

Does Access to Free Prekindergarten Increase Maternal Labor Supply?

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Childcare is one of the primary reasons for low labor force participation among women in the U.S.

2019 Percent (%) of U.S. Prime Working Age (25-54) Women and Men that are..

	Women	Men	
Participating in the Labor Force	76.0	89.1	} 13.1ppt gap
Not in the Labor Force <i><u>because taking care of dependents</u></i>	13.2	1.2	

Source: Current Population Survey. Authors' calculations.

□ This leads to unequal labor market opportunities and gender wage gaps

- *Waldfogel (1997); Bertrand, Goldin, and Katz (2010); Kleven, Landais, and Sogaard (2019)*

Early Childhood Education is on the Policy Agenda of the Current Administration

□ Expansion of publicly financed prekindergarten (pre-K) across the U.S.

- *Obama's "Preschool for All" → for low-income 4-year-olds*
- *Biden's "The American Families Plan" → for all 3- and 4-year-olds*

In this paper we ask two questions:

- 1. Does access to free pre-K increase labor supply of mothers?**
- 2. What demographic groups are affected the most?**

Our analysis..

- Accounts for the most recent state-level policy changes AND income eligibility rules
- Uses novel DiD design utilizing the panel structure of the CPS
- Exploits the variation in pre-K rules across all U.S. states

Preview of the Results

Access to free pre-K..

1. Increases maternal labor force participation (**by 1.7 ppt** on average)
2. But only for certain groups:
 - Those with college degree
 - White, non-Hispanic and Other, non-Hispanic
 - Those who live in metropolitan area
 - Low-income (<200% FPL) and high-income (400%+ FPL)

Related Evidence – Effect of Subsidized Childcare on the LFP

❑ Effect of targeted childcare subsidies

Granger and Cryton (1999); Blau and Tekin (2007); Meyers et al. (2002)

❑ Effect of Head Start

Russo (2017); Sabol and Chase-Lansdale (2015)

❑ Effect of Kindergarten

Casio (2009); Gelbach (2002); Fitzpatrick (2011); Cannon et al. (2006)

Positive effect on the LFP

Positive effect for single mothers

No effect for married mothers

❑ Effects of Pre-K programs outside of the U.S.

Baker et al. (2008); Havnes and Mogstad (2011); Schlosser (2005)

Positive effect on the LFP

❑ Effects of Pre-K programs in the U.S.

Fitzpatrick (2010); Sall (2014)

Inconclusive

Pre-K Across the U.S.

- Voluntary* free preschool program
- Funded by a state government
- Availability of Pre-K **varies by a school district**
- Assume Pre-K is available if enrollment >1%
 - **43 states + D.C.** have Pre-K programs for 4-year-olds
 - **31 states + D.C.** have Pre-K programs for 3-year-olds

Pre-K Program Type	States with Programs for 4-Year-Olds	States with Programs for 3-Year-Olds
No program	Idaho, Indiana, New Hampshire, South Dakota, Utah, Wyoming	Alabama, Florida, Georgia, Hawaii, Idaho, Indiana, Louisiana, Maine, Michigan, Mississippi, Nevada, New Hampshire, North Carolina, North Dakota, Rhode Island, South Dakota, Utah, Virginia, Wyoming
Age and Income Eligibility Requirements	Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Hawaii, Kansas, Kentucky, Louisiana, Maryland, Michigan, Nebraska, New Jersey, North Carolina, North Dakota, Ohio, Oregon, South Carolina, Tennessee, Texas, Virginia, Washington	Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Kansas, Kentucky, Maryland, Nebraska, Ohio, Oregon, South Carolina, Tennessee, Texas, Washington, Minnesota, Wisconsin
Age and Other Eligibility Requirements	Alaska, Illinois, Maine, Mississippi, Nevada	Alaska, Illinois
Age Eligibility	Alabama, District of Columbia, Florida, Georgia, Iowa, Massachusetts, Minnesota, Missouri, Montana, New York, New Mexico, Oklahoma, Pennsylvania, Rhode Island, Vermont, West Virginia, Wisconsin	District of Columbia, Iowa, Massachusetts, Missouri, Montana, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Vermont, West Virginia

Identification Idea

Shock – child becomes eligible for Pre-K (turns 3 or 4 depending on state)

Treatment Group

- Mothers
- In states with pre-K,
- Satisfy income eligibility, and
- Whose child is age-eligible

Expect increase in
the labor supply

Control Group

- Mothers
- In states without pre-K, or
- Not income eligible, or
- Whose child is not age eligible

Expect no effect on
the labor supply

Specification

$$y_{ist} = \beta_0 + \beta_1 (\underbrace{preK_{st} \times A_{ist} \times I_{is}}_{\text{"Pre-K-eligible"}}) + A_{ist} + u_{st} + \delta_t + \mu_i + \epsilon_{ist}$$

- y – labor force participation
- $preK$ - indicator that a state offers pre-K program
- A - a child is age-eligible
- I - family satisfies income eligibility
- u - state-level unemployment rate
- δ - year fixed effect
- μ - **individual fixed effect**

OLS + Cluster SEs at the individual level

Data

- ❑ 2002-2019 Monthly Current Population Survey (CPS)
- ❑ Respondents are matched over time (*panel data*)
- ❑ Married and single mothers
- ❑ Prime working age (25 to 54)
- ❑ With exactly one child between ages 2 and 5

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Income				x												x
Employment Status	x	x	x	x									x	x	x	x
Age of Children	x	x	x	x									x	x	x	x

Demographic Group	Sample Size	Coefficient on $preK_{st} \times A_{ist} \times I_{is}$ (Standard Error)
All	23,048	0.017** (0.01)
Not Married	5,635	-0.014 (0.02)
Married	17,413	0.025*** (0.01)
Less than College	12,000	0.020 (0.010)
College +	11,048	0.030*** (0.009)
White, non-Hispanic	15,401	0.016** (0.01)
Black, non-Hispanic	2,121	-0.020 (0.02)
Other, non-Hispanic	2,398	0.043* (0.02)
Hispanic	3,128	0.014 (0.02)
Metro	18,810	0.017** (0.01)
Non-Metro	4,070	0.018 (0.02)
<200% FPL	5,406	0.032* (0.02)
200%-400% FPL	7,552	-0.001 (0.01)
+400% FPL	10,090	0.017* (0.01)

Key Result

- Overall, availability of Pre-K increases maternal LFP by 1.7 ppt

Heterogeneous Effect by Demographic Groups

- Only married mothers
- Those with college degree
- White, non-Hispanic & Other, non-Hispanic
- Those who live in metropolitan area
- Low-income (<200% FPL) and high-income (+400% FPL)

Demographic Group	Coefficient on $preK_{st} \times A_{ist} \times I_{is}$ (Standard Error)			
	Placebo Test 1: Comparing 6- and 5-year-olds	Placebo Test 2: Comparing 7- and 6-year-olds	Placebo Test 3: Comparing 8- and 7-year-olds	Placebo Test 4: Comparing 9- and 8-year-olds
All	-0.012 (0.011)	0.004 (0.012)	0.009 (0.0122)	-0.012 (0.013)
Not Married	-0.029* (0.018)	0.027 (0.020)	-0.036* (0.021)	-0.037* (0.019)
Married	-0.003 (0.013)	-0.009 (0.015)	0.024 (0.015)	-0.000 (0.017)
Less than College	-0.020 (0.015)	0.0142 (0.015)	-0.001 (0.016)	-0.023 (0.017)
College +	0.001 (0.015)	-0.014 (0.020)	0.037** (0.018)	0.004 (0.019)
White, non- Hispanic	0.002 (0.012)	-0.012 (0.015)	0.013 (0.015)	-0.032** (0.016)
Black, non- Hispanic	-0.057 (0.037)	-0.047 (0.029)	-0.001 (0.041)	0.031 (0.033)
Other, non- Hispanic	-0.034 (0.039)	0.067 (0.050)	-0.038 (0.032)	0.015 (0.045)
Hispanic	-0.052 (0.037)	0.103*** (0.032)	-0.024 (0.036)	0.028 (0.034)
Metro	-0.028** (0.012)	0.011 (0.013)	0.005 (0.014)	-0.015 (0.014)
Non-Metro	0.027 (0.021)	-0.028 (0.033)	-0.003 (0.026)	-0.009 (0.034)
<200% FPL	-0.034 (0.024)	0.005 (0.031)	0.044 (0.028)	-0.041 (0.029)
200%-400% FPL	-0.001 (0.018)	0.012 (0.018)	0.002 (0.021)	-0.003 (0.022)
+400% FPL	-0.010 (0.017)	-0.005 (0.019)	-0.025 (0.019)	0.004 (0.020)

Series of Placebo Tests

- ❑ “Fake” treatment groups”: six-, seven-, eight-, and nine-year-olds
- ❑ These age groups have access to compulsory schooling
- ❑ Only two subsamples are statistically significant

Estimated Effects by Marital Status and Education

Demographic Group	Sample Size	Coefficient on $preK_{st} \times A_{ist} \times I_{is}$ (Standard Error)
Not Married, Less than College	4,107	-0.029 (0.018)
Not Married, College +	1,528	0.055** (0.024)
Married, Less than College	7,893	0.021 (0.013)
Married, College +	9,520	0.026** (0.01)

Access to Pre-K

- ❑ Increases LFP of single mothers with college degree by **5.5 ppt**
- ❑ Increases LFP of married mothers with college degree by **2.6 ppt**
- ❑ Has **no effect** on LFP of married and single mothers without college degree

Note: *, **, *** indicate statistical significance at 10%, 5%, and 1% respectively

Take-aways:

Access to free pre-K..

1. Increases overall maternal labor force participation

2. But only for certain groups:

- Those with college degree
- White, non-Hispanic and Other, non-Hispanic
- Those who live in metropolitan area
- Low-income (<200% FPL) and high-income (+400% FPL)

Important for understanding distributional effects of the Pre-K policy