

**Is Universal Preschool More Resilient to Budget Cuts than Targeted?
Evidence from the Great Recession**

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Abstract

Political theories of policy targeting and universalism have long extolled the universal approach. By serving more, and more advantaged, participants, universal programs are assumed to garner a greater share of public resources and resist budget cuts more effectively than targeted programs. Here, we test these assumptions with evidence from public preschool. Using quantitative description and interrupted time series analyses, we find no evidence to support these claims. In fact, we find that targeted programs spend more per child than universal programs, on average, between 2002 and 2011. Furthermore, we find that that targeted and universal programs are similarly resilient to budget cuts in the context of the Great Recession. We interpret these results in light of recent empirical evidence on public opinion and existing theories of bureaucratic protection and path dependence.

“When the first Reagan administration discussed cuts in [Social Security], it faced immediate public resistance and soon backed down...*Targeted* public assistance programs for low-income people accounted for less than 18 percent of federal social spending, yet took the brunt of the first Reagan administration's efforts to cut domestic spending. Impoverished mothers and children saw their benefits cut, but the elderly clients of social insurance, including those who would otherwise have been poor, preserved their improved economic standing” (Skocpol 1991b, p. 30; emphasis ours).

1. Introduction

Scholars have long argued, at least from a political perspective, that universal public programs trump targeted ones: by benefitting a larger sector of the electorate, they secure a broader base of support, which can then be used to garner more public resources and resist budget cuts during periods of economic crisis (Skocpol, 1991a, 1991b). Indeed, even when the goal is to help the poor, universal programs are often thought of as preferable to income-targeted approaches because of their presumably greater level of political support (Gelbach & Pritchett, 2002; Skocpol, 1991a, 1991b; Wilson, 1991). The view that universal programs are more resilient is widespread—even among those who prefer targeted or mixed approaches: “[no] one doubts that universal programs have broader, stronger constituencies,” and these constituencies virtually ensure programmatic prosperity (Greenstein, 1991a, p. 35).

The argument that universal programs are politically preferable to targeted ones has penetrated the ongoing debate over public preschool policy. While some economists, including Nobel Prize winner James Heckman, have argued that targeting is more efficient and more equitable than universalism, advocates of the universal approach have turned to political economy arguments to build their case. Specifically, they argue that a universal approach will increase political longevity, especially for programs serving children from low-income families (Barnett, Brown, & Shore, 2004; Barnett, 2011; Zigler, Gilliam, & Jones, 2006). While the targeted versus universal debates remain heated on several fronts (Bushouse, 2009; Rose, 2012; Zigler, Gilliam, & Barnett, 2011; Zigler et al., 2006), neither side questions common assumptions regarding the greater popularity and durability of universal programs.

New evidence suggests these assumptions may be unfounded, however. Greenberg (2014) conducts two nationally representative public opinion polls and finds equivalent support for targeted and universal preschool. If the electorate does not substantially favor a universal approach, then this approach may not be as politically robust as its proponents claim. Further, in the absence of substantial political support, federal, state, and local governments seeking to move

from the current landscape of predominantly targeted preschool to a world of universalism may find themselves limited in both resource allocation and program quality (De Blasio, 2013; Obama, 2013, 2014).

With the twin goals of informing public preschool policy and theories about the political economy of policymaking, this paper tests the two main claims discussed above: first, that universal programs are able to secure more public resources; and second, that they prove more resilient to budget cuts during financial crises than targeted programs. We begin by focusing on state-level per-child expenditures on public preschool from 2002 through 2011. Specifically, we examine whether there are differences in the level of spending between the two approaches after accounting for a host of variables that are correlated with resource allocation and program approach. We also examine case studies of states that had both targeted and universal programs in a given year, and states that transitioned from targeted to universal provision during our panel, to assess within-state differences in the amount devoted to each approach. Finally, to assess the claim that universal programs are more robust to fiscal crises, we look at the effect of the Great Recession on state-level per-child preschool expenditures, comparing differences in spending between targeted and universal programs before and after the downturn.

In all, we find no evidence to support the claim that universal preschool programs secure more public resources or are more resilient to budget cuts. In fact, our analyses suggest that, if anything, the opposite is true. Targeted programs spend more per child, on average, over the period of interest. Differences in spending between targeted programs and newer universal programs (started after 2002) are particularly large and significant—roughly \$1,025 per child, or 23 percent of the average expenditure on targeted programs. Moreover, funding for targeted and universal programs appears to be similarly resilient in the context of the Great Recession. We interpret these results in light of recent empirical evidence on public opinion (E. H. Greenberg, 2014) and existing theories of bureaucratic protection and path dependence before discussing the implications of our findings for ongoing debates over targeted and universal preschool.

2. Literature Review and Theoretical Grounding

Considerations of policy targeting and universalism have focused on the political and economic trade-offs accompanying a broad base of beneficiaries (Gelbach & Pritchett, 2002; Greenstein, 1991a, 1991b; Skocpol, 1991a, 1991b). In sum, while universal programs accrue

higher total costs than targeted ones, they also serve a larger fraction of the electorate, generating widespread political support (cf. Converse, 1964; Krosnick, 1990). This political support, in turn, helps universal programs garner more resources and buffers them from cutbacks during economic downturns. Drawing on the median voter theorem (Downs, 1957) and multiple social contracts theory (Bénabou, 2000, 2004; Lind, 2005), Gelbach and Pritchett (2002) extend this argument, reasoning that the *nature* of program beneficiaries, not just the *number*, can influence political popularity. That is, by serving middle- and higher-income citizens, universal programs capture the loyalty of voters most likely to influence sophisticated policymakers and policymaking processes.

Even if the universal approach is popular among the electorate, however, it is not clear that voters prefer this approach over a targeted one, or that voter preferences *necessarily* dictate public policy and budgetary priorities. First, it may be that the benefits of universal program access are, in fact, outweighed by higher program costs, or that targeting better serves public values regarding redistribution (E. H. Greenberg, 2014; Lind, 2005). Further, those ineligible for targeted programs may not be interested in their services, or may be content to purchase substitutes on the private market. Second, it is unclear whether politicians accurately represent the preferences of the electorate (e.g., Abramowitz & Saunders, 2008; Kuklinski & Segura, 1995). Indeed, their failure to do so may explain Poterba's (1997) finding that states with a higher proportion of school-aged children do not spend more on education than states with lower proportions of children.

In addition to the electoral interplay between voters and policymakers, administrators seek to shape public programs—and may be just as influential as other actors. Theories of bureaucratic protection and capture contend that agencies will build regulatory barriers to shield themselves from political incursion (Carpenter, 2004; Wood & Waterman, 1994). Targeted programs have faced numerous political and economic challenges over relatively long tenures, and their administrators have become adept at self-preservation (Greenstein, 1991a, 1991b; Rose, 2012; Skocpol, 1991a, 1991b; Zigler & Muenchow, 1994; Zigler & Styfco, 2010). Universal programs, by contrast, are generally newer and less bureaucratically armored. Their administrators have largely relied on perceived support from the electorate instead of building bulwarks from within. As a result, path dependence and bureaucratic protection may combine to make targeted programs more politically resilient.

To date, scholarship on the targeted-universal preschool debates has focused on electoral and budgetary issues rather than theories of the bureaucracy. Kirp (2007), Fuller (2007), and Bushouse (2009) have investigated the special interest groups advocating for universal provision. Barnett (2004; 2011) and Zigler (2011, 2006) have become proponents of the universal approach, citing financial self-interest arguments offered by Skocpol (1991a, 1991b). Despite strong theoretical reasoning, researchers have not focused on empirical analyses of public opinion or program finance. However, one recent study suggests that Americans' preferences for targeted and universal preschool may depart from existing theory. Greenberg (2014) conducts two national public opinion polls and finds no preference for either approach, on average. Further, differences in support can be explained by program costs and egalitarian values: the threat of higher taxation decreases support for universal programs, while support for targeted programs is unaffected; values regarding equality of opportunity predict support for both forms of preschool, but they have a significantly stronger association with the targeted approach.

Taken together, empirical evidence on public opinion and theories of bureaucratic protection and path dependency allow for the possibility that universalism may not secure more public resources—or be more resilient to cutbacks during financial crises—than targeting. As federal, state, and local governments consider expanding public preschool, questions of political economy and program approach take on new importance. We address these questions directly, below.

3. The Current Study

Building on extant theory and empirical analyses, this study seeks to provide new evidence on the allocation of public resources for preschool. We focus on a subset of programs known as state pre-kindergarten, which constitutes the main form of public preschool outside of Head Start and has served the largest number of 3- and 4-year-old children since 2006. Importantly, state pre-kindergarten comes in both targeted and universal forms, with program approach selected by state governments.

Building on a description offered by the National Institute for Early Education Research (NIEER; Barnett, Carolan, Fitzgerald, & Squires, 2011), we define state pre-kindergarten programs as those that:

1. Are funded by a state as pre-kindergarten;

2. Are regulated by a state as pre-kindergarten; and
3. Provide some educational services—although we do not require direct provision by a state in order to qualify as state pre-kindergarten.

We then define *universal* programs as those with:

1. No eligibility criteria, excepting age and state residency; and
2. A legal mandate (under state law, administrative code, or constitutional provision) to provide access to all children whose families voluntarily choose to enroll them.

Programs not defined as universal are defined as targeted.

Using these definitions, we seek to answer two research questions of interest. First, we ask: how does per-child spending on targeted preschool compare to per-child spending on universal preschool? This question provides descriptive evidence on the relative economic robustness of each program approach. We examine per-child spending over a ten-year panel, from 2002 through 2011, using both graphs and econometric analyses to inform our conclusions. We complement these analyses with four case studies, two profiling states that had contemporaneous targeted and universal preschool programs (New York and Iowa), and two that transitioned from targeted to universal provision during our panel (Illinois and Massachusetts). These case studies provide additional insight on whether the spending patterns of targeted and universal programs differ *within* states.

Our second research question seeks to identify differences in the political economic robustness of targeted and universal preschool. Specifically, we ask: is universal preschool more resilient to budget cuts than targeted? To answer this question, we compare the differential effect of the 2008 financial crisis on targeted and universal per-child preschool expenditures, net of secular changes in spending over time and pre-existing differences within states. We conclude by considering findings from both research questions in light of political economic theory and new evidence on public preferences for targeted and universal preschool.

4. Data

We use several sources to construct a decade-long panel of data. Observations occur at the state-by-year-by-program approach level.¹ We extract program descriptions and eligibility requirements from the 2003 through 2011 NIEER yearbooks (Barnett et al., 2003; 2004; 2005; 2006; 2007; 2008; 2009; 2010; 2011) and code whether each observation corresponds to a targeted or universal approach based on the definitions above. When necessary, we also rely on information available from state preschool program and administrating agency websites. The results of our coding scheme appear in Table 1. In all, we leverage nearly 400 state-year-program approach observations from the 2001-2002 through 2010-2011 school years².

Next, we compute per-child state expenditures on public pre-kindergarten, our dependent variable of interest. We do so by dividing total state³ spending in each state-year-program approach by the number of 3- and 4-year-old children enrolled in each program. Both spending and enrollment figures come from NIEER. We also compute two alternative dependent variables. In accordance with the existing school finance literature (e.g., Poterba, 1997), we employ per-child state expenditures in logarithms. To assess changes in preschool spending relative to changes in state macroeconomic conditions, we divide per-child state pre-kindergarten expenditures by GDP per capita, described below.

A host of state-level, time-varying covariates allow us to isolate the independent relationship between program approach and per-child state expenditures on preschool. Our covariates include two indicators of resource allocation for early childhood programs other than state pre-kindergarten: (1) per-child state expenditures on Head Start, using expenditure data from NIEER and total Head Start enrollments from Head Start program fact sheets⁴; and (2) per-

¹ Most states contribute 10 observations to the panel. Two states, New York and Iowa, have contemporaneous targeted and universal programs in the same year and contribute 14 and 16 observations, respectively. States that do not fund pre-kindergarten are coded as “no program states” and omitted from the targeted-universal contrast.

² We subsequently label school years by their spring year, corresponding with the relevant fiscal year.

³ Note that many pre-kindergarten programs rely on some federal and local funding. NIEER data suggest that total federal expenditures on targeted programs are substantially similar to expenditures on universal programs over the panel. Further, expenditures on both types of programs tripled as a result of the American Recovery and Reinvestment Act (ARRA). Little information is available on local preschool funding. Most likely, recessionary declines in property tax revenue affected both program types, but we are unable to identify differential changes or their implications for state resource allocation. Overall, because state governments select a targeted or universal approach, we focus on state expenditures as the most proximal measure of the fiscal consequences of these approaches.

⁴ The Office of Head Start does not report enrollment figures for 2010. Thus, we impute enrollments for each state-program approach as the average of enrollments in 2009 and 2011. Results are effectively unchanged by the imputed values and are included to avoid collinearity with the 2010 dummy included in Models 1 and 2, below.

child state expenditures on the Child Care and Development Fund (CCDF), including both state matching and maintenance of effort contributions, derived from the Administration for Children and Families' ACF-696 Financial Report. These covariates may reflect both general priorities for early childhood education, as well as potential substitutes for pre-kindergarten. We also include K-12 spending and enrollment figures, reasoning that state preferences for education spending and state-level trends in enrollment may influence both preschool program approach and per-child preschool expenditures. We compute K-12 public school enrollments and average per-pupil expenditures from state sources using the Common Core of Data.

Finally, we capture statewide conditions likely correlated with program approach and per-child expenditures on pre-kindergarten. From the Bureau of Labor Statistics, we include Gross Domestic Product (GDP) per capita, unemployment rates, and female labor force participation rates for each state and year.⁵ In addition, we code states and years in which a school finance reform may have influenced the dependent and independent variables of interest. Specifically, we control for whether state supreme court oversight was in effect as a result of equity or adequacy litigation and, more specifically, whether that oversight governed preschool finance (Corcoran & Evans, 2008; Education Law Center, 2014; National Education Access Network, 2014). We include preschool-specific court oversight in the analyses, below.

We adjust all expenditure variables for inflation using the Consumer Price Index. Spending and per-child spending variables are reported in 2011 dollars.

5. Methods

We address each research question in turn using quantitative description and quasi-experimental methods. To begin, we compare spending on targeted and universal preschool between 2002 and 2011. In each year, we compute (1) the average per-child expenditure among targeted programs, and (2) the average per-child expenditure among universal programs. We show the results graphically, illustrating the relationship between program approach and resource allocation for pre-kindergarten. In doing so, we are able to assess theories presented in Section 2. Further, because of considerable differences in the history and politics of universal programs

⁵ In addition, we collect data on ARRA allocations by state and agency. While these data are disaggregated into announced, awarded, and paid categories, reported amounts are not time-varying. That is, we are unable to tell when funding is awarded, paid to, and spent by each state. As a result, we are unable to incorporate these data into our analyses.

initiated before and after 2002 (Bushouse, 2009), we conduct separate analyses for early- and late-adopting universal preschool states.

We formalize these analyses using ordinary least squares (OLS) regressions. Specifically, we compare per-child state expenditures on universal preschool—including all universal programs, early-adopting programs, and late-adopting programs—to per-child state expenditures on targeted preschool, accounting for a host of state-specific, time-varying covariates. In our preferred specifications, we fit the following model:

$$pchEXP_{st} = \beta_{0st} + \beta_{1st}UPK_{st} + \sum_{t=2002}^{2011} year_t\beta_t + ECE_{st}\beta_2 + EDUC_{st}\beta_3 + STc_{st}\beta_4 + e_{st} \quad [1]$$

where $pchEXP_{st}$ is the per-child state expenditure on preschool in state s in year t ; UPK_{st} is a dichotomous variable indicating whether that expenditure funded targeted or universal preschool; and $year_t$ is a series of dummy variables for the years 2002 through 2011. We omit the year 2007, the year before the Great Recession⁶, for comparability with Model [2], below; thus, β_t represents the average difference in per-child state preschool expenditures between year t and 2007. ECE_{st} is a vector of variables capturing states' resource allocations for other early childhood programs, specifically Head Start and CCDF; $EDUC_{st}$ includes per-pupil spending on K-12 education and K-12 enrollments in each state and year; STc_{st} denotes other state characteristics likely correlated with both the outcome of interest and UPK_{st} , as described above; and e_{st} is a normally distributed error term. Standard errors are clustered by state.

Next, we identify four case studies of interest: two cases, New York and Iowa, allow us to compare trends in per-child spending on targeted and universal preschool in states that had both simultaneously; two additional cases, Illinois and Massachusetts, document trends in per-child preschool spending in states that transitioned from targeted to universal provision. While these case studies may not be generalizable, they offer some insight into the policy transitions currently under debate in federal, state, and local governments.

⁶ The exact start date of the Great Recession is a topic of some dispute. The American subprime mortgage industry collapsed in March of 2007 and the U.S. experienced a liquidity crisis in August 2007, contributing to its 2007-2008 financial crisis. The worldwide recession began in the third quarter of 2008, according to formal definitions set forth by the International Monetary Fund. Based on the implications of these events for public preschool finance, we select the 2007-2008 school year (referred to as 2008) as the first year of the Great Recession.

To answer our second research question, we estimate the effect of the Great Recession on state-level preschool spending using an interrupted times series approach. That is, we compare per-child state expenditures on targeted and universal preschool before and after the 2008 crisis. We also disaggregate universal preschool programs into early- and late-adopters, as mentioned above, and compare spending trends in these two groups to spending on targeted preschool. For each comparison, we fit the following model:

$$pchEXP_{st} = \beta_{0st} + \sum_{t=2002}^{2011} year_t \beta_t + \sum_{t=2002}^{2011} (year_t * UPKin2007_s) \delta_t + \Gamma_s + e_{st} \quad [2]$$

As in Model [1], $year_t$ is a series of dummy variables for the years 2002 through 2011, with the exception of 2007, the year before the Great Recession. Different from Model [1], we replace UPK_{st} with $UPKin2007_s$ as the indicator of preschool program approach. $UPKin2007_s$ is a time-invariant measure of program approach, as assessed in the year before the Recession. This measure avoids confounding between- and within-state changes (from targeted to universal preschool, for example) over time.⁷ In addition, we employ state fixed effects, Γ_s , to net out state-specific levels of per-child spending on preschool.

The coefficients of interest are δ_t for $t = 2008, \dots, 2011$, which indicate the average difference in per-child state preschool expenditures between year t and 2007 between universal and targeted programs. We fit Model [2] both with and without the time-varying covariates described above. These covariates capture state-level correlates of preschool spending remaining after the inclusion of time-invariant state fixed effects. In all specifications of Model [2], standard errors are clustered by state.

We estimate Models [1] and [2] non-parametrically in order to account for non-linear trends in the difference between per-child spending on targeted and universal preschool. This functional form is validated by the graphical evidence shown below—particularly in the post-Recession period. Thus, it offers the most robust framework for comparing the resilience of targeted and universal preschool expenditures in the context of the 2008 financial crisis.

⁷ One limitation of this model is that it cannot accommodate expenditure data from the targeted years of programs that became universal (2002 through 2006 in Illinois and Massachusetts); data from a targeted program in a state that had both targeted and universal programs prior to the Recession (New York, between 2002 and 2007); and data from a state that adopted universal preschool after 2007 (Iowa). As a result, the estimation sample used in fitting Model [2] includes 30 fewer observations than the sample used to fit Model [1].

6. Results

Before presenting the results of the econometric analyses, we provide visual evidence of our main findings. We begin by examining spending on pre-kindergarten between 2002 and 2011. Figure 1 plots average per-child state expenditures on targeted and universal programs in each year of the panel (i.e., the average in each year for which UPK_{st} is equal to 0 and 1, respectively). We find that targeted programs consistently spend more per child, on average. This difference in spending is particularly large in the year of the Great Recession and subsequent years. For example, in 2008, we find that targeted pre-kindergarten programs spent nearly \$1,000 more per child, on average, than universal programs (\$4,659 compared to \$3,673). With the influx of stimulus funding from the American Recovery and Reinvestment Act of 2009, the difference shrinks to \$767 in 2009 and then expands to \$1,015 in 2011. By comparison, in the year before the Recession (marked with a vertical line), the difference between these approaches was half as large—roughly \$513. This evidence raises suspicion about existing theory on the political economy of policymaking, which predicts that universal programs will be more resilient than targeted ones (Barnett, Brown, et al., 2004; Barnett, 2011; Skocpol, 1991a, 1991b; Zigler et al., 2006). In fact, this evidence suggests, at least preliminarily, that targeted programs may be more, not less, resilient than universal programs in the context of a fiscal crisis.

In Figure 2, we disaggregate the per-child spending figure into total state spending and total enrollments in pre-kindergarten, by program approach. That is, we sum all the state resources allocated to targeted programs and, separately, all the state resources allocated to universal programs in each year of the panel; we then do the same for enrollments. Despite the dramatic expansion of universal preschool during this period, we find that the majority of children enrolled in public pre-kindergarten attend a targeted program (57 percent in 2011, for example). Moreover, while targeted and universal programs saw a similar rate of enrollment growth in the post-Recession period, total targeted spending increased at a much faster rate. This explains the pattern observed in Figure 1 concerning the more favorable evolution of per-child spending among targeted programs after the crisis.

In Figures 3 and 4, we replicate the previous two graphs, this time disaggregating universal programs into early and late adopters. Early adopters include those states that introduced universal pre-kindergarten in or before 2002: Wisconsin (1848), Georgia (1995),

Oklahoma (1998), New York (1998), and West Virginia (2002). Late adopters include Florida (2006), Illinois (2007), Massachusetts (2007), and Iowa (2008). These two groups have very different political and economic histories—namely, that the late adopters were influenced by lobbying efforts from the Pew Charitable Trusts and by the experiences of the early adopters (see, for example, Bushouse, 2009).

We find stark differences in resource allocation between late-adopting universal and targeted programs, and between early- and late-adopting universal programs, but fewer differences between early universal and targeted programs. As shown in Figure 3, per-child spending on universal preschool in late-adopting states is substantially lower and more volatile than spending on other types of preschool. This pattern persists even in the years after 2007, when all four late-adopting programs had been implemented (versus five early-adopting universal and thirty targeted programs). For example, in 2011, the average difference in spending between targeted and late-adopting universal programs is \$1,513 per child, while the difference between targeted and early-adopting universal programs is just \$618. Likewise, Figure 4 shows roughly equivalent total enrollments in both early and late universal programs starting in 2007, alongside significantly lower total spending by late adopters over the same period.

6.1 How Does Per-Child Spending On Targeted Preschool Compare To Per-Child Spending On Universal Preschool?

To formalize the comparisons in Figures 1 through 4, we fit Model [1]. The results appear in Table 2. In the first panel, we compare spending in universal and targeted programs; in the second and third panels, we compare targeted programs with early- and late-adopting universal programs, respectively. Within each panel, we present five sets of results: column (1) examines the bivariate relationship between program approach and per-child pre-kindergarten expenditures, column (2) adds year dummies, column (3) controls for spending on other early childhood education programs in each state and year, column (4) includes spending and enrollment in K-12 public schools, and column (5) adds state-level economic factors likely correlated with the choice of program approach and per-child spending on pre-kindergarten. Column (5) adopts the same specification as Model [1]. In addition, we present substantially similar results using an alternative dependent variable, the log of per-child state preschool expenditures, in Appendix Table 1.

Across all columns in the first panel, we do not find any evidence in favor of the argument that universal preschool programs secure more public resources than targeted ones. If anything, the sign of the coefficients suggests that universalism predicts lower spending on preschool than targeting—on the order of \$444 fewer per child—although estimates are not statistically significant at conventional levels. This pattern of results raises doubts about existing theory regarding the political desirability of the universal approach.

The second and third panels of Table 2 mirror Figure 3. We find that early-adopted universal programs spend less per child than targeted programs, on average, but the differences are small and fail to reach statistical significance. By contrast, we find a pattern of large and significant differences in per-child expenditures between late-adopted universal and targeted programs. In our most robust specification, we find that universal programs launched after 2002 spend \$1,025.23 less per child, on average, than targeted programs. This estimate is roughly two-and-a-half times larger than the comparable estimate in Panel 1 and five times as large as the estimate in Panel 2. As a result, we reason that differences in per-child spending on targeted and universal preschool may partially reflect differences between the two approaches in average program age. Further, we hypothesize that the Great Recession may have differentially affected late-adopted universal programs, which had relatively little time to get established before the onset of the crisis. We probe these possibilities below.

6.2 Case Studies

In addition to comparisons of average per-child spending, four states offer insight into the potential fiscal repercussions of targeting and universalism. Two of these states, New York and Iowa, funded both targeted and universal pre-kindergarten programs in overlapping years (New York from 1999 through 2007, and Iowa starting in 2008 and continuing through the end of our panel). Two other states, Illinois and Massachusetts, transitioned from targeted to universal pre-kindergarten in 2007. We replicate Figure 1 for each of these states and document the results in Figures 5 through 8. We also disaggregate spending and enrollment in each of these states (as in Figure 2) in order to explore observed changes in per-child spending; Appendix Figures 1 through 4 depict the results.

Looking across these cases, we find that two states, New York and Illinois, maintained nearly identical per-child expenditures for public pre-kindergarten regardless of program

approach. New York did so in overlapping years, with the exception of a steep decline in per-child funding in the last year of its targeted program (Figure 5). This decline is likely driven by a phased-in absorption of the targeted program by the universal program, as advised by the state Board of Regents in January, 2006 (Barnett et al., 2007). In Illinois, per-child funding remained consistent through a transition from targeting to universalism and a dramatic program expansion (Appendix Figure 3). Even in Massachusetts, where budget cuts and program reorganization in the early 2000s contributed to funding volatility (Barnett et al., 2006), trends appear similar between the state's targeted and universal programs (Figure 8, Appendix Figure 4).

Iowa offers a somewhat different portrait of the relationship between per-child spending on pre-kindergarten and program approach. Here, we observe consistently higher spending on targeted compared to universal preschool. We also observe a process of convergence (Figure 6). The state's targeted program, *Shared Visions*, was flat-funded from 1995 through 2007 and then again 2011, and was subject to cutbacks in 2000, 2001, and 2003 (Barnett et al., 2005). These fiscal constraints resulted in service reductions and supplementation from local sources (Barnett et al., 2011). Its universal program, by contrast, has enjoyed increased allocation from the General Revenue Fund in every year since its launch in 2008 (Appendix Figure 2). These changes may reflect growing public support for the universal approach and could eventually imply greater per-child spending on universal preschool (cf. Schiltz, 1970). Ongoing research should monitor trends in program finance and potential program combination in order to test the implications of existing theory (Barnett, Brown, et al., 2004; Barnett, 2011; Skocpol, 1991a, 1991b; Zigler et al., 2006).

These cases illustrate two patterns of within-state resource allocation: (1) similar funding between targeted and universal programs; and (2) greater funding for targeted programs accompanied by a process of convergence. *In no state do universal programs secure more resources per child than targeted ones*, counter to prevailing theory (e.g., Barnett, Brown, et al., 2004; Barnett, 2011; Zigler et al., 2006). Further research is required to understand the unique history of each program and state engaged in contemporaneous program funding or a transition to universalism. This research would benefit from qualitative interviews, reviews of legislative records and executive orders, and investigations of state and local news media. We leave it for a future endeavor.

6.3 Is Universal Preschool More Resilient To Budget Cuts Than Targeted?

Having compared per-child pre-kindergarten spending by program approach and investigated case studies of concurrent funding and transition, we turn to our second research question. As described in Section 5, we employ an interrupted time series framework to compare changes in resource allocation for targeted and universal preschool before and after the Great Recession. We do so by fitting Model [2] both with and without time-varying state-level controls. Importantly, the indicator of program approach, $UPKin2007_s$, is now stable over time within states. (See Appendix Table 2 for an alternate version of Table 2 using this indicator; results are substantively unchanged.)

Table 3 reports the results of these analyses. As in Table 2, the first panel of results compares spending on targeted and universal preschool. Across both specifications, we find no significant difference in per-child expenditures by program approach before the Great Recession. Likewise, between 2008 and 2011, we find no significant difference in spending on targeted and universal preschool, on average, compared to spending differences in 2007. That is, *we cannot identify either universal or targeted programs as more resilient to cutbacks in the context of a financial crisis*. Point estimates are negative (indicating greater resilience among targeted programs), but none approach statistical significance at conventional levels.

When we disaggregate universal programs into early and late adopters, our findings are effectively unchanged. In the second panel, the Great Recession does not appear to have differential effects on targeted and early-adopting universal programs. Coefficients on the interactions of program approach and year are small and indistinguishable from zero. This pattern of results is largely replicated in the third panel. We find some evidence to suggest that targeted programs are more resilient than late-adopting universal programs in 2011—spending nearly \$300 more per child, on average ($p < 0.10$)—but this estimate shrinks and loses significance with the inclusion of state-level controls. (It is also insignificant in an alternate specification of Model [2] using the log of per-child spending as the dependent variable; see Appendix Table 3.) As a result, we conclude that the Great Recession affected resource allocation for all preschool programs similarly, regardless of program approach.

Before discussing these findings, we address one potential limitation of our analyses. Specifically, we might be concerned that per-child expenditures are not comparable across states given differences in state economic conditions both before and after the Great Recession. To the

extent that these conditions are related to preschool program approach, they may confound the contrast of interest. To address these concerns, we transform our dependent variable: we divide per-child spending on pre-kindergarten by GDP per capita in each state and year, allowing for fluctuations in state economic conditions. Then, we re-estimate Model [2] using this new outcome. The results, which are presented in Appendix Table 4, are essentially identical to those using untransformed per-child expenditures. Together, these analyses strengthen and extend the main results presented in Table 3.

7. Discussion

In both descriptive and causal analyses, we find evidence that questions the prevailing argument that a politically savvy advocate for public preschool should choose a universal approach over a targeted one (Barnett, Brown, et al., 2004; Barnett, 2011; Skocpol, 1991a, 1991b; Zigler et al., 2006). We find that targeted programs tend to spend more than universal programs, by about \$444 per child, and that these differences are particularly large and significant when comparing targeted programs with the wave of universal programs introduced after 2002. Furthermore, we find no evidence to support the claim that universal programs are more resilient to budget cuts than targeted programs in the context of a fiscal crisis. This is true even after accounting for differential changes in state economic conditions over time.

The choice to target or universalize public pre-kindergarten may be related to state characteristics beyond time-varying GDP per capita, however. For example, states that have a targeted program may prefer high levels of spending on social programs, in general, or on early childhood programs, specifically. They may also be more economically productive and, therefore, have fewer budgetary constraints than states with universal programs. To assess the plausibility of these claims, we overlay Figure 1 with (1) per-child state spending on supplements to the Child Care and Development Fund (which provides private child care vouchers to poor families); (2) per-child state spending on supplements to the federal Head Start program; (3) per-pupil spending on K-12 education; and (4) GDP per capita, all averaged by program approach. The results are presented in Appendix Figures 5 through 8.

Compared to states with universal preschool programs, we find that states with targeted preschool tend to spend more on targeted early childhood policies in general (via state supplements to CCDF and Head Start). However, states with targeted preschool programs *do not*

spend more on other types of social programs. For example, states with universal preschool programs spent roughly \$560 more per public school student than states with targeted programs between 2002 and 2011. Moreover, we find virtually identical levels of economic productivity, as measured with GDP per capita, between targeted and universal program states beginning in 2007.

Why, then, might universal preschool programs secure fewer resources per child and appear no more resilient to financial crisis? One reason might be program age. Although the oldest preschool program in the country is universal (Wisconsin's, guaranteed by state constitutional provision beginning in 1848), the median age of targeted programs was more than twice that of universal programs in the last year of our panel (20 years, compared to 9 years). Longevity may account for differences in bureaucratic protection, the development of affiliated advocacy groups, and the growth of a loyal base of past participants.

To assess the returns to age among public preschool programs, we begin by graphing per-child expenditures as a function of program age. We do so separately for targeted, early-adopted universal, and late-adopted universal programs and present the results in Figure 9. We find that late-adopted universal preschool programs appear to spend less than other programs—including targeted programs of the same age. We formalize this comparison in Table 4. Here, we predict per-child state expenditures on preschool as a function of program age, program approach (UPK_{st}), and an interaction between the two. Focusing on the three-way comparison, we estimate the difference between late universal and targeted spending to be roughly \$1,700 per child ($p < 0.05$) after accounting for differences in age. Although the coefficient on the interaction between age and late universal program adoption is positive, suggesting the potential for convergence of per-child expenditures over time, this estimate does not reach significance at conventional levels. As a result, we find no credible evidence to support the notion of differential returns to age by program approach. That is, late universal programs spend less per child—perhaps due to aspects of program formulation or close proximity to the Great Recession—and longevity does not narrow gaps in funding between these and other programs, at least within the time period of this study.

Although we find no independent association between age and resource allocation (Table 4), targeted programs may benefit from bureaucratic protectionism forged over periods of political and economic challenge (Greenstein, 1991a, 1991b; Rose, 2012; Skocpol, 1991a,

1991b; Zigler & Muenchow, 1994; Zigler & Styfco, 2010). They may also gain legitimacy from path dependence, building on nearly a century of targeted preschool provision in the United States (Lascarides & Hinitz, 2000). Likewise, they can claim more past beneficiaries, including both children and families, than universal programs (Figure 2). Although targeted programs serve only a fraction of 3- and 4-year-olds, and those they serve come from less advantaged families, their interest groups may be especially loyal if not especially well-endowed (Bushouse, 2009; Converse, 1964; Fuller, 2007; Kirp, 2007; Krosnick, 1990).

In addition to the role of bureaucratic protection, it may be that universal programs do not spend more than targeted ones because, contrary to what scholars have assumed, the median voter does not support a universal approach more than a targeted one. Indeed, new evidence on public opinion suggests that Americans have no preference for targeted or universal preschool, on average (E. H. Greenberg, 2014). In fact, contrary to the assumptions underlying much of the prevailing theory, support for universal programs declines rapidly under threat of increased taxation, while support for targeted preschool remains virtually unaffected—buttressed by egalitarian values regarding equality of opportunity. Scholars have long documented the importance of beneficiaries’ need and deservingness in allocating public goods (J. Greenberg, 1981; Greenstein, 1991a, 1991b; Skitka & Tetlock, 1991). Here, we suggest that targeted preschool programs may secure more resources per child, and may be just as resilient to budget cuts in the context of the Great Recession, because of the adjudged need and deservingness of their participants—young children from low-income families.

8. Conclusion

In his 2013 State of the Union Address, President Barack Obama proposed new state-federal partnerships to “make high-quality preschool available to every child in America” (2013). His plan specified free preschool for families earning up to 200 percent of the Federal Poverty Level, with incentives to provide open access to higher-income families through sliding-scale fee payments (Matthews, 2013). It was to be funded by new tobacco taxes within the year. By all theoretical accounts (Greenstein, 1991a, 1991b; Skocpol, 1991a, 1991b), this plan should have enjoyed great success. Yet, in his 2014 State of the Union Address, President Obama declared: “Last year, I asked this Congress to help states make high-quality pre-K available to every 4-year-old. And as a parent as well as a president, I repeat that request tonight” (2014).

Why, given the prevailing arguments about universal provision, would the President need to repeat this request? In the absence of major federal efforts, why do only one-quarter of publicly funded state pre-kindergarten programs employ a universal approach? Does the political economy of policymaking, in fact, favor universal preschool? This study finds no evidence for the arguments that universal programs secure more resources for their participants and are more resilient to cutbacks in the face of financial downturn.

We offer two caveats in the interpretation of these findings. First, the 2008 crisis was not typical of other crises in that it was closely followed by a fiscal stimulus: the American Recovery and Reinvestment Act of 2009. We have labored to remove stimulus funding from our estimates of both per-child pre-kindergarten expenditures and the state-level, time-varying controls included in Tables 2 and 3. Nevertheless, some funds made their way into general revenue streams and program operating budgets, and we cannot rule out their inclusion in our analyses. To the extent that these funds differentially benefitted targeted or universal programs, they may limit the generalizability of our findings to other recessionary periods. Second, it is possible that universal programs benefit from economies of scale that evade smaller targeted programs. Likewise, middle- and higher-income families in universal programs may have less appetite for expensive wraparound services than low-income families eligible for targeted programs. Further research should go beyond our focus on public finance to explore whether and how funding for targeted and universal programs relates to program quality and child outcomes—and whether the funding disparities identified here imply meaningful differences in the experiences of children and families.

In all, this study seeks to inform the ongoing targeted-universal preschool debates. We argue that public opinion, bureaucratic protection, path dependence, and general budgetary constraints favor program targeting more than current theories suggest. Although American values regarding programs for young children appear to differ from those serving adults (E. H. Greenberg, 2014), our findings may inform broader debates over targeting and universalism, as well. We conclude by encouraging future empirical investigations into the political economy of policy approach. In doing so, we hope to generate new theory to guide policymaking across a range of economic and social issues.

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Table 1. Targeted and Universal State Pre-Kindergarten Programs

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Alabama										
Alaska										
Arizona										
Arkansas										
California										
Colorado										
Connecticut										
Delaware										
Florida										
Georgia										
Hawaii										
Idaho										
Illinois										
Indiana										
Iowa										
Kansas										
Kentucky										
Louisiana										
Maine										
Maryland										
Massachusetts										
Michigan										
Minnesota										
Mississippi										
Missouri										
Montana										
Nebraska										
Nevada										
New Hampshire										
New Jersey										
New Mexico										
New York										
North Carolina										
North Dakota										
Ohio										
Oklahoma										
Oregon										
Pennsylvania										
Rhode Island										
South Carolina										
South Dakota										
Tennessee										
Texas										
Utah										
Vermont										
Virginia										
Washington										
West Virginia										
Wisconsin										
Wyoming										
<i>Key</i>		Universal				Targeted				

Note: Year denotes spring of school year. We define state pre-kindergarten as a program that is: (1) state-funded as pre-kindergarten, (2) state-regulated as pre-kindergarten, (3) must provide some educational services, and (4) may or may not be directly state provided. We define universal pre-kindergarten as having: (1) no eligibility criteria, with the exceptions of age and state residency, and (2) a legal mandate (under state law, administrative code, or constitutional provision) to provide access to all children whose families choose to enroll them. All other pre-kindergarten programs are defined as targeted.

Table 2. Predictors of Per-Child State Spending on Pre-Kindergarten, 2002-2011

	<i>Universal versus Targeted</i>					<i>Early Universal (Started in or before 2002) versus Targeted</i>					<i>Late Universal (Started after 2002) versus Targeted</i>				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Universal Pre-Kindergarten	-582.91 (440.94)	-631.43 (455.02)	-276.27 (468.56)	-501.31 (564.76)	-444.21 (450.73)	-345.85 (450.76)	-351.78 (456.54)	51.23 (509.63)	-219.2 (657.42)	-214.09 (577.11)	-1175.58 * (500.27)	-1385.38 * (517.02)	-1133 ** (413.65)	-1287.72 ** (428.38)	-1025.23 ** (338.60)
2002	104.91 (200.90)	-612.13 (395.99)	28.83 (589.06)	28.83 (385.48)	-618.13 (385.48)	75.76 (207.16)	-687.39 + (389.36)	-57.47 (592.40)	-688.14 + (394.30)	43.47 (394.30)	43.47 (226.82)	-741.36 + (384.14)	76.6 (645.86)	-614.21 (426.91)	-614.21 (426.91)
2003	-58.36 (146.41)	-84.02 (137.96)	91.91 (178.66)	-431.54 (323.94)	-431.54 (323.94)	-87.51 (151.27)	-127.28 (140.03)	46.74 (189.70)	-523.92 (348.36)	-97.59 (167.24)	-97.59 (167.24)	-126.62 (155.12)	116.88 (226.83)	-530.36 (384.27)	-530.36 (384.27)
2004	-54.83 (128.88)	-47.95 (121.88)	97.16 (140.82)	-347.96 (258.34)	-347.96 (258.34)	-83.98 (131.54)	-90.99 (116.91)	52.94 (145.49)	-425.64 (274.09)	-130.32 (143.35)	-130.32 (143.35)	-125.37 (128.07)	74.96 (174.21)	-456.36 (296.30)	-456.36 (296.30)
2005	-12.9 (161.06)	63.81 (140.85)	113.02 (132.49)	-142.42 (225.21)	-142.42 (225.21)	-41.06 (165.77)	24.52 (140.25)	74.07 (135.79)	-209.59 (240.69)	-98.18 (184.76)	-98.18 (184.76)	-12.72 (155.28)	61.93 (154.25)	-244.36 (270.95)	-244.36 (270.95)
2006	-94.77 (79.78)	-35.72 (89.34)	-23.77 (76.93)	-137.72 (118.53)	-137.72 (118.53)	-91.19 (81.02)	-50.43 (92.92)	-46.73 (88.94)	-180.22 (145.52)	-158.96 (97.08)	-158.96 (97.08)	-90.79 (108.49)	-69.27 (103.34)	-217.49 (144.09)	-217.49 (144.09)
2008	221.74 (151.63)	183.89 (161.72)	181.85 (168.88)	320.93 (203.98)	320.93 (203.98)	297.05 + (160.63)	254.98 (174.26)	247.18 (181.08)	353.76 (215.54)	260.38 (176.03)	260.38 (176.03)	217.01 (189.70)	222.47 (205.07)	390.57 (261.77)	390.57 (261.77)
2009	492.03 ** (147.23)	479.56 ** (174.51)	356.43 + (201.45)	356.43 + (548.43)	356.43 + (548.43)	497.79 ** (149.31)	493.01 * (182.50)	361.09 (214.92)	-99.69 (570.52)	557.56 ** (169.35)	557.56 ** (169.35)	547.49 * (202.94)	398.01 (245.16)	-44.34 (621.68)	-44.34 (621.68)
2010	458.77 * (185.58)	409.87 + (203.73)	255.23 (243.81)	-235.69 (618.88)	-235.69 (618.88)	526.37 * (201.83)	476.18 * (224.79)	311.95 (269.30)	-345.68 (656.06)	512.23 * (215.85)	512.23 * (215.85)	456.48 + (237.47)	268.14 (292.03)	-376.83 (690.02)	-376.83 (690.02)
2011	278.8 * (131.15)	258.24 (169.78)	170.55 (169.99)	-272.15 (524.48)	-272.15 (524.48)	336.97 * (141.90)	314.33 (187.90)	206.25 (192.72)	-361.7 (560.27)	338.12 * (155.12)	338.12 * (155.12)	312.02 (199.89)	219.49 (208.53)	-362.37 (595.95)	-362.37 (595.95)
Per-Child State Spending on CCDF			0.21 + (0.12)	0.07 (0.16)	0.13 (0.10)			0.23 + (0.12)	0.09 (0.16)	0.13 (0.10)			0.24 * (0.11)	0.06 (0.17)	0.09 (0.11)
Per-Child State Spending on Head Start			1.02 *** (0.18)	0.95 *** (0.25)	0.84 ** (0.27)			1.01 *** (0.18)	0.95 *** (0.25)	0.83 ** (0.28)			1.04 *** (0.18)	0.95 ** (0.27)	0.78 * (0.30)
Per-Pupil State Spending on K-12				0.24 (0.21)	0.06 (0.11)				0.23 (0.22)	0.06 (0.12)				0.31 (0.25)	0.09 (0.12)
Total Enrollment in K-12				0 (0.00)	0 (0.00)				0 (0.00)	0 (0.00)				0 (0.00)	0 (0.00)
State GDP Per Capita					0.07 (0.04)					0.07 + (0.04)					0.08 + (0.04)
State Unemployment Rate					178.24 (143.53)					209.81 (151.56)					234.36 (154.86)
Female Labor Force Participation Rate					-102.04 * (49.64)					-101.17 * (49.71)					-70.64 (66.38)
School Finance Oversight Involving Pre-K					1682.28 (1567.37)					1512.73 (1572.47)					2516.26 (1557.34)
Constant	4483.82 *** (379.58)	4355.38 *** (392.35)	3524.08 *** (411.62)	1194.45 (1872.30)	5513.52 + (3124.47)	4483.82 *** (379.73)	4346.74 *** (393.89)	3504.64 *** (412.37)	1208 (1965.11)	5016.01 (3123.00)	4483.82 *** (380.20)	4367.91 *** (398.83)	3482.61 *** (413.99)	351.46 (2314.73)	2179.48 (4191.31)
Observations (N)	385	385	385	385	385	365	365	365	365	365	335	335	335	335	335
States (N)	40	40	40	40	40	39	39	39	39	39	36	36	36	36	36
R-Squared	0.01	0.02	0.25	0.32	0.44	0	0.02	0.25	0.32	0.44	0.02	0.03	0.28	0.37	0.51

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars.

Table 3. Effects of the 2008 Recession on Per-Child State Spending on Pre-Kindergarten, by Program Approach

	<i>Universal versus Targeted</i>		<i>Early Universal (Started in or before 2002) versus Targeted</i>		<i>Late Universal (Started after 2002) versus Targeted</i>		
	Base Model	With Controls	Base Model	With Controls	Base Model	With Controls	
2002	-22.25 (261.21)	532.78 (325.75)	-22.25 (261.29)	521.53 (330.43)	-22.25 (261.17)	761.11 (300.47)	
2003	-115.23 (189.23)	202.28 (280.59)	-115.23 (189.28)	194.81 (286.80)	-115.23 (189.20)	351.25 (264.48)	
2004	-172.98 (156.08)	104.73 (257.57)	-172.98 (156.13)	95.7 (263.40)	-172.98 (156.05)	233.31 (239.44)	
2005	-144.82 (208.48)	25.37 (236.38)	-144.82 (208.53)	18.2 (239.16)	-144.82 (208.44)	116.04 (226.42)	
2006	-149.84 (87.47)	+ -85.11 (127.80)	-149.84 (87.49)	+ -90.08 (129.67)	-149.84 (87.45)	+ -50.54 (123.27)	
2008	266.15 (201.04)	262.52 (231.17)	266.15 (201.10)	278.39 (233.15)	266.15 (201.00)	229.91 (237.39)	
2009	486.38 (187.72)	* 807.19 (387.36)	* 486.38 (187.77)	* 855.72 (398.93)	* 486.38 (187.68)	* 728.55 (431.80)	
2010	301.52 (197.22)	735.45 (409.37)	301.52 (197.28)	785.42 (423.01)	301.52 (197.18)	666.71 (458.63)	
2011	125.21 (146.40)	550.76 (338.29)	125.21 (146.44)	591.03 (351.55)	125.21 (146.38)	510.81 (380.14)	
2002*Universal Pre-Kindergarten	51.46 (466.92)	250.82 (543.23)	73 (429.42)	261.39 (498.90)			
2003*Universal Pre-Kindergarten	-160.93 (326.14)	-103.36 (297.13)	-139.4 (289.22)	-95.87 (257.94)			
2004*Universal Pre-Kindergarten	132.36 (204.68)	167.34 (229.96)	153.9 (204.97)	173.37 (235.77)			
2005*Universal Pre-Kindergarten	223.32 (211.93)	247.38 (203.83)	244.85 (210.61)	255.74 (194.18)			
2006*Universal Pre-Kindergarten	161.86 (101.46)	124.97 (107.17)	189.98 (114.88)	179.86 (119.40)	88.6 (114.33)	-176.93 (223.63)	
2008*Universal Pre-Kindergarten	-323.83 (254.27)	-343.29 (263.51)	-156.38 (225.13)	-212.84 (233.74)	-602.91 (365.54)	-589.97 (429.05)	
2009*Universal Pre-Kindergarten	-64.39 (358.30)	-85 (337.84)	-289.17 (267.08)	-351.35 (306.31)	310.24 (711.33)	304.75 (579.66)	
2010*Universal Pre-Kindergarten	-157.34 (266.89)	-177.85 (283.92)	-68.68 (340.12)	-92.89 (361.38)	-305.12 (203.70)	-383.32 (349.11)	
2011*Universal Pre-Kindergarten	-183.11 (200.01)	-235.95 (221.84)	-113.37 (254.78)	-206.96 (288.08)	-299.36 (154.91)	+ -263.6 (245.30)	
Per-Child State Spending on CCDF		-0.1 (0.03)	**	-0.1 (0.03)	**	-0.12 (0.04)	**
Per-Child State Spending on Head Start		0.38 (0.21)	+	0.38 (0.21)	+	0.39 (0.19)	+
Per-Pupil State Spending on K-12		0.16 (0.16)		0.14 (0.17)		0.3 (0.15)	+
Total Enrollment in K-12		0 (0.00)		0 (0.00)		0 (0.00)	
State GDP Per Capita		-0.04 (0.04)		-0.03 (0.04)		-0.04 (0.04)	
State Unemployment Rate		-131.84 (72.55)	+	-139.36 (75.15)	+	-139.47 (80.60)	+
Female Labor Force Participation Rate		70.13 (47.02)		70.63 (47.57)		62.62 (51.47)	
School Finance Oversight Involving Pre-K		28.15 (352.09)		38.91 (351.40)		381.27 (205.96)	+
Constant	4365.89 (96.89)	*** 1455 (3511.09)	4414.41 (101.42)	*** 1603.6 (3574.23)	4409.31 (112.51)	*** 1040.61 (3588.62)	
Observations (N)	355	355	339	339	305	305	
States (N)	39	39	36	36	34	34	
R-Squared	0.92	0.93	0.92	0.93	0.92	0.94	

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars. All models include state fixed-effects. Sample excludes data from Illinois and Massachusetts in the years in which their programs were targeted (2002-2006) and from Iowa in all years.

Table 4. Associations between Program Age and Per-Child State Spending on Pre-Kindergarten, by Program Approach

	<i>Universal versus Targeted</i>		<i>Early Universal versus Late Universal versus Targeted</i>	
Program Age (in Years)	-36.78 (30.95)		-36.78 (31.03)	
Universal Pre-Kindergarten	-1095.01 (765.34)			
Age*Universal Pre-Kindergarten	34.1 (31.02)			
Early Universal (Started in or before 2002)			-732.14 (763.81)	
Late Universal (Started after 2002)			-1703.82 (768.65)	*
Age*Early Universal			31.51 (31.06)	
Age*Late Universal			8.44 (53.58)	
Constant	5070.17 (717.82)	***	5070.17 (719.71)	***
Observations (N)	386		386	
States (N)	40		40	
R-Squared	0.03		0.04	

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars.

Figure 1. Average Per-Child State Spending on Pre-Kindergarten, by Program Approach

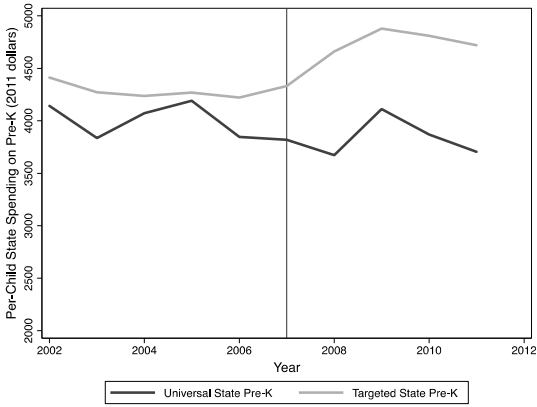


Figure 2. Total State Spending on Pre-Kindergarten and Enrollment, by Program Approach

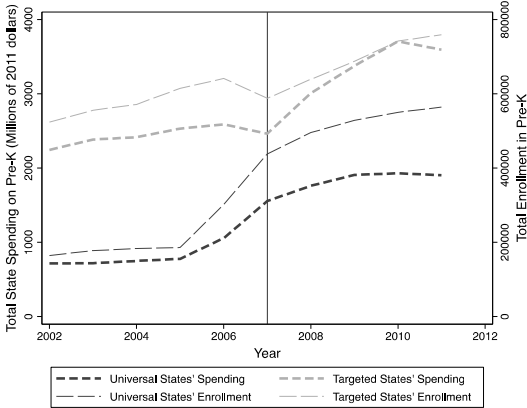


Figure 3. Average Per-Child State Spending on Pre-Kindergarten, by Program Approach and Early (Started in or before 2002) or Late (Started after 2002) Universal Adoption

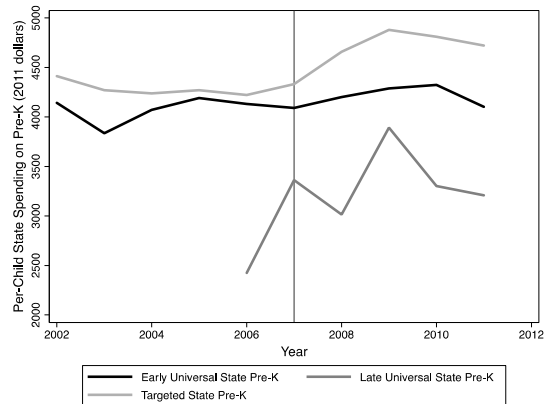
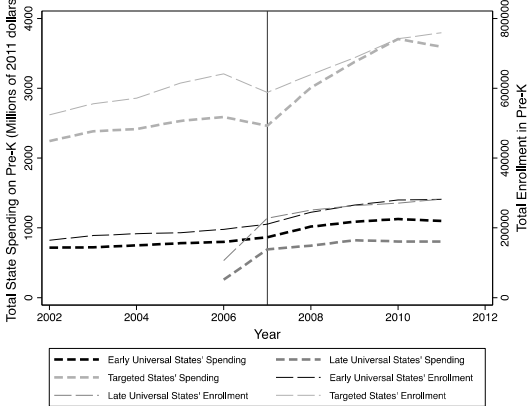
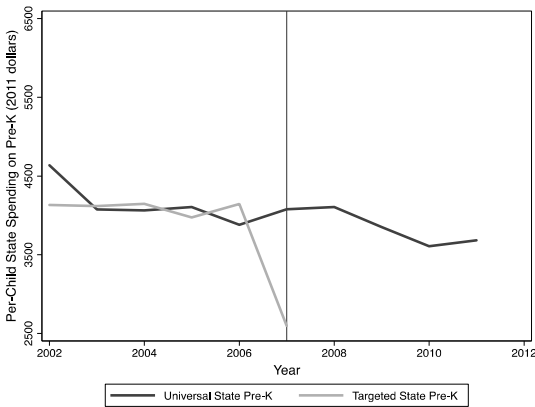


Figure 4. Total State Spending on Pre-Kindergarten and Enrollment, by Program Approach and Early (Started in or before 2002) or Late (Started after 2002) Universal Adoption

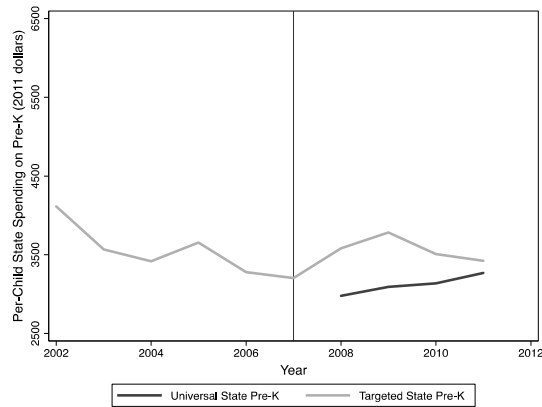


Figures 5 and 6. Per-Child State Spending on Pre-Kindergarten among States with Two Program Approaches in the Same Year

New York

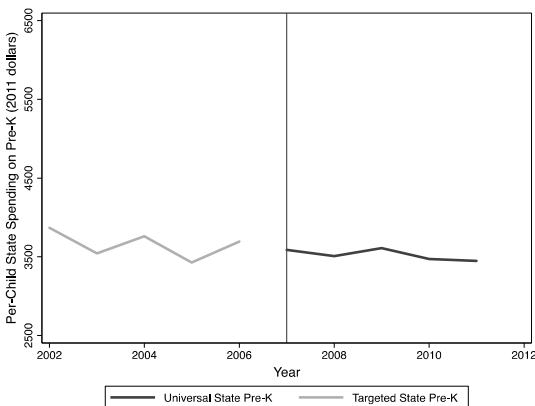


Iowa



Figures 7 and 8. Per-Child State Spending on Pre-Kindergarten among States that Transition from Targeted to Universal Provision

Illinois



Massachusetts

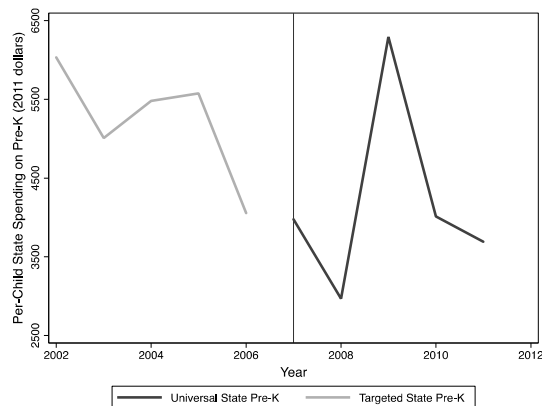
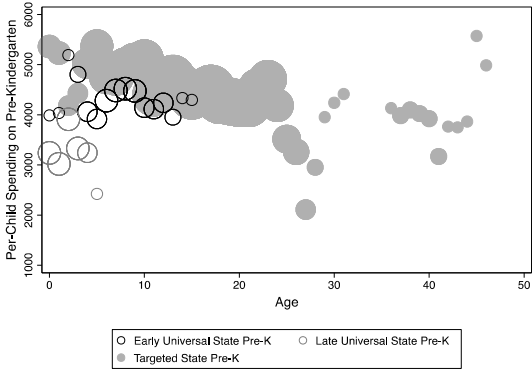


Figure 9. Average Per-Child State Spending on Pre-Kindergarten, by Age, Program Approach, and Early (Started in or before 2002) or Late (Started after 2002) Universal Adoption



Notes: Markers are weighted by the number of state programs of each age.
Wisconsin pre-k (started in 1848) omitted for ease of interpretation.

Appendix Table 1. Predictors of Log Per-Child State Spending on Pre-Kindergarten, 2002-2011

	<i>Universal versus Targeted</i>					<i>Early Universal (Started in or before 2002) versus Targeted</i>					<i>Late Universal (Started after 2002) versus Targeted</i>				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Universal Pre-Kindergarten	-0.04 (0.10)	-0.05 (0.10)	0.02 (0.11)	-0.02 (0.12)	-0.01 (0.10)	0.03 (0.10)	0.03 (0.10)	0.11 (0.12)	0.06 (0.13)	0.06 (0.12)	-0.21 (0.13)	-0.25 + (0.13)	-0.2 + (0.11)	-0.24 * (0.10)	-0.2 * (0.09)
2002		0.01 (0.05)	-0.12 (0.09)	0 (0.12)	-0.11 (0.09)		0 (0.05)	-0.14 (0.09)	-0.03 (0.12)	-0.13 (0.09)		-0.01 (0.06)	-0.16 + (0.09)	0 (0.13)	-0.12 (0.10)
2003		-0.02 (0.04)	-0.03 (0.04)	0 (0.04)	-0.1 (0.08)		-0.03 (0.04)	-0.04 (0.04)	-0.01 (0.05)	-0.13 (0.09)		-0.04 (0.05)	-0.04 (0.05)	0 (0.05)	-0.13 (0.09)
2004		-0.01 (0.03)	-0.01 (0.03)	0.01 (0.03)	-0.08 (0.06)		-0.02 (0.03)	-0.02 (0.03)	0 (0.03)	-0.1 (0.07)		-0.03 (0.04)	-0.03 (0.03)	0.01 (0.04)	-0.11 (0.07)
2005		0 (0.04)	0.01 (0.04)	0.02 (0.03)	-0.04 (0.05)		-0.01 (0.04)	0 (0.04)	0.01 (0.03)	-0.06 (0.06)		-0.02 (0.04)	-0.01 (0.04)	0.01 (0.04)	-0.07 (0.06)
2006		-0.03 (0.02)	-0.02 (0.03)	-0.02 (0.02)	-0.04 (0.03)		-0.03 (0.02)	-0.02 (0.03)	-0.02 (0.03)	-0.05 (0.04)		-0.05 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.07 + (0.04)
2008		0.04 (0.03)	0.04 (0.04)	0.04 (0.04)	0.08 + (0.05)		0.06 + (0.04)	0.05 (0.04)	0.05 (0.04)	0.09 + (0.05)		0.05 (0.04)	0.04 (0.04)	0.05 (0.04)	0.1 (0.06)
2009		0.1 ** (0.03)	0.1 * (0.04)	0.08 + (0.04)	0.07 (0.15)		0.11 ** (0.03)	0.1 * (0.04)	0.08 + (0.05)	0.04 (0.16)		0.12 ** (0.04)	0.12 * (0.04)	0.09 + (0.05)	0.06 (0.17)
2010		0.02 (0.09)	0.01 (0.09)	-0.02 (0.10)	-0.06 (0.19)		0.03 (0.10)	0.02 (0.10)	-0.01 (0.11)	-0.09 (0.20)		0.02 (0.10)	0.01 (0.11)	-0.02 (0.12)	-0.09 (0.21)
2011		0.05 (0.03)	0.04 (0.04)	0.03 (0.04)	0 (0.14)		0.06 + (0.04)	0.06 (0.04)	0.04 (0.04)	-0.02 (0.15)		0.06 (0.04)	0.06 (0.05)	0.04 (0.05)	-0.01 (0.15)
Per-Child State Spending on CCDF		0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)		0 (0.00)	0 + (0.00)	0 (0.00)	0 (0.00)
Per-Child State Spending on Head Start		0 *** (0.00)	0 *** (0.00)	0 *** (0.00)	0 ** (0.00)		0 *** (0.00)	0 *** (0.00)	0 *** (0.00)	0 ** (0.00)		0 *** (0.00)	0 *** (0.00)	0 *** (0.00)	0 * (0.00)
Per-Pupil State Spending on K-12				0 (0.00)	0 (0.00)			0 (0.00)	0 (0.00)	0 (0.00)			0 (0.00)	0 (0.00)	0 (0.00)
Total Enrollment in K-12				0 (0.00)	0 (0.00)			0 (0.00)	0 (0.00)	0 (0.00)			0 (0.00)	0 + (0.00)	0 (0.00)
State GDP Per Capita				0 (0.00)	0 + (0.00)			0 (0.00)	0 (0.00)	0 + (0.00)			0 (0.00)	0 (0.00)	0 * (0.00)
State Unemployment Rate				0.02 (0.04)	0.03 (0.04)			0.03 (0.04)	0.03 (0.04)	0.03 (0.04)			0.03 (0.04)	0.03 (0.04)	0.04 (0.04)
Female Labor Force Participation Rate				-0.03 * (0.01)	-0.03 * (0.01)			-0.03 * (0.01)	-0.03 * (0.01)	-0.03 * (0.01)			-0.03 * (0.01)	-0.03 * (0.01)	-0.02 (0.02)
School Finance Oversight Involving Pre-K				0.21 (0.26)	0.17 (0.27)			0.17 (0.27)	0.17 (0.27)	0.17 (0.27)			0.17 (0.27)	0.17 (0.27)	0.36 (0.25)
Constant	8.29 *** (0.08)	8.27 *** (0.08)	8.11 *** (0.10)	7.66 *** (0.33)	8.76 *** (0.79)	8.29 *** (0.08)	8.27 *** (0.08)	8.11 *** (0.10)	7.68 *** (0.35)	8.64 *** (0.80)	8.29 *** (0.08)	8.28 *** (0.08)	8.1 *** (0.10)	7.51 *** (0.40)	8.05 *** (1.13)
Observations (N)	385	385	385	385	385	365	365	365	365	365	335	335	335	335	335
States (N)	40	40	40	40	40	39	39	39	39	39	36	36	36	36	36
R-Squared	0	0.01	0.18	0.23	0.32	0	0.01	0.18	0.23	0.33	0.01	0.02	0.21	0.27	0.38

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars.

Appendix Table 2. Predictors of Per-Child State Spending on Pre-Kindergarten, 2002-2011: Time-Invariant Program Approach

	<i>Universal versus Targeted</i>					<i>Early Universal (Started in or before 2002) versus Targeted</i>					<i>Late Universal (Started after 2002) versus Targeted</i>				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Universal Pre-Kindergarten	-582.16 (476.30)	-615.43 (486.48)	-240.53 (499.14)	-568.91 (669.82)	-614.01 (571.21)	-392.54 (479.41)	-388.42 (485.49)	36.6 (533.14)	-312.62 (752.99)	-373.95 (716.54)	-1174.73 + (586.91)	-1368.63 * (583.39)	-1133.22 * (440.13)	-1544.78 ** (553.50)	-1462.68 *** (355.16)
2002		17.99 (206.58)	-704.13 + (391.23)	32.32 (656.33)	-647.59 (385.36)		-23.05 (210.94)	-781.52 + (389.08)	-55.93 (658.90)	-718.13 + (390.82)		-64.63 (239.07)	-848.32 * (387.01)	164.7 (741.60)	-588.62 (417.61)
2003		-107.17 (149.39)	-143.89 (139.20)	77.98 (233.39)	-459.56 (328.55)		-148.21 (152.62)	-200.08 (140.75)	22.49 (242.66)	-550.85 (350.12)		-157.62 (171.91)	-204.43 (160.03)	127.3 (291.71)	-546.34 (382.20)
2004		-120.49 (125.96)	-123.42 (113.89)	66.77 (187.19)	-396.48 (260.18)		-161.53 (125.31)	-179.45 (108.03)	11.93 (190.64)	-474.45 + (272.82)		-215.37 (139.76)	-226.75 + (120.50)	56.52 (228.05)	-503.79 + (296.18)
2005		-68.78 (163.86)	4.84 (140.29)	81.12 (151.61)	-189.93 (235.35)		-108.81 (166.55)	-48.05 (140.17)	30.82 (152.03)	-258.26 (246.95)		-172.96 (188.89)	-95.41 (156.04)	23.91 (173.57)	-303.69 (285.29)
2006		-119.31 (70.84)	-56.23 (88.28)	-25.8 (86.52)	-153.8 (114.94)		-121.9 + (71.30)	-78.83 (87.90)	-56.78 (77.42)	-200.14 (123.84)		-194.26 * (82.56)	-122.96 (100.40)	-72.71 (94.82)	-244.61 + (125.55)
2008		196.13 (151.65)	160.47 (166.63)	102.22 (168.86)	190.41 (217.98)		243.15 (160.78)	209.32 (176.83)	150.95 (178.74)	227.84 (222.68)		209.62 (175.36)	164.52 (195.04)	80 (198.46)	187.23 (267.19)
2009		472.46 ** (150.15)	482.25 * (180.09)	270.39 (232.70)	-165.19 (605.07)		443.85 ** (152.62)	458.51 * (189.10)	249.89 (238.47)	-287.41 (607.57)		515.46 ** (170.81)	528.77 * (208.97)	227.68 (278.20)	-438.59 (651.27)
2010		442.1 * (191.16)	410.53 + (213.59)	162.94 (286.10)	-478.22 (688.17)		480.11 * (206.99)	446.61 + (233.62)	201.51 (302.05)	-560.65 (700.72)		472.97 * (217.27)	433.52 + (247.03)	84.91 (341.75)	-855.21 (734.44)
2011		251.45 + (133.37)	245.6 (178.10)	77.67 (190.71)	-501.17 (582.41)		287.74 + (143.74)	280.11 (194.65)	101.06 (209.74)	-564.88 (596.75)		286.92 + (150.80)	273.66 (206.80)	50.27 (217.54)	-801.49 (642.79)
Per-Child State Spending on CCDF			0.22 + (0.12)	0.06 (0.17)	0.11 (0.10)		0.22 + (0.12)	0.07 (0.17)	0.1 (0.10)			0.24 * (0.11)	0.02 (0.18)	0.02 (0.11)	0.02 (0.11)
Per-Child State Spending on Head Start			1.01 *** (0.19)	0.92 ** (0.27)	0.82 ** (0.29)		1.01 *** (0.19)	0.93 ** (0.27)	0.8 ** (0.29)			1.03 *** (0.19)	0.91 ** (0.30)	0.71 ** (0.33)	0.71 * (0.33)
Per-Pupil State Spending on K-12				0.27 (0.23)	0.1 (0.12)			0.27 (0.24)	0.11 (0.13)					0.38 (0.29)	0.2 (0.12)
Total Enrollment in K-12				0 (0.00)	0 (0.00)			0 (0.00)	0 (0.00)					0 (0.00)	0 (0.00)
State GDP Per Capita				0.07 + (0.04)					0.08 + (0.04)						0.1 * (0.05)
State Unemployment Rate				194.93 (147.38)					221.15 (154.51)						274.51 + (151.57)
Female Labor Force Participation Rate				-122.18 * (56.75)					-120.2 * (55.42)						-113.56 (79.70)
School Finance Oversight Involving Pre-K				1947.54 (1542.84)					1776.81 (1564.63)						3150.1 * (1226.30)
Constant	4530.51 *** (411.90)	4430.62 *** (416.79)	3571.08 *** (434.66)	973.31 (2074.73)	6066.81 + (3321.01)	4530.51 *** (412.38)	4437.26 *** (417.97)	3571.97 *** (436.52)	980.58 (2162.57)	5551.48 (3310.09)	4530.51 *** (412.80)	4458.12 *** (420.73)	3550.1 *** (436.68)	-259.03 (2647.14)	3027.45 (4494.98)
Observations (N)	355	355	355	355	355	339	339	339	339	339	305	305	305	305	305
States (N)	39	39	39	39	39	36	36	36	36	36	34	34	34	34	34
R-Squared	0.01	0.02	0.25	0.32	0.47	0	0.02	0.25	0.32	0.47	0.01	0.03	0.27	0.38	0.59

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars.

Appendix Table 3. Effects of the 2008 Recession on Log Per-Child State Spending on Pre-Kindergarten, by Program Approach

	<i>Universal versus Targeted</i>		<i>Early Universal (Started in or before 2002) versus Targeted</i>		<i>Late Universal (Started after 2002) versus Targeted</i>	
	Base Model	With Controls	Base Model	With Controls	Base Model	With Controls
2002	-0.032 (0.065)	0.055 (0.100)	-0.032 (0.065)	0.055 (0.100)	-0.032 (0.065)	0.108 (0.103)
2003	-0.05 (0.054)	-0.026 (0.085)	-0.05 (0.054)	-0.025 (0.087)	-0.05 (0.054)	0.006 (0.089)
2004	-0.05 (0.040)	-0.043 (0.080)	-0.05 (0.040)	-0.044 (0.081)	-0.05 (0.040)	-0.018 (0.084)
2005	-0.047 (0.048)	-0.048 (0.069)	-0.047 (0.048)	-0.049 (0.069)	-0.047 (0.048)	-0.031 (0.071)
2006	-0.053 (0.028)	-0.066 (0.041)	-0.053 (0.028)	-0.067 (0.041)	-0.053 (0.028)	-0.062 (0.043)
2008	0.053 (0.044)	0.106 (0.066)	0.053 (0.044)	0.111 (0.068)	0.053 (0.044)	0.109 (0.075)
2009	0.102 (0.042)	0.253 (0.125)	0.102 (0.042)	0.268 (0.131)	0.102 (0.042)	0.249 (0.147)
2010	-0.048 (0.127)	0.119 (0.129)	-0.048 (0.127)	0.134 (0.133)	-0.048 (0.127)	0.116 (0.139)
2011	0.001 (0.042)	0.174 (0.119)	0.001 (0.042)	0.187 (0.125)	0.001 (0.042)	0.181 (0.141)
2002*Universal Pre-Kindergarten	0.032 (0.116)	0.081 (0.148)	0.039 (0.108)	0.076 (0.140)		
2003*Universal Pre-Kindergarten	-0.027 (0.087)	-0.006 (0.090)	-0.02 (0.080)	-0.013 (0.081)		
2004*Universal Pre-Kindergarten	0.029 (0.053)	0.05 (0.062)	0.036 (0.052)	0.043 (0.059)		
2005*Universal Pre-Kindergarten	0.064 (0.049)	0.082 (0.055)	0.071 (0.049)	0.076 (0.051)		
2006*Universal Pre-Kindergarten	0.049 (0.031)	0.043 (0.033)	0.061 (0.032)	0.059 (0.032)	0.009 (0.030)	-0.081 (0.077)
2008*Universal Pre-Kindergarten	-0.074 (0.062)	-0.082 (0.061)	-0.029 (0.051)	-0.055 (0.050)	-0.148 (0.100)	-0.134 (0.114)
2009*Universal Pre-Kindergarten	-0.016 (0.075)	-0.027 (0.072)	-0.062 (0.060)	-0.097 (0.064)	0.06 (0.141)	0.076 (0.119)
2010*Universal Pre-Kindergarten	0.076 (0.133)	0.064 (0.130)	0.093 (0.142)	0.06 (0.128)	0.049 (0.128)	0.053 (0.169)
2011*Universal Pre-Kindergarten	-0.025 (0.051)	-0.04 (0.058)	-0.008 (0.061)	-0.052 (0.073)	-0.052 (0.044)	-0.013 (0.078)
Per-Child State Spending on CCDF		0 (0.000)		0 (0.000)		0 (0.000)
Per-Child State Spending on Head Start		0 (0.000)		0 (0.000)		0 (0.000)
Per-Pupil State Spending on K-12		0 (0.000)		0 (0.000)		0 (0.000)
Total Enrollment in K-12		0 (0.000)		0 (0.000)		0 (0.000)
State GDP Per Capita		0 (0.000)		0 (0.000)		0 (0.000)
State Unemployment Rate		-0.033 (0.020)		-0.035 (0.021)		-0.036 (0.023)
Female Labor Force Participation Rate		-0.003 (0.017)		-0.003 (0.017)		-0.008 (0.019)
School Finance Oversight Involving Pre-K		0.02 (0.100)		0.023 (0.100)		0.127 (0.061)
Constant	8.292 (0.025)	7.925 (1.168)	8.301 (0.026)	7.957 (1.184)	8.288 (0.029)	7.823 (1.254)
Observations (N)	355	355	339	339	305	305
States (N)	39	39	36	36	34	34
R-Squared	0.807	0.819	0.806	0.819	0.809	0.826

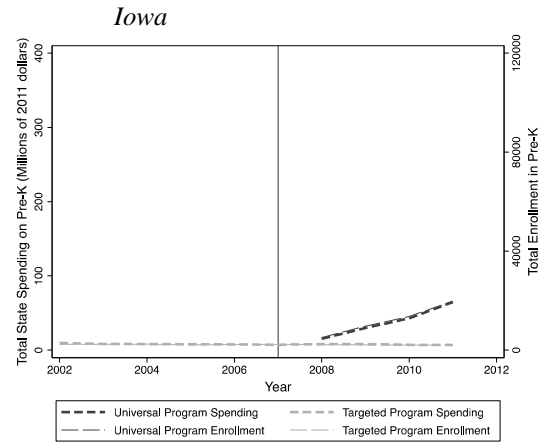
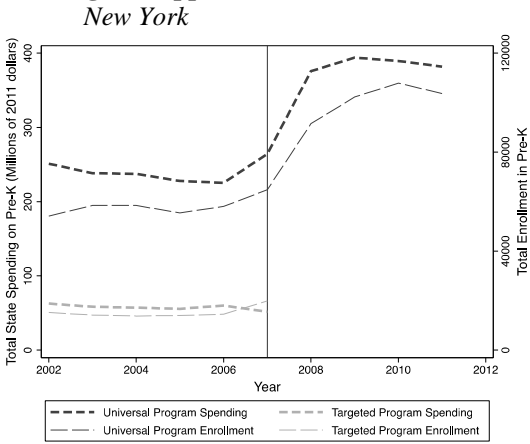
Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars. All models include state fixed-effects. Sample excludes data from Illinois and Massachusetts in the years in which their programs were targeted (2002-2006) and from Iowa in all years.

Appendix Table 4. Effects of the 2008 Recession on Per-Child State Spending on Pre-Kindergarten as a Percentage of GDP Per Capita, by Program Approach

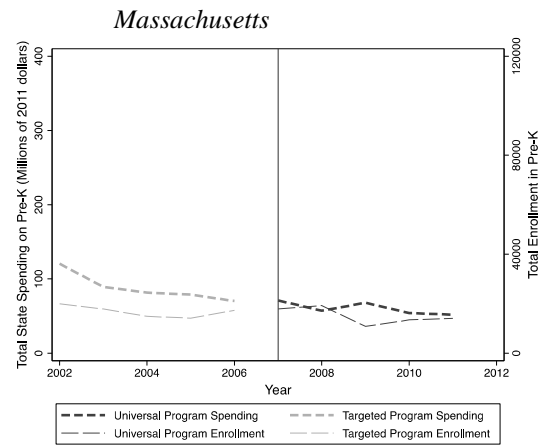
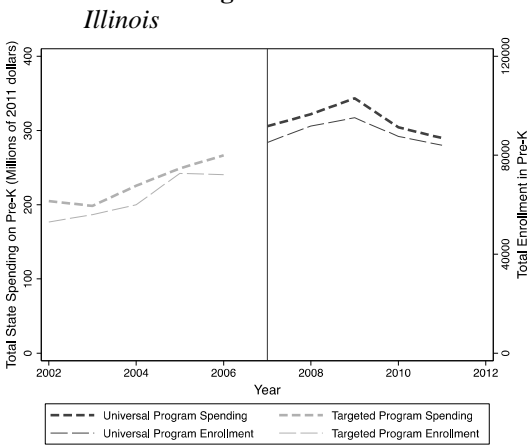
	<i>Universal versus Targeted</i>		<i>Early Universal (Started in or before 2002) versus Targeted</i>		<i>Late Universal (Started after 2002) versus Targeted</i>	
	With		With		With	
	Base Model	Controls	Base Model	Controls	Base Model	Controls
2002	-0.007 (0.006)	0.009 (0.009)	-0.007 (0.006)	0.008 (0.009)	-0.007 (0.006)	0.014 (0.008)
2003	-0.008 + (0.004)	0.001 (0.008)	-0.008 + (0.004)	0.001 (0.008)	-0.008 + (0.004)	0.005 (0.007)
2004	-0.009 * (0.004)	0 (0.007)	-0.009 * (0.004)	0 (0.007)	-0.009 * (0.004)	0.003 (0.007)
2005	-0.007 (0.005)	-0.001 (0.006)	-0.007 (0.005)	-0.001 (0.006)	-0.007 (0.005)	0.001 (0.006)
2006	-0.006 ** (0.002)	-0.003 (0.003)	-0.006 ** (0.002)	-0.004 (0.003)	-0.006 ** (0.002)	-0.003 (0.003)
2008	0.012 * (0.005)	0.008 (0.006)	0.012 * (0.005)	0.009 (0.006)	0.012 * (0.005)	0.007 (0.006)
2009	0.02 *** (0.005)	0.022 * (0.010)	0.02 *** (0.005)	0.022 * (0.011)	0.02 *** (0.005)	0.019 (0.012)
2010	0.014 ** (0.005)	0.018 (0.011)	0.014 ** (0.005)	0.019 (0.011)	0.014 ** (0.005)	0.016 (0.012)
2011	0.013 *** (0.004)	0.015 (0.009)	0.013 *** (0.004)	0.016 (0.010)	0.013 *** (0.004)	0.014 (0.010)
2002*Universal Pre-Kindergarten	-0.005 (0.013)	-0.001 (0.014)	-0.003 (0.012)	0.001 (0.013)		
2003*Universal Pre-Kindergarten	-0.008 (0.009)	-0.007 (0.009)	-0.006 (0.008)	-0.006 (0.007)		
2004*Universal Pre-Kindergarten	0.001 (0.005)	0.001 (0.005)	0.002 (0.004)	0.002 (0.005)		
2005*Universal Pre-Kindergarten	0.004 (0.005)	0.003 (0.006)	0.005 (0.005)	0.005 (0.005)		
2006*Universal Pre-Kindergarten	0.003 (0.002)	0.002 (0.003)	0.004 + (0.002)	0.004 + (0.002)	0 (0.002)	-0.003 (0.006)
2008*Universal Pre-Kindergarten	-0.007 (0.006)	-0.007 (0.006)	-0.003 (0.006)	-0.004 (0.006)	-0.014 (0.008)	-0.014 (0.009)
2009*Universal Pre-Kindergarten	-0.003 (0.008)	-0.004 (0.008)	-0.006 (0.007)	-0.007 (0.009)	0.002 (0.013)	0 (0.011)
2010*Universal Pre-Kindergarten	-0.002 (0.007)	-0.002 (0.008)	0.002 (0.009)	0.002 (0.010)	-0.007 (0.006)	-0.01 (0.008)
2011*Universal Pre-Kindergarten	-0.004 (0.006)	-0.005 (0.006)	-0.002 (0.007)	-0.002 (0.008)	-0.008 + (0.005)	-0.009 (0.006)
Per-Child State Spending on CCDF		0 * (0.000)		0 * (0.000)		0 * (0.000)
Per-Child State Spending on Head Start		0 (0.000)		0 (0.000)		0 (0.000)
Per-Pupil State Spending on K-12		0 (0.000)		0 (0.000)		0 + (0.000)
Total Enrollment in K-12		0 (0.000)		0 (0.000)		0 (0.000)
State GDP Per Capita		0 (0.000)		0 (0.000)		0 + (0.000)
State Unemployment Rate		-0.003 (0.002)		-0.003 (0.002)		-0.003 (0.002)
Female Labor Force Participation Rate		0.002 (0.001)		0.002 (0.001)		0.001 (0.001)
School Finance Oversight Involving Pre-K		0 (0.009)		0 (0.009)		0.008 (0.005)
Constant	0.096 *** (0.002)	0.107 (0.096)	0.097 *** (0.002)	0.108 (0.098)	0.095 *** (0.003)	0.103 (0.098)
Observations (N)	355	355	339	339	305	305
States (N)	39	39	36	36	34	34
R-Squared	0.883	0.891	0.884	0.891	0.882	0.895

Notes: + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001. Standard errors are clustered by state. All expenditures have been adjusted for inflation using the Consumer Price Index and are in 2011 dollars. All models include state fixed-effects. Sample excludes data from Illinois and Massachusetts in the years in which their programs were targeted (2002-2006) and from Iowa in all years.

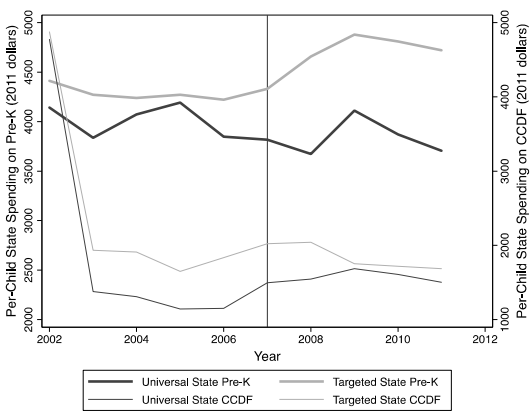
Appendix Figures 1 and 2. Total State Spending on Pre-Kindergarten and Enrollment among States with Two Program Approaches in the Same Year



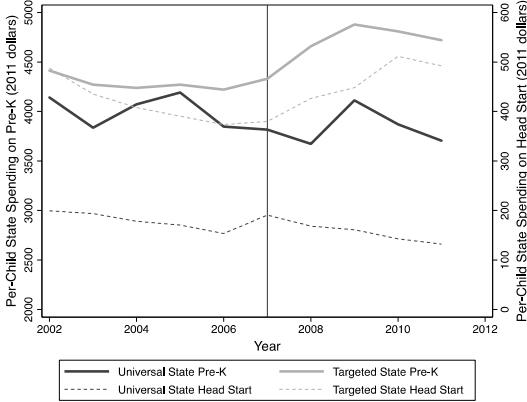
Appendix Figures 3 and 4. Total State Spending on Pre-Kindergarten and Enrollment among States that Transition from Targeted to Universal Provision



Appendix Figure 5. Average Per-Child State Spending on Pre-Kindergarten and CCDF, by Program Approach



Appendix Figure 6. Average Per-Child State Spending on Pre-Kindergarten and Head Start, by Program Approach



Appendix Figure 7. Average Per-Child State Spending on Pre-Kindergarten and K-12, by Program Approach



Appendix Figure 8. Average Per-Child State Spending on Pre-Kindergarten and GDP Per Capita, by Program Approach

