts on crime is mixed: Deming [Deming, "Early Childhood Intervention"] uses a siblingdifference research design and finds no detectable impacts on self-reported criminal behavior in the NLSY, but Garces [Garces, Thomas, and Currie, "Longer Term Effects of Head Start"] use the same research design and find large reductions in self-reported arrests among African Americans in the PSID.

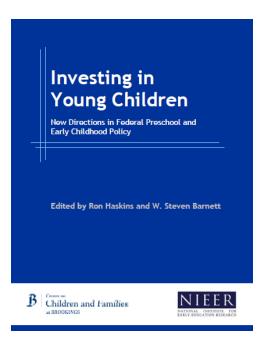
²⁷ Richard Ruopp and others, *Children at the Center: Summary Findings and Their Implications* (Cambridge, MA: Abt Books, 1979), p. 94.

²⁸ John R. Berrueta-Clement and others, *Changed Lives: The Effects of the Perry Preschool Program on Youths* Through Age 19 (Ypsilanti, Michigan: High/Scope Press, 1984).

²⁹ Ludwig and Sawhill, "Success by Ten."

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