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Head Start and Families' Recovery From Economic Recession: Policy Recommendations for COVID-19

Objective: This article examines whether the availability of Head Start during the Great Recession mitigated the impact of this crisis on poverty rates among families with young children.

Background: The first 2 decades of the 21st century have witnessed two major economic crises: the Great Recession and the COVID-19 pandemic. Poverty rates among families with young children grew substantially during the Great Recession. Families with young children are also more vulnerable to instability during the COVID-19 pandemic because job losses have been steeper and childcare availability has been significantly curtailed. Programs such as Head Start that support at-risk families may mitigate such negative consequences.

Method: This study used data from the American Community Survey from 2006 through 2016 and state-level data on Head Start availability from Program Information Reports. Growth curve modeling was used to examine how the availability of Head Start predicted poverty growth during the Great Recession and the speed of recovery post-recession.

Results: States with higher rates of Head Start enrollment had a smaller increase in family poverty during the Great Recession and a more stable recovery than states with lower Head Start enrollment.

Conclusions: These findings suggest that greater access to Head Start programs prevented many families from falling into poverty and helped others exit poverty during the Great Recession.

Implications: The findings provide clear, evidence-based policy recommendations. Increased federal funding for Head Start is needed to support families during a COVID-19 recession. States should supplement these allocations to expand Head Start enrollment for all eligible families.

The COVID-19 pandemic is the greatest challenge the world has faced this millennium. Millions have been infected with the virus, and hundreds of thousands have died (World Health Organization, 2020). Beyond these unprecedented health consequences, the pandemic has upended national economies and had a dramatic impact on daily life. In the United States, high rates of virus transmission have coincided with one of the fastest and most severe economic downturns in history as businesses closed or reduced operations across the

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country. In a period of only 3 weeks beginning in March 2020, more than 16 million people filed unemployment insurance claims, a rate of more than double the number of claims made during the peak 2 years of the Great Recession of 2007–2009 (Cohen & Hsu, 2020). Recent trends have shown sustained levels of high unemployment well into the third quarter of 2020, with many projections forecasting the onset of a long-lasting global recession (Fernandes, 2020; McKibbin & Fernando, 2020). Not only are many families facing extreme economic precarity, but school and childcare closings during the pandemic have removed major sources of support on which families rely. These challenging conditions require effective policy solutions to support families and advance economic recovery following the pandemic.

In this study, we provide research to generate evidence-based policy recommendations focused on how to support families during and after the COVID-19 related recession. To do this, we seek lessons from the last economic recession to examine how state variation in families' access to Head Start was associated with economic recovery following the 2007–2009 Great Recession. Head Start is a means-tested school readiness program that offers free childcare and comprehensive family support services for eligible children in families with incomes below established thresholds. In times of economic recession, programs like Head Start may provide a vital resource for families who lack childcare support as they seek employment or return to work, yet the availability of Head Start varies widely depending on families' state of residence. Community agencies have discretion in allocating federal funds and state governments may or may not supplement funding to expand Head Start availability and services (Barnett & Friedman-Krauss, 2016). Consequently, there are stark differences in rates of access to Head Start enrollment between states. Leveraging this variation, we measure whether family poverty rates increased less and recovered faster in states with higher Head Start enrollment during the 2007–2009 recession.

CHILDCARE AND FAMILY SUPPORT IN THE UNITED STATES

The U.S. government plays a much smaller role in childcare provision compared with the governments of many European nations

(Collins, 2019). In the absence of public support, most families must turn to the market, relatives, friends, and sometimes all three to provide care. Others reduce their employment or leave the labor force when faced with expensive childcare costs before children start public school at ages 5 or 6 years (Ruppanner et al., 2019).

Labor force exits due to childcare are more common among mothers than fathers because mothers commonly remain primarily responsible for the care of children (Scarborough et al., 2019). Recent research shows this is particularly true during the COVID-19 pandemic, as the increased caregiving demands associated with childcare center closures and homeschooling has led to mothers exiting the labor force at a rate nearly 3 times that of fathers (i.e., 32.1% vs. 12.1%, respectively; Heggeness & Fields, 2020; see also Landivar et al., 2020). This places working- and middle-class families in a double bind. Wage stagnation since the 1970s has meant that two incomes are increasingly necessary to fulfill the rising cost of basic needs (Wilmers, 2018). However, expensive and difficult to access childcare means that many families must choose between taking on a major monthly expense or substantially reducing their household income as one parent, usually the mother, stays home to provide care from birth to school age (Landivar, 2017; Ruppanner, 2020). Single-parent families are especially susceptible to poverty given these demands (Misra et al., 2007), which explains their overrepresentation below the poverty line (U.S. Census Bureau, 2018).

Although the U.S. lacks a comprehensive public childcare system, some programs do exist to support eligible families. These include Child Care and Development Block Grant (CCDBG) childcare subsidies, state-funded pre-K programs, and Head Start. CCDBG subsidies provide financial support for low-income families to pay for childcare to increase children's school readiness and allow parents to work or advance their educational and training qualifications. However, only a quarter of eligible families receive subsidies (U.S. Government Accountability Office, 2019), and these provisions rarely cover all childcare expenses: the average copayment for subsidy recipients is 7% of family income (U.S. Department of Health and Human Services, 2019). Some states fund pre-K programs, but only about a third of

4-year-olds and less than 10% of 3-year-olds are enrolled (Friedman-Krauss et al., 2020). Unlike CCDBG subsidies or Head Start, pre-K funding is not tied to sustaining federal sources. Consequently, six U.S. states currently offer no state-funded pre-K programs, whereas only nine states and the District of Columbia have fully or mostly universal pre-K programs (Parker et al., 2018).

Although CCDBG subsidies and state-funded pre-K provide major support to families, we focus on Head Start as the longest running and currently largest federally funded early childhood development program. Head Start is a categorical grant program administered by the Office of Head Start in the Department of Health and Human Services. Federal grants, sometimes combined with supplemental state funding, are allocated to local agencies administering Head Start programs in each state. Head Start programs serve children under age 3 through Early Head Start, and preschool centers focus on children ages 3 and 4. Enrollment is free for eligible children who must be age 5 or under, live in a family with income below the poverty line, receive other types of income-based public assistance, be homeless, or be in foster care (Hofferth, 1994; Office of Head Start, 2019). Head Start focuses on school readiness, but it also provides a range of other family support services related to housing, health and well-being, financial security, and continuing education (Office of Head Start, 2019). As a result, Head Start offers a more comprehensive system of support for families in need than CCDBG subsidies or pre-K programs. Annually serving nearly one million children, Head Start operates in all 50 states and the District of Columbia (Barnett & Friedman-Krauss, 2016). With an established infrastructure, a holistic focus on families experiencing economic hardship, and regular budget allocation from the U.S. Congress, Head Start constitutes a potentially effective program to support families through periods of economic recession.

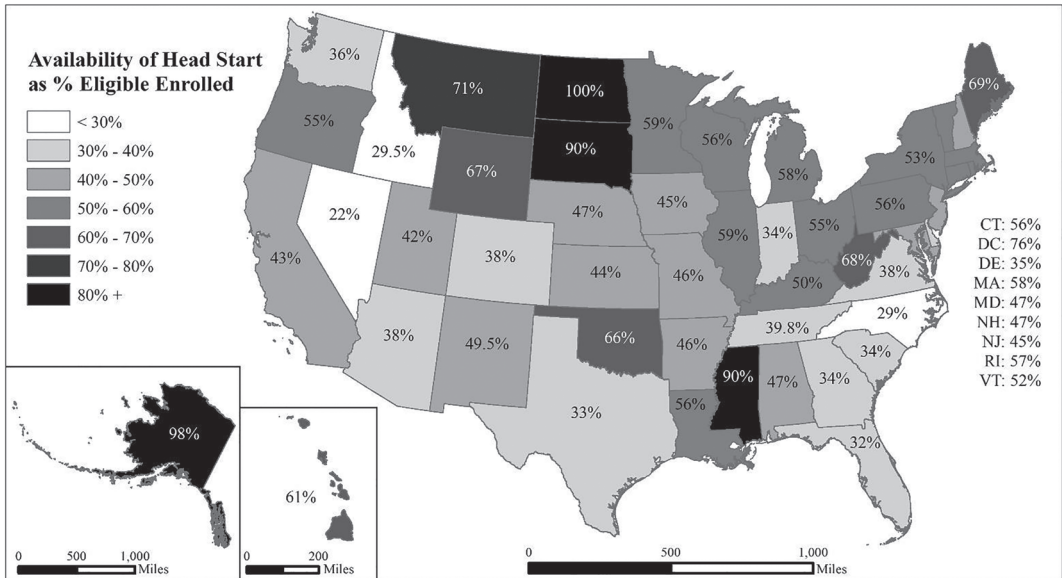
Despite being the largest federally funded childhood development program, Head Start funding is not highly responsive to changes in demand. Consequently, a significant share of eligible families remain without a slot due to limited funding. Nationally, this means only 9% of 3-year-olds and 12% of 4-year-olds—or about 40% of all preschoolers living in families below the poverty line—are enrolled in Head

Start (Chaudry et al., 2017). Of course, families who cannot access Head Start for childcare likely turn to alternative options from friends, family, and the market. Federal funding for Head Start remains well below the established demand for these programs. Head Start funding is allocated federally, but states can bolster these funds, and community agencies have significant discretion in how they are used. Different states give primacy to enrollment, teacher salaries, or curricula. As a result, Head Start enrollment varies dramatically across states (Barnett & Friedman-Krauss, 2016). In North Dakota, for example, 100% of eligible families are enrolled in Head Start, whereas only 22% are enrolled in Nevada (see Figure 1). Variation in the availability of Head Start means that eligible families face different institutional constraints in accessing this federal provision depending on where they live. Families in places like Ohio (55% of eligible families enrolled) have far more access to free childcare through Head Start than those living in neighboring Indiana (34%).

These differences may be particularly consequential during times of economic recession. We conceptualize the relation between state differences and changes in economy through a capabilities perspective, which posits that institutional constraints limit an individual's autonomy and self-actualization (Sen, 1993; see also Hobson 2018). By theorizing individuals as embedded in institutional structures that both constrain and create opportunities (capabilities), we can understand larger demographic patterns including how state-to-state differences in access to Head Start may structure family economic recovery. Head Start is meant to improve capability by equalizing access to high-quality childcare to improve school readiness and close income-based educational gaps. When state provisions are insufficient to meet demand, parents who experience job loss in states with few available openings for Head Start enrollment may need to stay home to provide childcare. This represents a diminished capability bounded by an institutional constraint. This poses challenges for those seeking new employment and pushes vulnerable families further into poverty.

In the absence of childcare supports, those parents who lose their jobs may not only fall into poverty during a recession, but they may remain in poverty longer than those living in states where Head Start is more readily available. Consequently, states with lower enrollment in

Figure 1. AVAILABILITY OF HEAD START IN 2009–2011 BY STATE.



Note. Source: Head Start program information reports, years 2009–2011.

Head Start may experience longer and more sustained economic recessions. By contrast, states with more accessible Head Start programs may see quicker rebounds out of poverty for vulnerable families, which we conceptualize as a capabilities-enhancing institutional context for parents. Parents in states where eligible children may be readily enrolled in Head Start have more opportunity to obtain employment and will be less likely to be priced out of work due to expensive childcare. They are also less likely to leave a job because of childcare problems—a common cause of labor force exits (Mathur & McCloskey, 2014). Beyond childcare and childhood development, these families also receive other services through Head Start programs that support housing stability, children’s health and well-being, parents’ continuing education, and financial security. Considering these benefits, we theorize Head Start as a central institutional mechanism to alleviate challenges facing working families and, by extension, state economies.

HEAD START AND ECONOMIC WELL-BEING: EVIDENCE FROM THE GREAT RECESSION

To test capabilities arguments that programs such as Head Start may support families’ recovery from economic hardship, we explore the

relationship between Head Start availability and rates of family poverty from 2006 through 2016, which captures the period before, during, and after the 2007–2009 Great Recession. During the Great Recession, the federal government provided an additional \$2.1 billion in federal funding to increase Head Start enrollment through the American Recovery and Reinvestment Act of 2009 (Office of Head Start, 2010). More recently, the Coronavirus Aid, Relief, and Economic Security (CARES) Act provided \$750 million to Early Head Start and Head Start Programs (Administration for Children and Families, 2020). Thus, there is precedent for expanding federal funding and enrollment in Head Start during times of economic uncertainty. We explore whether Head Start was effective in buffering families from poverty by examining whether variation in its availability between states predicted growth in family poverty during the Great Recession as well as changes in rates of family poverty during the post-recession recovery years.

Our study speaks to a core theoretical argument from the capabilities perspective: governments are integral to alleviating institutional barriers to individual capabilities. Here, we argue that access to Head Start programs are integral to helping families out of poverty and,

as a result, accelerating economic recovery from periods of recession. We investigate one central research question: Did the state-level availability of Head Start at the height of the last economic recession influence both the rise of family poverty during the recession and its decline in the post-recession recovery years? Our expected relationships are hypothesized as follows:

H1: *Poverty Vulnerability*. States with a higher percentage of eligible children enrolled in Head Start will have less poverty growth during the Great Recession than states where Head Start was less accessible.

H2: *Economic Recovery*. States with a higher percentage of eligible children enrolled in Head Start will have quicker economic recoveries following the Great Recession than states where Head Start was less accessible.

METHOD

Data

We use data from the American Community Survey (ACS) for years 2006 through 2016 (Ruggles et al., 2020), spanning the period of time before, during, and after the Great Recession. The U.S. Census Bureau (2020) conducts the ongoing ACS and currently collects sociodemographic information from approximately 3.5 million households annually. It is the single most comprehensive source of information on the U.S. population. These data provide adequate sampling of the United States to support robust state-to-state comparisons for detailed groups. In the absence of an existing dataset of families enrolled in Head Start over an extended period of time and across all U.S. states, the ACS constitutes the highest quality data to address our research questions.

Here, we include families with children under the age of 5 years because they are in most need of childcare and development support. This resulted in a sample of 1,540,486 families across 50 states and Washington, D.C. (between 132,000 and 146,000 families per year). With this sample of families, we constructed a panel of state-years, which we used to analyze the relationship between state-level Head Start enrollment and poverty rates for families with young children. Our data consist of 51 states (including Washington, D.C.) across 11 years for a total sample of 561 state-years.

Analytic Approach

We use growth-curve models to examine how changes in the poverty rate for families with young children from 2006 through 2016 vary between states as a function of Head Start enrollment. Growth-curve analysis is ideal for testing the effects of state-level childcare support on long-term rates of family poverty because this approach specifically focuses on differences between units in trajectories of change over time, here, changes in the trajectory of family poverty rates (Raudenbush & Bryk, 2002). In our application, we predict the state-year poverty rate for families with young children using a regression model that allows trends to vary by state:

$$y_{ts} = \beta_1 + \beta_2 w_{ts} + \beta_3 w_{ts}^2 + \gamma_{1s} + \gamma_{2s} w_{ts} + \gamma_{3s} w_{ts}^2 + \epsilon_{ts}, \quad (1)$$

where y_{ts} is the state-year percentage of families with young children whose total income in the survey year is below the federal poverty line, as determined by the U.S. Department of Health and Human Services (2020). This outcome is modeled as a function of yearly change from 2006 through 2016, w_{ts} , and year-squared, w_{ts}^2 to account for nonlinearity in these patterns. Together, these terms describe the rise in family poverty during the recession (w_{ts}) and its subsequent decline during the period of post-recession economic recovery (w_{ts}^2). Capturing between-state differences, γ_{1s} represents state-variation in the intercept predicting baseline differences between states in family poverty rates. Differences in trajectories are represented by γ_{2s} and γ_{3s} , which predict state variation in poverty trends over time. By specifying trend coefficients to vary, we focus our attention on differences between states to the extent that family poverty rates changed between 2006 and 2016.

To test our hypothesis related to the protective effects of Head Start, we added an interaction between the trend terms in Equation 1 and a variable measuring the percentage of eligible children enrolled in Head Start around the height of the recession in 2009.

$$y_{ts} = \beta_1 + \beta_2 w_{ts} + \beta_3 w_{ts}^2 + \beta_4 H_s + \beta_5 H_s w_{ts} + \beta_6 H_s w_{ts}^2 + \gamma_{1s} + \gamma_{2s} w_{ts} + \gamma_{3s} w_{ts}^2 + \epsilon_{ts}, \quad (2)$$

where H_s measures the percentage of eligible 3- and 4-year-olds enrolled in Head Start for each state averaged between 2009 and 2011. Data for this measure are from the Head Start Program Information Reports compiled by diversitydatakids.org (2019) at the Heller School for Social Policy and Management at Brandeis University. We focus on Head Start enrollment during the years 2009 through 2011 because most recession indicators reached their peak in these years. Unemployment, for example, peaked at 10% in October 2009 and remained above 9% through September 2011 (U.S. Bureau of Labor Statistics, 2020a). Examining the role of Head Start enrollment during these years allows us to specifically examine whether this family support program mitigated against an increase in poverty. Interacting Head Start availability with both year and year-squared, we are able to test whether levels of Head Start enrollment were associated with slower growth in family poverty rates during the recession (year, $\beta_5 H_s w_{ts}$), as well as its relationship to rates of recovery post-recession (year-squared, $H_s w_{ts}^2$).

We also include a number of control variables in our models. First, to account for additional programs serving families' childcare needs, we control for the percentage of eligible families receiving CCDBG subsidies and the percentage of 3- and 4-year-olds enrolled in state-funded pre-K. We use average rates of subsidy receipt and pre-K enrollment from 2009 through 2011 to correspond to our measure of Head Start enrollment and account for potential spuriousness. Data on subsidy receipt were obtained from the U.S. Department of Health and Human Services (2014) and data on pre-K enrollment come from the National Institute for Early Education Research (Barnett et al., 2011).

Interactions between these two covariates with year and year-squared were conducted but are not included in our results because they were nonsignificant and did not alter substantive findings related to our hypotheses. Controlling for variation in the degree to which states were affected by the recession, our models also include controls for baseline rates of unemployment in 2006, as well as change in unemployment rates from the beginning of the recession in 2007 to the end in 2009. Four additional covariates account for state socioeconomic characteristics. The share of workers employed in manufacturing, one of the hardest hit industries in the recession, is used to control

for industry conditions within each state across years of data. Immigrant density is measured as the percentage of the state population that is foreign born. Racial composition is measured as the percentage of residents who are White. Average levels of human capital are controlled for with the share of state residents with a college degree.

Although Equations 1 and 2 include varying intercepts and slopes that account for some unobserved heterogeneity between states, the effects of Head Start on poverty trajectories could be confounded by additional, unobserved state-level characteristics. To account for this, we apply Equation 2 to a counterfactual sample of families without young children ($n = 18,896,158$). Although Head Start may indirectly benefit families without young children by supporting state economies as a whole, the effects should be less pronounced for these families than those with young children who more directly benefit from Head Start childcare provisions. Testing for these differences allows us to identify whether the observed relationship between Head Start and poverty trajectories are spurious because unobserved confounders would apply equally to families with young children and those without, whereas the primary mechanism of childcare and child development provisions provided by Head Start should be felt the most among families with young children.

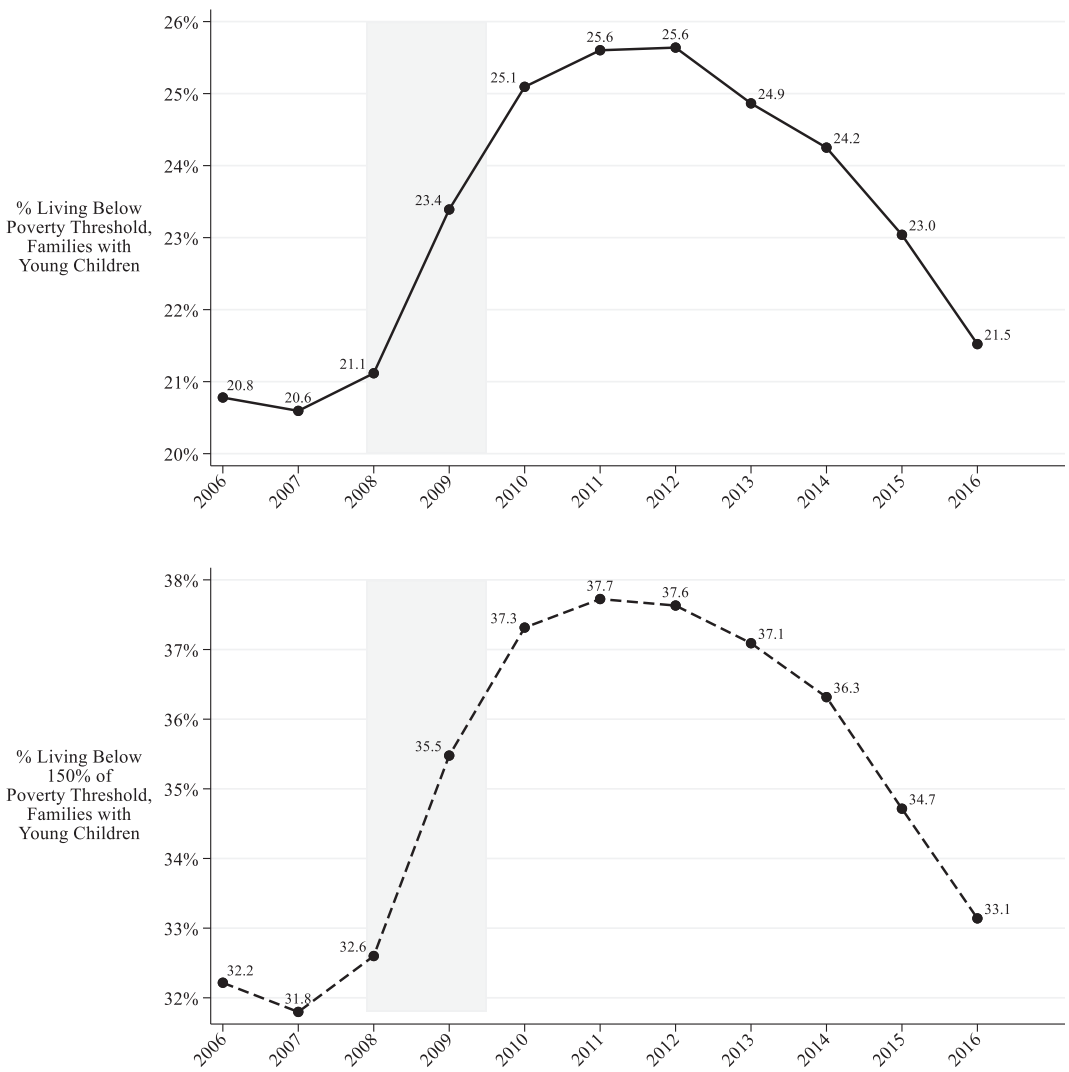
We present our results in two sections. First, we report descriptive trends in Head Start enrollment and state-level poverty rates for families with young children from 2006 through 2016. Second, we present the results of our growth curve models designed to test the relationship of Head Start enrollment to changes in family poverty rates.

RESULTS

Descriptives

Family poverty rates rose during and immediately after the recession. National trends illustrated in Figure 2 (top panel) indicate that about 21% of families with young children were living below the federal poverty line in 2006. In 2009, this number increased to 23.4%, and continued to grow until 2011, when it peaked at 25.6% and remained steady through 2012. At its worst, more than one quarter of U.S. families with

Figure 2. FAMILIES WITH YOUNG CHILDREN IN POVERTY.



Note. Top panel: Families living below the poverty threshold. Bottom panel: Families living below 150% of the poverty threshold. Shaded area represents recession period from December 2007 through June 2009. Only families with at least one child under age 5 are included. Source: American Community Survey, 2006 through 2016.

young children were living in poverty. Since 2012, however, there has been a steady decline in the rate of poverty for families with young children. By 2016, 21.5% of families were in poverty, slightly higher than the pre-recession share.

National trends in rates of family poverty remain consistent when using a higher poverty threshold: families living below 150% of the federal poverty line (Figure 2, bottom panel). Again,

there was an increase in families living in or on the brink of poverty during the recession years, continuing through 2011 and 2012 when nearly 38% of families with young children were living below 150% of the poverty threshold. Following 2012, the share of families living below 150% of the poverty line fell through 2016. Henceforth, we direct our focus to the rate of families living below the poverty line, but all analyses were also conducted using a threshold of 150% of

the poverty line, and substantive findings remain consistent.

Changes in family poverty rates from 2006 through 2016 varied widely between states. As illustrated in Figure 3, nearly all states experienced an increase in family poverty during the recession years. However, the extent of that increase, and the rate of subsequent recovery, differed from state to state. Oklahoma, for example, had a slight increase in family poverty followed by a precipitous decline. Nevada, in contrast, had a major increase in family poverty during the recession—a change that it had yet to fully recover from in 2016, when family poverty rates remained higher than they were in pre-recession years. Colorado, meanwhile, witnessed growth in family poverty during the recession, but by 2016, it had lower rates of poverty than it had in 2006.

Descriptive trends illustrated in Figures 2 and 3 highlight both the tremendous consequences of the Great Recession on family poverty and the variation in these effects across states. Considering the role that childcare support plays in families' economic participation and the variation in the extent to which programs like Head Start are available across states, it is possible that the accessibility of Head Start during the recession years played a role in shaping how severely the recession influenced rates of family poverty. To test this relationship, we now turn to the results of the growth curve models.

Head Start Enrollment and Family Poverty Trends

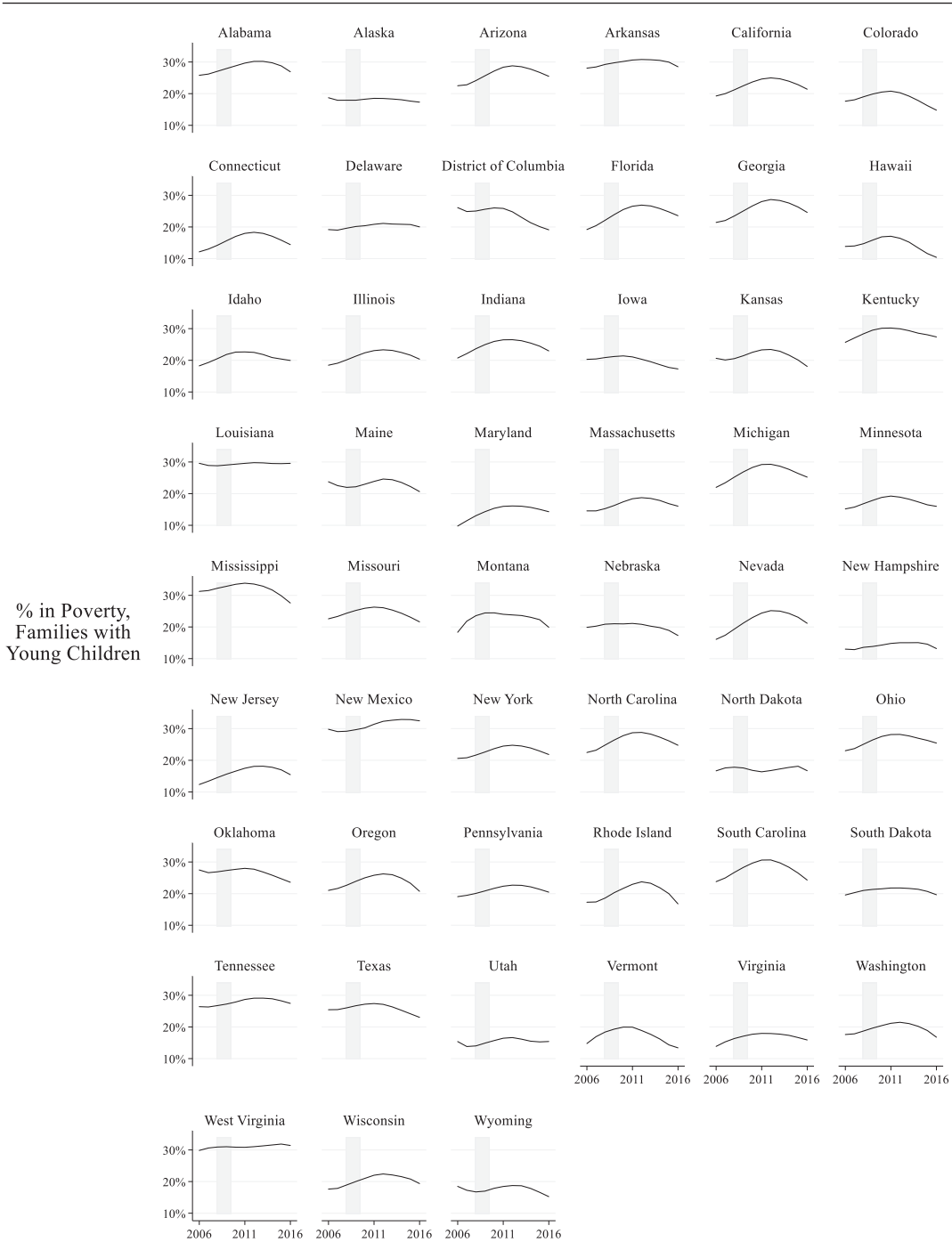
Table 1 reports the results of four models examining baseline trajectories of family poverty across states (Model 1), main effects of Head Start availability during years of peak economic hardship from 2009 through 2011 (Model 2), whether state trajectories in rates of family poverty were conditional upon Head Start enrollment (Model 3), and a counterfactual model using a sample of families without young children (Model 4). Focusing first on the baseline model, we find that the trend effects represented by the positive coefficient for year and the negative coefficient for year-squared capture an upside-down U-shaped trajectory of growing rates of family poverty through the recession (year, $p < .001$), followed by declines in the post-recession years of economic

recovery (year-squared, $p < .001$). Among covariates, we find that the percentage of eligible families receiving CCDBG subsidies is unrelated to levels of family poverty, whereas greater state-funded pre-K enrollment is associated with higher levels of state poverty ($p < .01$). This likely reflects the limited coverage of CCDBG subsidies and the tendency for states with higher rates of poverty to fund pre-K programs.

Model 1 also reports that states with high unemployment before the recession in 2006 had higher rates of family poverty ($p < .05$). Severity of the recession, measured through the rise of unemployment between 2007 and 2009, was a nonsignificant predictor of family poverty after accounting for covariates. Two sociodemographic characteristics, the share of states' population that are foreign-born ($p < .01$) and that are college-educated ($p < .001$), were associated with lower rates of family poverty. These relationships are consistent with research showing that immigration and human capital are a boon to local economies (Ager & Brückner, 2013; Krueger & Lindahl, 2001). States' racial composition and the size of manufacturing sectors were unrelated to rates of family poverty.

The second model in Table 1 adds the percentage of 3- and 4-year olds enrolled in Head Start from 2009 through 2011. The main effects presented in Model 2 examine whether Head Start accessibility is associated with overall levels of family poverty, but they do not provide insight on whether Head Start influences change in poverty rates over time (tested in Model 3). The main effects of Head Start accessibility are nonsignificant. Consistent with previous research (Chaudry et al., 2017), this indicates that Head Start does not scale up to meet changes in the number of eligible families who live in poverty, leaving many families underserved. Yet the third model in Table 1 shows that Head Start enrollment has significant effects on how poverty rates changed from 2006 through 2016. The negative coefficient for the interaction of Head Start availability and year ($p < .001$) indicates that states with a higher percentage of eligible children enrolled in Head Start experienced less growth in family poverty during and immediately after the recession, lending support for our first hypothesis. Head Start also moderated year-squared ($p < .01$), such that states with greater availability of Head Start were more

Figure 3. FAMILY POVERTY RATES BY STATE.



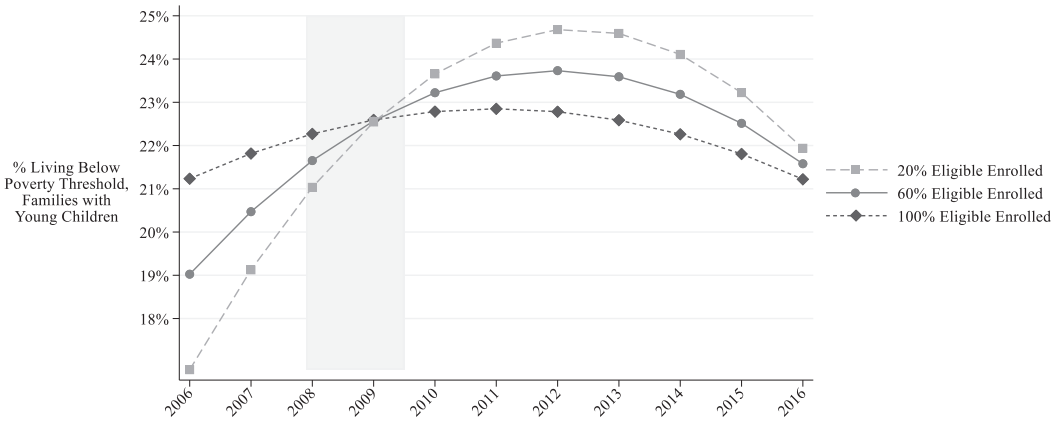
Notes: Running-mean smoothing used to highlight longitudinal trends. Shaded areas represent recession period from December 2007 through June 2009.
Source: American Community Survey, 2006–2016.

Table 1. Growth Curve Models Predicting Poverty Rates for Families With Young Children, 2006–2016

	Baseline	Main effects	Trajectories by head start access	Counter-factual sample	Models 3 and 4 coefficients significantly differ (.05 level)?
	1	2	3	4	
<i>Poverty trajectories</i>					
Year	20.56*** (1.39)	20.56*** (1.39)	34.40*** (3.91)	16.37*** (2.12)	Yes
Year-squared	–1.46*** (0.11)	–1.46*** (0.11)	–2.33*** (0.31)	–1.08*** (0.15)	Yes
Head Start access					
% eligible enrolled in Head Start during peak recession		0.01 (0.19)	0.80** (0.25)	0.90*** (0.21)	No
Poverty trajectories by Head Start access					
Year * % eligible enrolled in Head Start during peak recession			–0.27*** (0.07)	–0.17*** (0.04)	Yes
Year-squared * % eligible enrolled in Head Start during peak recession			0.02** (0.01)	0.01*** (0.00)	No
Controls					
% eligible families receiving CCDBG subsidies	–0.48 (1.02)	–0.47 (1.02)	–0.47 (1.03)	0.55 (0.71)	No
% 3- and 4-year-olds in state-funded pre-K	0.95** (0.32)	0.95** (0.32)	0.94** (0.32)	0.76** (0.24)	No
Baseline unemployment rate (2006)	13.52* (5.63)	13.48* (5.65)	13.99* (5.74)	3.47 (3.55)	Yes
Severity of recession (change in unemployment 2007–2009)	6.54 (4.65)	6.58 (4.46)	6.61 (4.57)	4.95 (3.24)	No
% employed in manufacturing	–1.00 (2.07)	–0.99 (2.12)	–1.25 (2.12)	1.05 (1.06)	No
% foreign born	–2.56** (0.87)	–2.56** (0.88)	–2.46** (0.88)	–1.76** (0.63)	No
% with college degree	–4.49*** (0.42)	–4.49*** (0.42)	–4.51*** (0.42)	–1.53*** (0.47)	Yes
% White	–0.59 (0.40)	–0.59 (0.41)	–0.51 (0.39)	–0.67** (0.22)	No
Constant	274.23*** (43.28)	273.86*** (43.58)	225.32*** (43.70)	193.33*** (32.83)	
Varying components (SD)					
Year	5.44	5.44	2.91	2.96***	
Year-squared	0.37***	0.37***	0.22***	0.21***	
Constant	26.87*	26.84*	23.15**	20.01***	
N, state-years	561	561	561	561	

Note. Dependent variable is the percent of families in poverty. Standard errors clustered by state, reported in parentheses. All standard errors and coefficients are multiplied by 10 to simplify presentation. CCDBG = Child Care and Development Block Grant. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4. PREDICTED FAMILY POVERTY RATES BY HEAD START AVAILABILITY.



Note. Shaded area represents recession period from December 2007–June 2009.

resilient to major fluctuations in rates of family poverty. In other words, states where Head Start was more accessible had flatter curves (smaller recession-related increases in family poverty).

The last model presented in Table 1 uses a counterfactual sample of families without young children as a robustness test of our key findings. Model 4 provides results for the counterfactual sample, and the last column in Table 1 reports whether coefficients in Model 3 (focal sample of families with young children) and Model 4 (counterfactual sample of families without young children) are significantly different. The counterfactual model substantiates our key findings. The significant difference between Models 3 and 4 for the interaction of year and Head Start accessibility indicates that Head Start had a larger mitigating effect against poverty growth for families with young children than for those without young children. Although Head Start slowed poverty growth for all families ($p < .001$), its effect was significantly stronger for those who stood to benefit directly from the program. These patterns are consistent with previous research showing that social policies to improve parental well-being also improve well-being among the general population, if only to a smaller extent compared with those who have children (Flavin et al., 2014; Glass et al., 2016). Our findings suggest that by directly serving vulnerable families to mitigate against poverty, Head Start also enhances states' economic stability more generally.

Visualizing the Effect of Head Start Enrollment on Family Poverty

Overall, our results reported in Table 1 show that states with higher levels of Head Start enrollment experienced less poverty growth among families with young children during the Great Recession. These trends are illustrated in Figure 4, which shows predicted rates of family poverty from 2006 through 2016 for states where 20%, 60%, and 100% of eligible children were enrolled in Head Start, calculated from Model 3. These percentages capture approximate data points in our sample. For example, 22% of all eligible children in Nevada, 60% in Illinois, and 100% in North Dakota are enrolled in the respective states' Head Start programs. Despite starting out with higher rates of poverty among families with young children in 2006, states with higher Head Start enrollment of eligible children did not experience as rapid an increase in family poverty up to 2012. In fact, by 2009, there was practically no difference in family poverty rates between high, medium, and low Head Start enrollment states, but by 2012, states with low Head Start enrollment (20% of eligible enrolled) had family poverty rates nearly 1 percentage point higher than states where enrollment was at 60%, and nearly 2 percentage points higher than states with 100% of eligible children enrolled in Head Start. Although family poverty declined across all states during the post-recession period, by 2016, low Head Start enrollment states were still predicted to have higher levels of family

poverty than high-enrollment states—a change from 2009 when rates of family poverty did not stratify by Head Start enrollment. This means Head Start enrollment played a key role in states' recoveries post-recession, providing clear evidence for its importance in dealing with the economic fallout resulting from COVID-19 and lending support for our second hypothesis.

Figure 5 plots family poverty rates by year for two illustrative pairs of states to provide comparative cases that highlight the overall trends displayed in Table 1 and Figure 4. State pairs were selected for similarity in initial or post-recession economic conditions, size, and proximity. The first set, Alabama and Mississippi (Figure 5, top panel), are bordering states in the South where poverty rates are among the highest in the nation. Both states have low pre-K and CCDBG enrollment, but Head Start enrollment was almost twice as high in Mississippi (90% of eligible enrolled) as Alabama (47%) from 2009 to 2011. These differences in Head Start enrollment coincided with distinct trends in the family poverty rate between 2006 and 2016. Before the recession, the rate of family poverty was about 6 percentage points higher in Mississippi than Alabama. By the end of the recession, this gap had fallen to 3.5 percentage points, as family poverty in Alabama rose at a faster rate than in Mississippi. Additionally, although rates of family poverty in Mississippi began to decline after 2011, they continued to rise in Alabama for an additional 2 years until peaking in 2013. Both Alabama and Mississippi had major declines in family poverty after 2013, but the trend was steeper in Mississippi, resulting in these two states having nearly the same family poverty rate by 2016. In light of the findings from Table 1, there is strong evidence that convergence in rates of family poverty between Mississippi and Alabama are due in part to the greater availability of Head Start in Mississippi during the years of 2009 through 2011 when many families faced severe economic consequences from the Great Recession.

Whereas Alabama and Mississippi converged in family poverty rates, we observed divergence between Arkansas and Oklahoma (Figure 5b). These bordering states are similar in size and economic conditions. Oklahoma, however, has one of the most comprehensive preschool programs in the nation, with 66% of eligible children enrolled in Head Start and over 70% of 4-year-olds enrolled in state-funded

pre-K programs (pre-K is not offered for 3-year-olds in Oklahoma). Arkansas, in comparison, enrolled 46% of eligible children in Head Start and around 40% of 4-year-olds and 10% of 3-year-olds in state-funded pre-K.

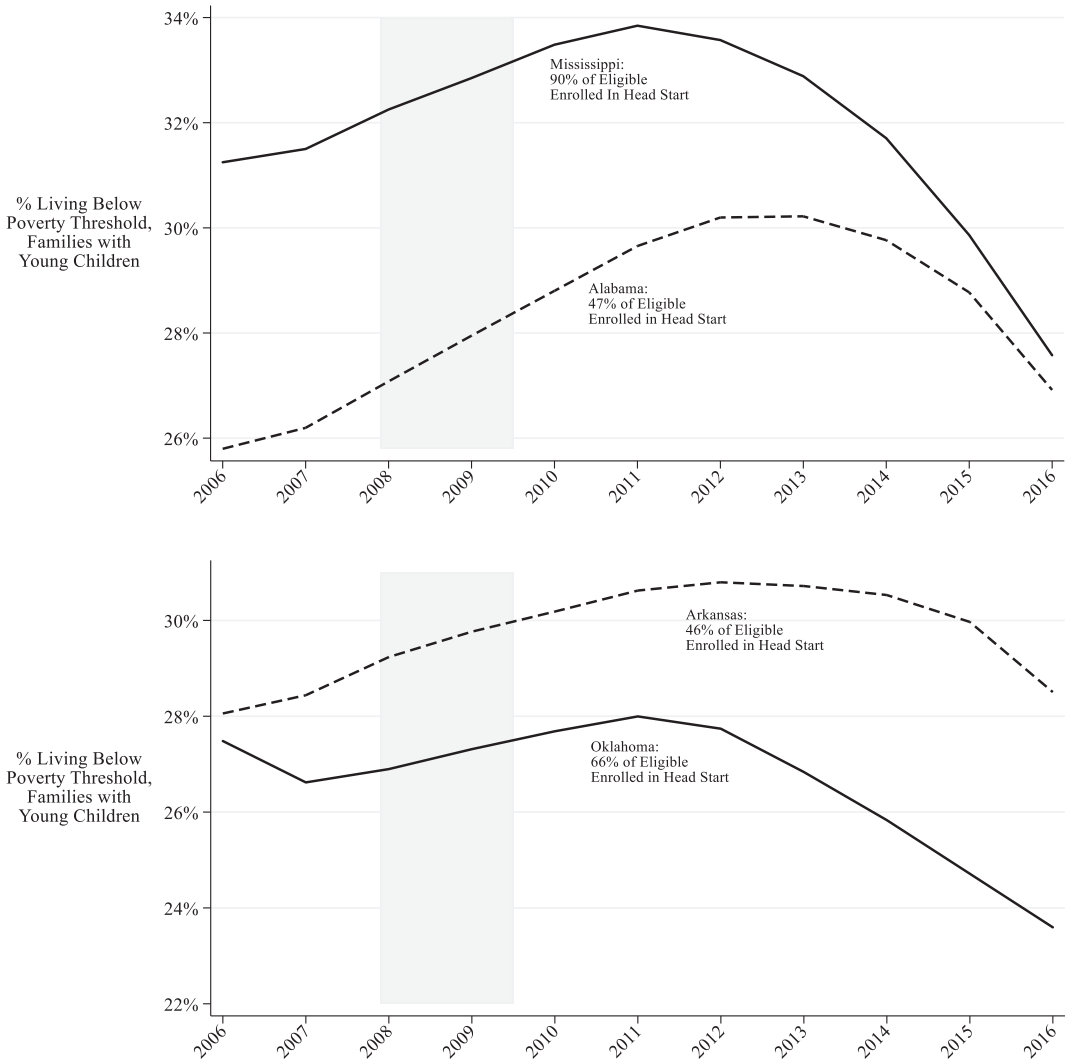
As illustrated in Figure 5 (bottom panel), Oklahoma's robust childcare infrastructure appears to have mitigated against the worst consequences of the Great Recession, which had a greater impact in neighboring Arkansas. Before the recession, family poverty rates were similar in Arkansas (28.5%) and Oklahoma (27.7%). The recession years contributed to an increase in family poverty in both states, but this growth was much more pronounced in Arkansas, where family poverty rose 2.5 percentage points from 2007 to 2011, compared with 1.3 percentage points during this same period in Oklahoma. Although rates of family poverty began to decline steadily in Oklahoma following 2012, this downward trend did not start until a year later in Arkansas and was less pronounced. As a result, family poverty rates in 2016 were more than 4 percentage points lower in Oklahoma than in Arkansas, despite these states having similar rates in 2006. Although Oklahoma's extensive state-funded pre-K programs may have provided further support to families, findings from our growth curve models (Table 1), which controlled for pre-K enrollment, suggest that highly accessible Head Start programs played a key role in supporting families through the Great Recession.

Collectively, our results point to one main conclusion: States with more accessible Head Start programs were better able to weather the economic hardships of the recession and experienced a more stable recovery. This result is robust to counterfactual tests and was visibly illustrated in the exemplary cases of Alabama, Mississippi, Arkansas, and Oklahoma. These findings suggest that access to childcare and family support services through Head Start prevented many families from falling into poverty and helped others climb out of it.

DISCUSSION

Our results provide strong evidence that Head Start should be an integral component of state and federal plans for economic recovery following a recession. States where Head Start was more accessible experienced a smaller increase in family poverty during and after the

Figure 5. ILLUSTRATIVE CASES: ALABAMA, MISSISSIPPI, ARKANSAS, AND OKLAHOMA.



Note. Top panel: Convergence in family poverty rates. Bottom panel: Divergence in family poverty rates. Running-mean smoothing is used to highlight longitudinal trends. Shaded areas represent the recession period from December 2007 through June 2009. Paired states selected for similarity in initial or postrecession economic conditions, size, and proximity. Source: American Community Survey, 2006–2016; Head Start Program Information Reports, years 2009–2011.

2007–2009 economic recession. Applying a capabilities perspective, our findings suggest that economically vulnerable families residing in states with limited openings for Head Start enrollment faced greater challenges and were more likely to fall into poverty. In contrast, families residing in states with greater opportunity to enroll in Head Start received crucial support through periods of economic hardship.

Head Start’s free childcare and development programs offer a reliable, high-quality, and no-cost alternative to expensive market-based childcare.

Our findings echo extant qualitative research showing that low-income parents rely heavily on early childhood programs like Head Start. Without them, parents are often forced into unreliable, costly alternatives that can absorb a

disproportionate share of wages and increase the likelihood of labor force exit (Newman, 2001; Scott et al., 2005). In addition, Head Start's family services can provide vital aid during periods of acute crisis, as well as longer term support through adult educational and job training programs. In 2011, Head Start assisted 143,000 families with housing through subsidies or support with utilities and repairs. In that same year, nearly 300,000 Head Start families participated in adult education and training (Office of Head Start, 2011). In many ways, Head Start provides crucial assistance to families who are the most vulnerable during periods of economic recession.

States fared better during the last recession when Head Start was more widely available. As the United States has entered into a COVID-19 economic recession (National Bureau of Economic Research, 2020), it is crucial that we learn lessons from the past and implement plans for economic recovery, including stimulus packages that prioritize funding for Head Start and family support more broadly. Such provisions are not only family-friendly policy, but they are also key to economic recovery.

On March 25, 2020, the U.S. Congress passed the CARES Act as the first COVID-19 relief package. Of the \$2 trillion allocated in the bill, Head Start received \$750 million to support children whose families have been affected by COVID-19, or less than one-third of 1% of the total funding allocation. These funds are not sustained through future years and constitute only a small portion of Head Start's \$10.6 billion annual budget. Consequently, they are unlikely to result in significantly expanded enrollment of Head Start, which our research shows plays an important role in keeping families out of poverty. One promising sign is that the CARES Act did include \$3.5 billion for the CCDBG to support families' childcare needs. States are given flexibility as to whether these funds are used to keep childcare providers in business after periods of closure or to subsidize childcare costs for families.

The total stimulus funding of \$4.25 billion for Head Start and CCDBG is vital to maintain the country's childcare infrastructure, but it may not be sufficient. Before the pandemic, only 11% of families who were eligible for childcare subsidies through the CCDBG received this support (U.S. Government Accountability Office, 2016). Although stimulus funds may

increase the number of subsidies available, demand will almost certainly surge during the COVID-19 recession. Head Start accessibility is comparatively higher than CCDBG subsidy accessibility, but with fewer than half of all eligible children enrolled nationwide (Schmit & Walker, 2016), demand far exceeded the supply of Head Start spaces before the COVID-19 pandemic and will likely get worse in the immediate future.

CONCLUSION

Our findings suggest that increased funding to expand Head Start enrollment will be a highly effective use of stimulus funds. There is precedent for expanding federal support for Head Start. At the end of the Great Recession, the American Recovery and Reinvestment Act of 2009 allocated an additional \$2.1 billion to expand Head Start services. Although we cannot disentangle how the additional Head Start spots created by these funds were distributed across states, our findings suggest that states with higher enrollment had fewer families fall into poverty and swifter recoveries. It is likely that the increased federal contribution at that time helped keep many families out of poverty. As we enter the beginning of a COVID-19-related recession, it is crucial that the federal government make similar investments now.

Ensuring that low-income families have accessible childcare and family assistance through Head Start will give them vital support for the difficult economic times ahead. At a minimum, all states need to enroll 100% of eligible children without further restricting eligibility standards relative to the national guidelines. Studies suggest that it would cost an additional \$14.4 billion to reach this goal (Barnett & Friedman-Krauss, 2016). Although this would more than double current Head Start expenditures, this amount is negligible compared with the annual increases the federal government has devoted to other types of spending. In addition, the United States ranks third to last among OECD nations in funding for early childhood education and care, devoting around 0.4% of GDP to these programs (Organisation for Economic Co-operation and Development, 2019). Sweden, in contrast, spends 1.8% of GDP on early childhood education and care. Spending on these programs exceeds 1.3% of GDP in France

and 0.6% of GDP in the United Kingdom. Reallocating funds to support early childhood education and care in the United States will help mitigate against rising family poverty rates and enhance economic recovery following the recession.

Limitations

Our findings highlight the benefits of Head Start as a public form of childcare. There are, however, two important limitations to consider. First, because we were interested in how Head Start availability during the height of economic crisis related to changes in family poverty, we used growth curve models that compared shifts in poverty rates between states with varying Head Start enrollment during the peak of the Great Recession. We did not explore whether changes to states' Head Start enrollment from year to year related to concurrent changes in poverty. Future research may investigate these dynamics to uncover whether family poverty rates are responsive to changing levels of Head Start availability across periods taking place outside of economic crises. Second, we focus on the Great Recession because it is a recent economic crisis. There are important differences between that crisis and the COVID-19 recession, however. Whereas the Great Recession disproportionately affected those employed in the male-dominated manufacturing sector, present trends indicate that the economic effects of COVID-19 are mostly felt in service industries that comprise majority women workers (U.S. Bureau of Labor Statistics, 2012, 2020b). We believe that these differences make the benefits of Head Start even more consequential because women shoulder a greater share of childcare responsibilities and have more to gain from state childcare and development supports.

Implications

As states and the federal government respond to the COVID-19 economic recession, our findings provide strong evidence that increasing financial investments in Head Start would prevent families from falling into poverty and support economic recovery. Drawing lessons from the last recession, we show that states with higher Head Start enrollment during the Great Recession had fewer families in poverty and a more stable recovery. As Congress debates stimulus

packages and plans for recovery, evidence-based lessons from the country's past are vital: The federal government should invest in programs proven to support families. By providing childcare, development programs, and comprehensive family services, Head Start fills a crucial need for vulnerable families, particularly during periods of economic hardship.

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