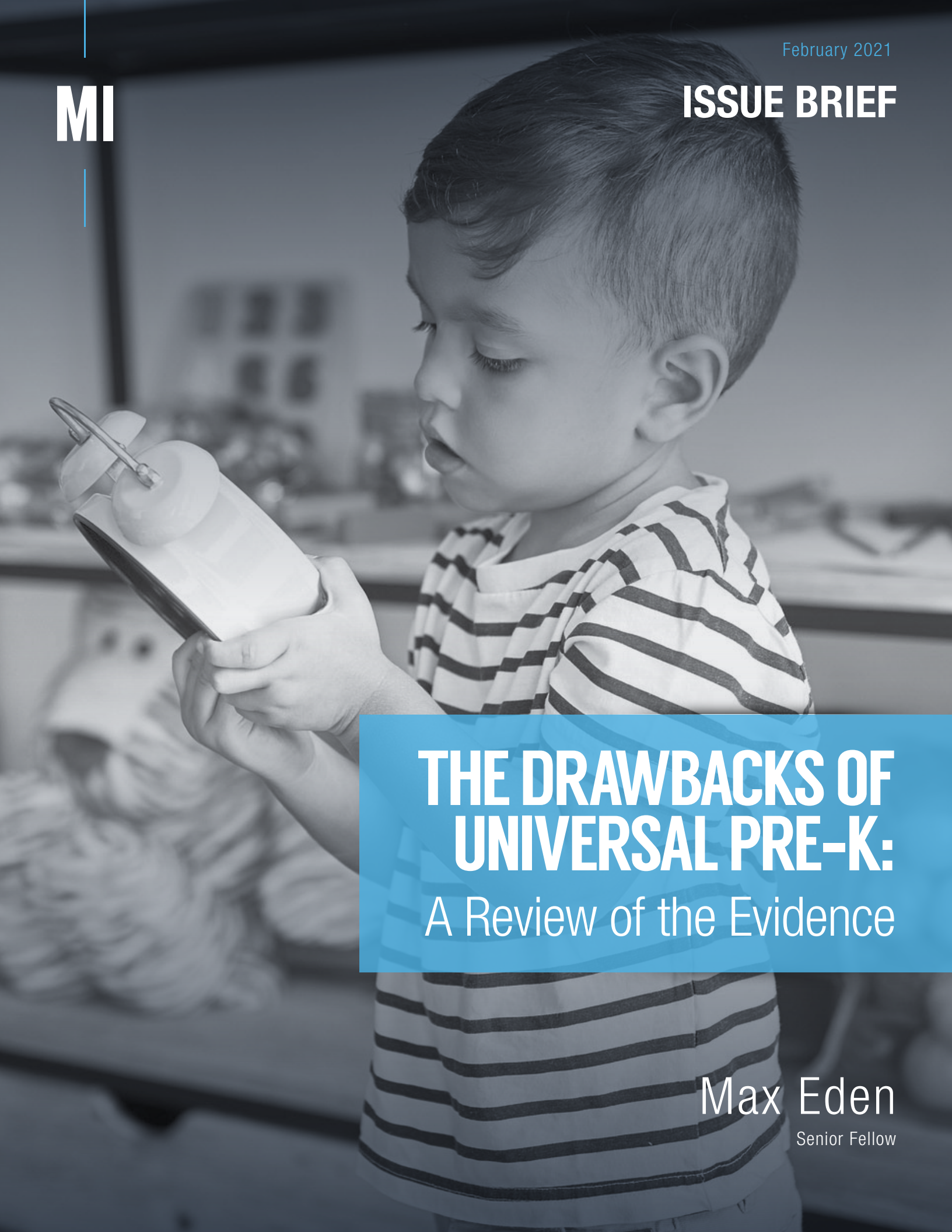

February 2021

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ISSUE BRIEF

THE DRAWBACKS OF UNIVERSAL PRE-K:

A Review of the Evidence

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Executive Summary

The Covid-19 crisis has dealt a substantial blow to the child-care industry and stymied the expansion of public prekindergarten. As America recovers, policymakers will have to make tough choices with limited budgets. Progressive politicians, including President Biden, have called for an unprecedented expansion of federal investment in early education, arguing that it would boost women's participation in the workforce and that the long-run academic benefits for children would yield economic dividends.

The first claim is well supported by existing research. The second does not withstand scrutiny. Although there are some frequently cited studies of early childhood interventions that have shown remarkably positive results, they were conducted based on interventions and in environments that bear little resemblance to the policy proposals currently on the table and hence have limited utility in informing contemporary debates.

Moreover, a deeper look at the most rigorous and representative research on the effects of early education for children provides more cause for alarm than optimism. Expanded child care likely benefits deeply disadvantaged students. For other students, these programs may have no impact, or have a negative effect on cognitive or noncognitive measures. These findings are consistent with—and likely partly explained by—recent advances in our understanding of neuroscience and child development. Studies suggest that many children exhibit higher levels of stress hormones—colloquially termed "toxic stress"—in child-care environments than they do at home, which could leave a lasting physical impact on their brain architecture.

In light of the troubling findings from social science and the scientific literature, policymakers should not directly invest in a model of child care that may harm many children. Rather, any additional investment in early education should come in the form of an expanded child tax credit, which can help families improve their children's home environments and which could also be directed to center-based child-care options at their discretion.

Introduction

Expanded public subsidies for child care and prekindergarten command solid bipartisan support. According to recent polling, two-thirds of Republicans and nearly nine out of 10 Democrats would like to see Congress increase federal investment in early education.[1] At the state level, public investment and student enrollment in prekindergarten increased at a faster rate in single-party-control Republican states than it did in Democratic states during the first half of the last decade.[2]

The child-care industry has been deeply affected by the coronavirus pandemic and attendant lockdowns. A report from the National Women's Law Center estimated that about one in five child-care workers lost their jobs between February and July 2020.[3] Major school districts, such as that of New York City, have halted their planned expansion of public pre-K.[4] Early education advocates have pressed Congress for more funding to see the sector through the crisis, arguing that without adequate federal support, "the damage to children could be lasting."[5]

Even before the pandemic, progressive politicians—including many of the Democratic presidential candidates—were calling for unprecedented expansions to federal investment in early education.[6] The Sanders-Biden "Unity Plan" called for federal grant assistance to guarantee that all families could afford licensed, center-based child care for children under the age of five, the provision of universal prekindergarten for all three- and four-year-old children, increased funding in order to enable all eligible children to attend Head Start and Early Head Start, as well as an increased child tax credit.[7] The Sanders campaign plan, upon which the Biden-Sanders proposal was largely based, was projected to cost $1.5 trillion over a decade.[8] When Biden tapped Connecticut education commissioner Miguel Cardona for secretary of education, he declared that Cardona would help "secure high-quality, universal pre-K for every three- and four-year-old in the country."[9]

Early-education advocates argue that this new spending would allow women to spend more time in the workforce and improve the academic and life trajectories of children. The economic literature on the first contention is fairly convincing and will not be scrutinized in this report.[10] The second contention, however, is more belied than supported by the research.

This issue brief analyzes the research on early education. First, it will present and contextualize the arguments made by early-education advocates and the research used to support those arguments. Then it will review other studies that are frequently elided or ignored but that are more relevant to contemporary policy debates. These studies present a consistent pattern: while early education *can* be a profound boon for deeply disadvantaged students, it can also set disadvantaged students further back and potentially do lasting harm to students born into middle-class families.

The Case for Early Education

Early-education advocates make bold claims, based on well-designed studies, for the transformative power of high-quality early childhood interventions. The First Five Years Fund, for example, claims: "Research shows that for every dollar invested in high-quality early childhood education, society gains up to $7.30 in economic returns over the long term."[11] When he was president, Barack Obama made a similar claim, arguing that for "[e]very dollar we put into high-quality early childhood education we get $7 back in reduced teen pregnancy, improved graduation rates, improved performance in school, reduced incarceration rates. The society as a whole does better."[12]

Rigorous evaluations of early education and prekindergarten programs show consistent and convincing evidence that it improves what advocates have termed "kindergarten readiness." Studies conducted in New Jersey,[13] Oklahoma,[14] Georgia,[15] Tennessee,[16] Boston,[17] and Chicago[18] found positive immediate effects on outcomes such as letter and word recognition, phonemic awareness, counting, and math knowledge. A skeptic could pick holes at some of these studies, pointing out that they do not always adequately control for selection effects (i.e., the outcomes may simply be an artifact of differences between families that choose to send their children to pre-K versus those that do not). Yet several of these studies were randomized control trials (RCTs), considered the gold standard in social science, comparing participants who applied to the program and were randomly accepted with those who applied and were randomly rejected.

Early-education skeptics could reasonably counter that "kindergarten readiness" is a poor, if not meaningless, metric. In education, short- and long-run outcomes do not always track; interventions may provide a short-run benefit and no effects in the long run, or no effects in the short run but positive effects in the long run.[19] Conservative critics of early education frequently cite the Head Start Impact Study—the largest RCT of an early-education intervention ever conducted—as evidence that federal involvement in early education "doesn't work" because although participants saw immediate boosts on a variety of metrics, those benefits quickly faded.[20] For those who participated in Head Start, "by the end of 3rd grade there were very few impacts found for either cohort. … The few impacts found did not show a clear pattern of favorable or unfavorable impacts for children."[21]

Third-grade impacts are not necessarily dispositive. It is plausible that a program could have null effects by elementary school but still yield positive results for later life outcomes. This has been documented in the case of the Perry Preschool Project, one of the most-cited RCTs examining the long-run effects of early education. Students who participated in the program saw a dramatic short-term boost in IQ scores at ages four and five. By age 10, the effect on IQ had faded to statistical insignificance.[22] The long-run benefits, however, were nonetheless striking. By age 27, participants were substantially more likely to have graduated high school or earned a GED (71% vs. 54%), females were less likely to be single parents (57% vs. 83%) and to have had an abortion (4% vs. 23%), and males were substantially more likely to earn more than $2,000 a month (42% vs. 6%). By age 40, participants were also substantially less likely to have been incarcerated (28% vs. 52%) and to have been arrested for violent crimes (32% vs. 48%) or drug dealing (7% vs. 25%).

The Abecedarian Project, which formed the basis of the 7.3-to-1 return on investment claim made by the First Five Years Fund, found that participants were more likely to obtain a bachelor's degree (23% vs. 6%) and more likely to find full-time employment by age 30 (75% vs. 53%) and were six times less likely to have spent extended time on public assistance.[23] Researchers also found substantial health benefits for Abecedarian participants. Studies of the Chicago Child-Parent Centers found that participants were more likely to graduate high school (80% vs. 73%), less likely to have been incarcerated (21% vs. 26%) by age 23, and less likely to suffer from depressive symptoms in their early twenties (13% vs. 17%).[24]

Perhaps the most remarkable findings were produced last year when Nobel Prize–winning economist James Heckman examined the effects of participation in the Perry Preschool Project on the *children* of participants and found that they were substantially less likely to have ever been suspended from school, addicted to drugs, or arrested (40% vs. 60%) and were more likely to be employed (58% to 37%).[25]

Despite these striking findings from carefully designed studies, when the *Washington Post* evaluated President Obama's claim about early education's long-term benefits, it gave him "Two Pinocchios."[26] That's because, the *Post* fact-checker noted, none of the studies mentioned above "fit directly with [President Obama's] proposal, on a national scale." Both the Abecedarian and Perry Preschool studies were conducted in a single-site program with highly trained staff. Abecedarian served kids from birth to age five, operating for 10 hours a day, five days a week, 50 weeks a year, for a total of 2,500 hours; the project is estimated to have cost $90,000 per pupil. The Perry Preschool Project served 58 low-income, high-risk African-American children with IQs ranging from 70 to 85 with two years of five-day-a-week preschool plus an hour and a half per week in home visits to coach parents. The Chicago Child-Parent Center program was larger in scale, serving about 2,000 students for two years of pre-K, a kindergarten program, and ongoing support interventions provided to children in first through third grades; it also referred families to community and social-services agencies, provided home visits, and required two and a half hours of parental involvement every week in in-school or at-home activities.[27]

Center-based child care and publicly provided pre-K, as currently configured and as would be expanded through large-scale federal investment, do not resemble these programs in terms of the population that they would serve or in the way they are designed. The argument made by early-education advocates, thus, could be not unjustly characterized as: "We have strong evidence that small, intensively resourced programs serving deeply disadvantaged students yielded strong benefits; therefore, we *know* that large-scale, less resourced, differently designed programs serving all students will also yield strong benefits." For this reason, reviewing the literature on early education and the claims made on its behalf, the Brookings Institution's Russ Whitehurst has argued that early-education advocates "use statistics as a drunken man uses lampposts, for support rather than illumination."[28]

These studies do tell us two very important things. First, they provide strong evidence that early childhood interventions can have dramatic, lasting, and even intergenerational effects. Second, as the study of the Perry Preschool Project by Heckman suggests, these long-term outcomes may be largely mediated by the effects of early education on character and behavior, rather than on academics. Heckman notes: "The Perry program substantially improved Externalizing Behaviors (aggressive, antisocial, and rule-breaking behaviors), which, in turn, improved a number of labor market outcomes, health behaviors, and [reduced] criminal activities."[29]

To assess the likely consequences of increased public subsidy of early education, we should look to studies that are more representative of the programs that would be expanded and pay special attention to their effects on noncognitive outcomes, especially behavior. The next three sections will cover studies matching the domains that the Biden-Sanders Unity Plan intends to subsidize: child care (for ages from birth to three), Head Start (for three- and four-year-olds), and prekindergarten (primarily for four-year-olds). I will then discuss the policy implications of these findings.

Center-Based Child Care

The largest and most representative study conducted on American child care is the National Institute of Child Health and Human Development's Study of Early Child Care and Youth Development (SECCYD), launched in the early 1990s.[30] Based on an ethnically and demographically diverse sample of more than 1,000 children who spent an average of 27 hours a week in non-maternal care over the first four and a half years of their life, SECCYD examined differential outcomes associated with types of non-maternal care (e.g., in-home child care provided by nonfamily members and center-based child care), as well the quality of those arrangements and the quantity of time that kids spent in them. The study did not have an experimental design, and hence cannot tell us whether child-care arrangements *caused* observed outcomes but only that they are *associated* with them. But policymakers ought to be aware of these associations, many of which track the findings of more rigorous studies.

When it comes to center-based child care, SECCYD provides both good and bad news. On the positive side of the ledger, children six months and older who had more experience in center-based child care demonstrated slightly improved cognitive and language development through age three and slightly better pre-academic skills at age four and a half. On the negative side, participation in center-based care was linked to an increased incidence of ear infections, upper-respiratory illness, and stomach illness during the first three years of life, as well as more problem behaviors (especially disobedience and aggression) at age four and a half.

Researchers found "weak and slight" positive associations between the quality of child care[31] and improved cognitive function and language development in the first three years of life as well as greater literacy and numeracy at age four and a half. They found no association between the number of hours per week spent in child care and cognitive or language skills.

Greater time spent in child care was, however, associated with worse behavioral outcomes: children who spent more time in child care were rated as less cooperative, more disobedient, and more aggressive at age four and a half and in kindergarten. Reflecting on the study, one of its authors, Jay Belsky, later emphasized that "the problem behavior associated with early, extensive, and continuous care emerged irrespective of whether quality of care was good or bad."[32] The association was

substantial; in terms of effect sizes, the effect associated with early and extensive child care was comparable with that of growing up in poverty.

A follow-up study found that these associations persisted into adolescence. Researchers found positive associations with higher-quality child care and cognitive and academic measures. The link between greater hours spent in child care and greater problem behaviors, i.e., higher levels of risk-taking and impulsivity, also persisted until age 15.[33]

Belsky cautioned that despite the "prodigious" efforts made by SECCYD's authors to control for factors that affect child development, the study was still substantially limited in terms of causal inference, and he pointed to recent evaluations of the Quebec Family Policy as having greater causal power as well as greater policy relevance to the question of the effects of *expanding* child care.

International Studies

Perhaps the most rigorous and most policy-relevant studies on the expansion of publicly subsidized child care were conducted on the Quebec Family Policy. In the late 1990s, Quebec launched a program that offered $5-a-day child care, which increased the share of 0–4-year-olds in child care by 14 percentage points, relative to the rest of Canada. This sharp policy shift provided researchers the opportunity to perform a quasi-experimental, difference-in-difference analysis of the effects of child care. Although these studies were not as robust as a randomized control trial, there is strong reason to suppose that the impacts observed were causal. The authors described the results as "striking in their consistent indication of a substantial negative impact of universal child care on children in two-parent families."

Researchers found that child care caused an increase in hyperactivity, anxiety, and aggression, as well as a deterioration in motor and social development. They also found substantially negative effects on health, including an estimated increase of 156%–394% in the likelihood of children suffering from a nose/throat infection. Researchers also found strong evidence of "worse parenting" after the new policy was put into place. They documented a significant rise in "hostile/ineffective parenting," as well as a rise in "aversive parenting." They also found a 2.8-percentage-point reduction in the likelihood that a child's father rates himself as in excellent health and "striking evidence of an increase in depression" among mothers. What's more, they found a significant deterioration in the reported quality of the relationship between parents. Based on all this, the researchers concluded that "the consistency of the results suggest that more access to child care is bad for these children (and, at least along some dimensions, for these parents)."[34]

A 2015 follow-up study found that "the negative impact of the Quebec program on the noncognitive outcomes of young children appears to persist and grow as they reach school ages." Among children who participated, the effect on anxiety more than doubled when they reached the ages of five to nine, and the effect on aggression increased by 50%. During those ages, participants experience an increase in hyperactivity and a deterioration in their relationships with their teachers, according to parent reports. Following participants into their teen years, the researchers found "strong indications of a worsening of both health and life satisfaction among those older youths exposed to the Quebec child-care program." They also found that, especially for men, "exposure to the Quebec program leads to higher rates of crime."[35]

A 2016 study found a silver lining: for children of single-parent households, the impact of "child-care access is positive at nearly every percentile and is particularly large for individuals at the very bottom of the distribution." The researchers reflected that their findings were consistent with the hypothesis that child care can help children whose "preexisting home environment was extremely poor. As a whole, this suggests that while formal child care is not a perfect substitute for home learning environments, given the large number of hours spent in child-care centers, it may provide a remedy for children from the most disadvantaged home environments."[36]

Despite these positive findings for children in single-parent households, researchers in Italy found dramatic negative effects in a sample of students born into two-parent families that earned, on average, about twice the median national income. They found that one month's participation in child care between birth and the age of two corresponded to a loss of about 0.5 IQ points when children were eight to 14 years old. The researchers also examined noncognitive (personality) effects of child

care and found that participation reduced "openness" by 8% and "agreeableness" by 6.8%, while increasing "neuroticism" by 5.1%. Further stratifying their sample between more and less affluent families, researchers found that the IQ and personality effects were muted among students from less affluent families but particularly pronounced among students from more affluent families.[37]

Other international studies have produced findings that are broadly consistent with the pattern thus far demonstrated: some positive outcomes for disadvantaged children, negative outcomes for advantaged children, and negative outcomes for children who spend a greater number of hours in child-care arrangements.

A study of public child-care programs in Germany, serving children from birth to age two, found that participation "enable[d] disadvantaged children to catch up with their peers," when it came to motor-skill development, social and emotional regulation, and language development, but also concluded that the effects of expanding the program were "disappointing" in part because it "harm[ed] the language skill development of children from more-educated families."[38]

A study of the effects of child care on disadvantaged students in Chile found positive and negative effects. Researchers found positive outcomes on measures of motor skills and personal expression skills but negative outcomes on memory, reasoning, and "potentially severe negative incremental effects on child-adult interactions." The researchers expressed particular alarm regarding the findings on child-adult interaction, noting that it "may potentially undermine the benefits of center-based care," given that "research in psychology shows that child-adult interactions significantly influence many other tasks in early childhood and later years; chief among them are cognitive, language, emotional, and social behavior skills."[39]

A study of early childhood interventions in Denmark found no difference in outcomes between home care and center-based preschool for three-year-olds. It also found that an increase in hours spent in both family day care and center-based care "leads to significantly poorer child outcomes" when children are seven years old.[40]

Studies of Child-Care Subsidies in the U.S.

The research discussed thus far suggests that expanded child-care subsidies would be beneficial only for children in low-income and single-parent households, while harming those from middle-class, two-parent families. However, another line of research conducted by Arizona State University's Chris Herbst suggests that even the former group may not benefit as much as might be hoped. Reasonable questions regarding the power of causal inference of the following studies could be raised, but they represent some of the most rigorous attempts to date to control for the effects of child-care subsidies.

In a 2010 paper, coauthored with Erdal Tekin, Herbst analyzed the effects of child-care subsidies (available only to those making less than 85% of a state's median income) in single-parent households and concluded: "By encouraging low-income mothers to work and by creating incentives to shift children into formal child-care settings, subsidies place children in environments where the average child is more likely to be overweight and obese." Children in center-based care were 9.9 percentage points more likely to be overweight and 6.0 percentage points more likely to be obese.[41] In 2011, Herbst and Tekin replicated their results by using distance from social-services center as an "instrumental variable." They demonstrated that families that lived farther from social-services centers were less likely to access subsidized child care, and they used that variation in distance to trace the causal effect of child-care subsidies on children's weight, reaching similar findings.[42]

Using the same empirical approach, Herbst and Tekin later found negative impacts on cognitive ability and teacher-reported behavioral measures in kindergarten, although the effects began to fade after first grade and ceased to be statistically significant by the end of fifth grade.[43]

Utilizing several nationally representative surveys, Herbst and Tekin found negative effects of child-care subsidies on mothers' physical and mental health, finding that "subsidized mothers are less likely to report being healthy overall, are more likely to exhibit symptoms consistent with anxiety and depression, and score higher on measures of parenting stress." They were also more likely "to utilize psychological and physical aggression toward their children, and are more likely to utilize spanking as a disciplinary tool." Notably, the negative effects were strongest for low-income single mothers, for whom "the

estimated effect of … spending is nearly twice as large as that from the full sample and eight times larger than that from the high income sample." The researchers concluded that "public policies aimed at increasing the employment of low-skilled mothers may undermine their health and have negative implications for the parent-child relationship."[44]

Herbst has also conducted a study to attempt to identify the causal impact of child care by utilizing the summer "dip" in participation as a plausibly exogenous variable.[45] When Herbst analyzed the data in a manner similar to the way SECCYD did—by matching participants and nonparticipants by their demographic data—he found a similar result to that of SECCYD: a short-term increase in measures of mental ability. When using the summer "dip" in participation in an instrumental-variables analysis, however, Herbst found that ability test scores were about 9% lower for children in child-care settings and that "contrary to previous research, the negative effects are driven by participation in formal care … [and] disadvantaged children do not benefit from exposure to non-parental settings."

The only other paper that has used an instrumental-variables approach to attempt to isolate the causal impact of child care was published in 2011. Isolating changes induced by the 1996 Welfare Reform Act and examining only low-income single mothers, it estimated that a year of child care reduced cognitive test scores by 2.1%. The study found "clear evidence that child care has a more negative effect if the mother is more educated."[46] Researchers found that the negative effects were isolated to informal child care; formal, center-based child care had no effects on children, either positive or negative.

The Effects of Head Start

As noted above, the largest randomized control trial study of an early childhood intervention was the Head Start Impact study, which showed no differences in outcome when measured in third grade. Early-education advocates, however, point to several longitudinal studies demonstrating positive long-run outcomes, perhaps the most notable of which is a 2009 paper by Harvard University professor David Deming. Deming compared children who participated in Head Start with their siblings who did not.[47] Although this approach has the virtue of controlling far more precisely for students' backgrounds than demographic matching, Russ Whitehurst of the Brookings Institution has pointed out that even this method may be subject to systematic bias, because the decision to send one child but not another to Head Start is not made randomly by parents. Rather, he argued, it seems likely that the parents chose to send only one child "precisely because there were differences in the children that the parents recognized, e.g., one seemed ready for pre-K and the other not."[48]

Deming's study tracked a cohort of students born between 1970 and 1986, most of whom attended Head Start between 1984 and 1990. Consistent with the Head Start Impact study, Deming found substantial immediate gains on standardized tests that largely—though not entirely—faded out by the time students reached the ages of 11–14. He noted that the fadeout effect was strongest for African-American and disadvantaged students. Those groups, however, saw the largest gains in long-term outcomes. Head Start participants saw a reduced likelihood of grade repetition, a decreased likelihood of being diagnosed with a learning disability, an increased rate of high school graduation, a decreased rate of reported idleness, and improved physical health. Deming summarized that the improvements represented a gain of "one-third of the size of the outcome gap between the bottom quartile and the median … and is about 80 percent as large as the gains from the Perry Preschool and Carolina Abecedarian model preschool programs."[49]

A 2019 working paper coauthored by one of Deming's students replicated and extended his analysis, tracking the same cohort of students over an additional decade and analyzing the outcomes of students born between 1986 and 1996.[50] Analyzing Deming's cohort over a longer time period erased the gains that Deming observed on high school graduation and idleness. While gains in health, college attendance, and years of education persisted, Deming's cohort saw no boost in college graduation or in earnings. The later cohort of students, born between 1986 and 1996, by contrast, saw largely negative effects from Head Start. They were more likely to be diagnosed with a learning disability, more likely to exhibit behavioral problems in school, more likely to commit crimes, more likely to have children as teenagers, less likely to attend college, and more likely to be idle.

Pre-K

There are three studies of scaled-up pre-K programs—of the sort that would be expanded through additional federal investment—that measure outcomes through elementary school. The results are mixed.

New Jersey's Abbott Preschool Program provides free pre-K for three- and four-year-olds for all students in 35 of the state's lowest-income school districts. It serves approximately 43,000 students, a little less than half within traditional public schools and a little more than half in licensed private centers or at Head Start centers. It operates on a traditional public school schedule: six hours a day, 180 days a year for one or two years. Researchers found substantial short-run benefits and were able to follow two-thirds of their sample into the fifth grade, matching them based on demographic characteristics to their kindergarten classmates who did not attend an Abbott Preschool. Students who attended Abbott for one or two years scored higher than their counterparts in fifth grade on measures of literacy and mathematics and were less likely to be assigned to special education or held back a grade.

Researchers have also examined Georgia's universal pre-K program, which serves about 84,000 children across the state in public schools, at licensed private centers, and with Head Start center partners, operating for 6.5 hours a day, 180 days a year. Researchers intend to follow these students through fifth grade, comparing them with demographically similar students who did not participate. At this point, only results through the end of second grade are available. The researchers have thus far concluded that "children who attended Georgia's pre-K exhibited a general pattern of initial gains for most skills from pre-K through kindergarten or into first grade, followed by increasing declines in scores through second grade." This pattern contributed to an overall null effect, as the researchers noted that participants' scores were near or slightly below the average when they entered Georgia's pre-K program and, after seeing an initial boost, fell back to within that same range by the end of second grade.[51]

Tennessee's voluntary pre-K (VPK) program serves about 18,000 low-income children in nearly 1,000 classrooms, all managed directly by traditional public school districts. Unlike those of New Jersey and Georgia, Tennessee's pre-K program was studied via randomized control trial, providing us with stronger evidence of causality.[52] Consistent with much of the literature, participants saw immediate academic gains. Those gains, however, had mostly faded by the end of first grade. When participants reached third grade, the researchers compared their scores on standardized state tests with those of their nonparticipating peers. VPK students performed substantially worse on science and math. The behavior of VPK students also proved to be worse than their nonparticipating peers; they were more likely to be disciplined for less serious infractions, such as breaking school rules, as well as more serious infractions, such as fighting. VPK students were also more likely to be diagnosed with disabilities, including speech/language impairment and intellectual disabilities.

Discussion of Findings and Policy Implications

The most representative and rigorous research on early childhood interventions does not suggest that additional investment would yield great benefits. Indeed, it provides good reason to believe that the opposite is true: additional investment may come at a substantial cost to the next generation.

The Quebec Family Policy provides the closest analogue to what we might expect if America were to make a similar commitment to universal child care. For children in two-parent households, the results were rather grim: deterioration in parenting practices, deterioration in children's behavior, and long-term harm to their health and life satisfaction. Studies from Italy and Germany provide further grounds to fear that child care harms children from two-parent, middle-class families, especially those from more advantaged backgrounds. These findings are consistent with research on the effects of first-year maternal employment, which finds decreases in achievement and deterioration in behavior for children from two-parent middle- and upper-class families.[53] These results argue strongly, if not decisively, against a universal child-care subsidy if our primary consideration is the well-being of the next generation.

Reasonable minds could reach different conclusions on the likely effects of further subsidizing child care on children from disadvantaged families. Results from Canada and Germany suggest that child care *can* improve outcomes for disadvantaged children and children from single-parent households. Results from Chile, however, were more equivocal. And studies attempting to assess the causal impact of child-care subsidies in America have yielded troubling findings of increased childhood obesity, deteriorating parenting skills, and negative cognitive effects.

Early-education advocates may look at these data and argue that it's evidence that we need to invest in *quality* child-care programs. They may be right, but only up to a point. SECCYD did find that higher-quality child care was associated with improved outcomes. However, as one of its authors noted, the study "never found that the quality of care accounted for … quantity-of-care effects. In other words, the problem behavior associated with early, extensive, and continuous care emerged irrespective of whether quality of care was good or bad."[54] Results from Denmark and Canada reached similar findings regarding negative effects of extensive child care. This suggests that child-care policies that foster "high-quality" programs intended to enable low-income and single parents to work full-time may harm disadvantaged children.

Findings from studies of Head Start and of public pre-K provide further grounds to fear that expanding early education would do more harm than good for disadvantaged students. The best study we have of Head Start's most recent participants suggests that it substantially harmed them. This is not necessarily inconsistent with previous results showing positive long-term outcomes. It may be the case that whereas Head Start provided a boost to children relative to their home settings in the 1970s and 1980s, it no longer was doing so by the 1990s. Child poverty has decreased substantially since the early 1990s, even as Head Start has expanded to serve a substantially larger share of disadvantaged students. It is quite plausible, therefore, that Head Start is currently producing effects similar to, or even worse than, those found in the most recent study.[55]

The randomized control trial of the Tennessee pre-K program provides further grounds to fear that expanding pre-K will harm disadvantaged students. Early-education advocates have attempted to salvage the reputation of Tennessee's pre-K program[56] by pointing to a follow-up study that found that pre-K participants who had consistently high-quality K–3 classrooms showed improvements over their peers.[57] But unless early-education advocates purport to possess the means to simultaneously increase the quality of elementary school across the board, the practical implication of this finding suggests that the effect of pre-K on students who had typical elementary school experiences was even worse than the study's top-line findings displayed. The findings of James Heckman—that long-term effects of early education appear to be primarily driven by its influence on character and behavior—provide reason to fear that the Tennessee program, which resulted in increased behavior problems, and others like it are doing lasting harm.

These results may be dismaying, but they should not be deeply surprising. Despite the fact that his name and work are consistently invoked by advocates for universal early education, Heckman has said, "I have never supported universal pre-school. … The 'intervention' that a loving, resourceful family gives to its children has huge benefits that, unfortunately, have never been measured well. Public preschool programs can *potentially* compensate for the home environments of disadvantaged children"[58] (emphasis in original).

Advances in our understanding of child development and neuroscience may offer an explanation for the mixed but broadly negative pattern of findings. Harvard University's Center on the Developing Child has pointed out that "strong, frequent, or prolonged activation of the body's stress management system," colloquially labeled "toxic stress," in infants and toddlers without healthy mediation by a caregiver can lead to "damaged, weakened bodily systems and brain architecture, with lifelong repercussions."[59]

Scientists have found that child care increases the production and changes the diurnal pattern of cortisol, a key stress hormone. Typically, cortisol production in young children declines throughout the course of a day, but studies have documented that many children in child-care settings experience a rise in cortisol from the morning to the afternoon.[60] One study found that increased cortisol reached a threshold sufficient to be qualified as a "stress response" in 40% of children, regardless of the quality of child care (as traditionally measured), and that elevated cortisol levels were associated with anxious/vigilant behavior in girls and angry/aggressive behavior in boys.[61]

A literature review on the subject found that "the effect of daycare attendance on cortisol excretion was especially notable for children younger than 36 months."[62] Another study examined the interaction between children's family backgrounds and hours spent in child care, concluding that for "children from low-risk contexts, greater weekly hours in child care were predictive of higher cortisol levels. In contrast, for children facing several cumulative risk factors, greater hours in child care per week were predictive of lower cortisol levels."[63] Based on their findings, those researchers concluded that "links between child care and children's development may differ as a function of children's broader ecologies."

Another way of saying that, and explaining the literature as a whole, is that the quality of children's early environments matter; healthier environments help children reach their potential, and less healthy environments stymie their development—potentially permanently. There is not necessarily any inconsistency in the mixed pattern of findings described in this paper, e.g., the positive findings from the Perry Preschool Project, the mixed findings on Head Start, and the negative findings from the Italian child-care study. For the most deeply disadvantaged students, highly resourced, high-quality early-education programs can provide an environment healthier than what is available at home, which can produce benefits lasting even into the next generation. But for other students, spending time in a child-care setting rather than the home could do lasting cognitive and noncognitive damage. The negative findings from the Tennessee pre-K study and the study of the long-term effects of Head Start students from the early 1990s warn us that for the median disadvantaged student today, center-based child care and prekindergarten may be a less healthy environment for child development than their home.

While the well-being of children should be a primary consideration, workforce participation is undoubtedly a factor in the child-care debate as well. Early-education advocates are entirely correct to argue that additional early-education spending would boost women's participation in the workforce. Alleviating the need for parents to take time off work to care for their children would also boost their career prospects, or, at the very least, ameliorate a disadvantage vis-à-vis their other colleagues. But whatever child-rearing arrangements and attendant trade-offs parents should choose, policymakers should not put their thumb on the scale of favoring workforce considerations over the welfare of young children.

Policymakers should not allocate additional taxpayer dollars to programs that may harm children. The most prudent course of action, based on the research, would certainly not be to provide universal child care and early-education subsidies, or even to expand means-tested programs, but rather to scale down the number of students who are served by publicly subsidized early education and focus existing resources more intensively on the most disadvantaged children.

However prudent, this would most certainly not be a politically palatable approach. Given the broad bipartisan support for expanding federal investment in early education, a proposal to scale back and concentrate early-education subsidies would be a nonstarter in Congress. If politicians are intent on additional expenditures to support children, they should come in the form of a direct subsidy to parents. There is no shortage of studies suggesting that direct redistribution, such as the earned income-tax credit, has positive effects for children. Rather than allocate taxpayer dollars to programs that may harm children, policymakers should expand the federal child tax credit or even consider further direct financial subsidies for parents. Parents could then, at their discretion, use those resources to subsidize early education or to improve the conditions that their children live in at home.

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