

## **Afterschool Child Care Subsidies and Maternal Employment Stability among Low-Income Populations**

### *Background*

Empirical studies have shown that the high cost of substitute child care pressures parents (especially mothers) to accommodate work arrangements to child afterschool time either by reducing work hours or adjusting work shifts, activities regarded as harmful to employment stability (Kimmel & Powell, 2001). Stable employment is crucial for wage growth for low-income populations (Blank, 2007). Childcare subsidy policies are designed to promote employment participation and stability. Changes in the spending of child care subsidy explained an estimated 7 percent of the increase in employment among single mothers with children under 13 (Bainbridge, Meyers & Waldfogel, 2003). Focusing on afterschool child care and employment stability, Tekin (2004) finds that child care subsidies are positively related to standard work among single mothers. Child care subsidies are associated with a 6 percentage point increase in the probability of single mothers working at standard job.

Child Care and Development Fund (CCDF) is the largest federal childcare funding. It is estimated that 35 percent of children served through CCDF subsidies are receiving school-age care (National Child Care Information and Technical Assistance Center, 2007). According to the information provided by Child Care Bureau shows that 1,746,100 children aged 5 to 12 were served by the CCDF in 2005 (Child Care Bureau, 2007). This means that among the whole 5- to 12-year-old child population, about 5.5 percent of them were served by CCDF. However, only about 15 percent of eligible families did use child care subsidy (Mezey, Greenberg, & Schumacher, 2003). Those with children age 6 and older are least likely to receive a subsidy (Blau & Tekin, 2001).

Insufficient funding, fragmentary administration structure, as well as insufficient regulation of child care providers, weaken the effects of child care subsidy policies. Also, state governments have substantial discretion in formulating child care subsidy policies and vary on important policy characteristics. This study decomposes the components of child care subsidy policies. Specifically, it hypothesizes that the income eligibility level set by states (the higher the level means the wider the coverage range of eligible recipients) influences the likelihood of full time work (an indicator of employment stability) among low-income mothers through affecting their use of center based afterschool child care.

### *Data*

Using individual data from *National Survey of American Families 2002* (NSAF2002, survey was conducted in 13 states, including Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, Texas, Washington, and Wisconsin) and child care policy data provided by the Child Care Bureau, 4,401 working mothers who had at least one biological child aged 6 to 11 years old (eligible for child care subsidy) are selected into the sample. In order to correct the sample selection bias caused by the unmeasured factors, such as the employment motif that may explain subsidy application and employment participation, this study uses Instrumental Variable method (Bivariate Probit Model) to specify the proposed model. The key exogenous

predictor is the income eligibility level of child care subsidy set by states (instrument variable—IV). Other state level control variables (controlling for the state economic level and distribution of different types of child care) are 85 percent of state median income, 85 percent of state median income as a percent of 1999 federal poverty, and percent of children served at child's home, family home, group home, or childcare center across 13 states. For individual level data, this study controls for mothers demographic characteristics such as age, race and ethnicity, education, health condition, immigration status, marital status, number of children, as well as child characteristics such as age, health condition, behavior problem index, and number of relatives (including the biological father) at home. The outcome variable is whether mother worked full time in 2002.

Table 1 reports the sample characteristics. Women 21- to 57- years old were selected in the sample. About 65 percent of them were married. More than half of the respondents had high school or higher education. Eighty-four percent of the sample were white females. About 6 percent had health problem that may prevent labor force participation. About 64 percent of the respondents worked full time. Since the sample is restricted to working mothers, the overall labor force participation may be more active than the labor force participation among all women. Therefore, it is possible that the full time employment rate is higher as in this sample than the full time employment rate among all female population in the US (46 percent, Bureau of Labor Statistics, 2007). Twenty-four percent of the respondents' children went to before/afterschool center care. The income eligibility level of child care subsidy ranges from 37 percent to 85 percent of the state median income.

#### *Preliminary Findings*

The analysis results (Table 2) show that the higher the level of income eligibility set by the state, the higher likelihood of center-based child care use (probit coefficient is .113), as well as the stronger effect of center-based child care on full time work decision (probit coefficient increases from .583 to .864). The probit coefficients cannot be interpreted as probability directly (It is possible to calculate the marginal effects; also, the increase of probit coefficients indicates the increase of the probability). Therefore, the author compares the direction and magnitude of the probit coefficients of afterschool child care participation in different models. It is bigger in the model with income eligibility level as the instrumental variable (Model 3) than that of the model without (Model 2). The first stage model also shows a positive correlation between income eligibility level and the afterschool child care participation. Therefore, the overall results show that the higher the level of the income eligibility as a percent of the state median income, the more likely the child would participate in afterschool child care programs, and the effect of the afterschool child care program participation on the likelihood of mother's full time job is stronger.

#### *Additional Analyses*

Current analysis focuses on the association between income eligibility level of child care subsidy set by states and working mothers' employment status. Preliminary work did not consider not working mothers. Future analysis will include this population. Additional analyses will include more indicators of child care subsidy policies, such as the accessibility (application process) and initiatives on quality improvement of child care subsidy policies. Child care subsidy policies are also designed to benefit child development. The NSAF2002 data have rich information on child well-beings. Future analysis will also explore the impacts of child care subsidies on child development.

## References

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Table 1. Sample Characteristics

Variables (Sample Size: 4,401)	Mean	Std. Dev.	Min	Max
<b>Biological Mothers</b>				
<i>Demographic Information</i>				
Age of mother	36.266	(6.319)	21	57
Marital status	.650	(.477)	0	1
Highest grade or level of school	7.095	(3.156)	1	12
white	.835	(.372)	0	1
asian	.023	(.150)	0	1
black	.129	(.335)	0	1
native	.014	(.117)	0	1
Has health condition that limits work	.065	(.247)	0	1
American citizen	.926	(.262)	0	1
Number of children 5 years or younger	.461	(.689)	0	5
Number of children 6~17 years old	1.694	(.818)	1	7
<i>Employment Status</i>				
Full-time or part-time worker this year	.640	(.480)	0	1
<b>Children</b>				
Child had health condition that limited activities	.106	(.308)	0	1
Age of focal child 2	8.493	(1.708)	6	11
Number of relatives in HH	3.050	(1.210)	1	14
Age 6-11 Behavioral Problems Index score	16.006	(2.013)	6	18
<b>Child Care</b>				
Child went to Before/After School Center care	.239	(.427)	0	1
<b>State CCDF &amp; Percent of Children Served by Types of Care</b>				
Income eligibility level as a % of SMI	.598	(.144)	0.37	0.85
85% of SMI	3366.427	(434.273)	2333	3959
85% of SMI as a percent of 1999 federal poverty	2.841	(.361)	2.02	3.42
cared in child's home	.096	(.093)	0	0.32
cared in family home	.313	(.143)	0.09	0.52
cared in group	.037	(.050)	0	0.17
cared in center	.552	(.203)	0.16	0.87

Table 2. Child Care Subsidies and Maternal Full Time Work

Work Full Time	Model 1: Logit		Model 2: Probit		Model 3: Bivariate Probit Model with IV	
	Odds Ratio	p	Coef.	p	Coef.	p
Center care	2.697	(.242) ***	.583	(.052) ***	.864	(.513) *
Age of mother	.982	(.006) ***	-.011	(.004) ***	-.011	(.004) ***
Marital status	.431	(.039) ***	-.503	(.054) ***	-.483	(.070) ***
Highest grade or level of school	1.011	(.012)	.008	(.007)	.005	(.009)
white (reference category)						
asian	1.621	(.371) **	.277	(.137) **	.285	(.137) **
black	1.565	(.185) ***	.243	(.068) ***	.209	(.096) **
native	.771	(.212)	-.152	(.168)	-.149	(.167)
Has health condition that limits work	.737	(.098) **	-.185	(.080) **	-.175	(.083) **
American citizen	.968	(.130)	-.015	(.081)	-.025	(.082)
Number of children 5 years or younger	.753	(.056) ***	-.168	(.045) ***	-.163	(.046) ***
Number of children 6~17 years old	.785	(.050) ***	-.144	(.039) ***	-.137	(.042) ***
Child had health condition that limited activities	.944	(.111)	-.039	(.071)	-.034	(.071)
Age of focal child 2	1.095	(.023) ***	.055	(.013) ***	.062	(.017) ***
Number of relatives in HH	1.139	(.060) **	.077	(.032) **	.089	(.038) **
Age 6-11 Behavioral Problems Index score	.981	(.018)	-.010	(.011)	-.008	(.011)
<i>State</i>						
85% of SMI	1.000	(.000) **	.000	(.000) **	.000	(.000) *
85% of SMI as a percent of 1999 federal poverty	1.003	(.200)	.017	(.122)	-.005	(.128)
cared in child's home	.321	(.190) *	-.693	(.358) *	-.609	(.395)
cared in family home	1.301	(.559)	.164	(.260)	.100	(.287)
cared in group	.090	(.086) **	-1.456	(.579) **	-1.551	(.598) **
cared in center (reference category)						
Constant			1.653	(.300) ***	1.445	(.507) ***