CHILD CARE SUBSIDY RECEIPT, EMPLOYMENT,
AND CHILD CARE CHOICES OF SINGLE MOTHERS

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ABSTRACT

This paper examines the impact of actual subsidy receipt of single mothers on their joint employment and child care mode decisions in the post-welfare reform environment, which places a high priority on parental choice with the quality and type of care chosen. Results indicate that single mothers are highly responsive to child care subsidies by increasing their employment while moving from parental and relative care to center care in the process.

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I. Introduction and Background

The United States has witnessed a rapid growth in public subsidies for child care in the 1990s. This trend has become even more pronounced since the passage of welfare reform in 1996, which aimed at reducing welfare dependence and increasing employment. In order to reach this goal, the government increased child care funding substantially, and eliminated the fragmentation in the child care system by consolidating the previously existing four main child care funding streams into a single block grant, called the Child Care Development Fund (CCDF). In 1999, child care subsidies were estimated to be around $21 billion (Blau 2001). Today, child care subsidies are considered an integral part of the government efforts to help low income families support themselves by work rather than welfare as well as to support the development of low-income children.

Because child care subsidies are often argued on the basis of increasing employment, majority of the subsidies are in programs with strong employment requirements.[1] While placing restrictions on the use of subsidies with respect to the employment dimension, the current child care system places a high priority on maximizing parental choice with respect to the quality or the type of care chosen. The vast majority of subsidies are distributed through vouchers that parents can use for any legal child care provider, including relatives, in-home caregivers, family child care homes, or centers (Blau 2003, Adams and Rohacek 2002). About 90% of children served by CCDF subsidies in 2000 were served through voucher-based funding, which parents could use in any of the setting listed above (Adams and Rohacek 2002). Child care

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[1] One exception is Head Start, which is designed to support the development of low-income children specifically. Its goal is to subsidize high-quality care and it has no employment or training requirement.

providers must be licensed if state law requires it. If they are exempt from the licensing requirement, they must meet basic health and safety standards. The regulations are determined entirely by states. Although states can impose more stringent requirements, these requirements must continue to accommodate maximum parental choice.

This paper provides evidence on the impact of the actual child care subsidy receipt on the joint employment and child care mode decisions of single mothers in the post-welfare reform period. The child care choices are categorized into four modes: centers, family day care homes, relatives, and parental care. This is the first paper to examine the impact of actual subsidy receipt on the joint employment and child care mode decisions of single mothers of young children.

The evidence of the impact of actual subsidy receipt on the behavior of mothers of young children is limited, mainly because of lack of data on child care subsidies. There are only four studies examining the impact of actual subsidy receipt on the employment decision of mothers and none of them considers the demand for specific child care modes. Meyers, Heintze, and Wolf (2002) examine the impact of subsidy receipt on employment of low-income single mothers in California. Gelbach (2002) estimates the effect of the availability of free kindergarten on employment of mothers of five-year old children. Berger and Black (1992) investigate the impact of two Kentucky child care subsidy programs on employment of low-income single mothers. Blau and Tekin (2003) separately estimate the effects of child care subsidy receipt on the employment, welfare, unemployment, and schooling outcomes of single mothers using data from the National Survey of America's Families. All of these studies find a positive effect of subsidy receipt on the employment decision of mothers. There is also a large number of studies

examining the impact of child care prices on employment and child care mode decisions

of mothers, motivated mainly to infer how child care subsidies would affect behavior.[2]

However, the price or fee effect may not be a proper measure of the child care subsidy

effect if there are substantial costs to taking up a subsidy, such as the stigma of

participating in a means-tested program (Blau 2003).

Most of the literature on the impact of child care costs on employment and child

care choice decisions focuses on married mothers. Another common characteristic of the

previous studies is that, with the exception of Blau and Tekin (2003), they use data from

the pre-welfare reform period. However, the results from the pre-reform studies may not

be a reliable guide to the current subsidy effects because of the substantial changes put in

place to the child care system by welfare reform (Blau 2003).

II. Data and Methodology

This study uses data from the 1999 National Survey of America's Families

(NSAF). The NSAF sample is a representative of the United States population under age

65. Residents of the 13 states and households with income less than 200 percent of the

federal poverty line are over-sampled.[3] The subsidy receipt variable is constructed from

the answers to the question of whether the mother receives any assistance paying for

child care, including assistance from a welfare or social services agency. The NSAF also

provides detailed information on the primary child care arrangement in which the child

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[2] For example, Anderson and Levine (2000), Connelly and Kimmel (1999), Kimmel (1995, 1998), Ribar (1992, 1995), Blau and Robins (1998), Powell (1997, 1998) focus on the employment outcome. Leibowitz, Waite, and Witsberger (1988), Lehrer (1989), Hofferth and Wissoker (1992), Cleveland and Hyatt (1993), Chaplin et al. (1999), and Connelly and Kimmel (2000) estimate models of the demand for specific modes of child care. However, only three studies, Blau and Hagy (1998), Powell (2002), and Michalopoulos and Robins (2002) examine the joint employment and child care mode decisions.
[3] These 13 are Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, Washington, and Wisconsin. They contain more than half of the U.S. population.

spends the most number of hours each week.[4] To be consistent with the literature, the

choice of child care mode is collapsed into four categories: center care, family day care,

relative care, and parental care.[5] One-hundred-thirty-four mothers who reported working

while providing parental care for their children are excluded from the sample. This

exclusion is grounded on the basis that very few single mothers will have that option

available to them and one would expect their decision-making regarding employment and

child care choices to differ from those who do not have that option (Powell 2002).[6] After

applying these criteria, the sample used in the analysis contains 2,226 single mothers with

at least one child under the age of 6. Definitions and descriptive statistics for variables

are displayed in Table 1. About 35 percent of the sample (766 mothers) use parental care.

Among working mothers, 38 percent (551 mothers) use center care, 21 percent (305

mothers) use family day care, and 41 percent (584 mothers) use relative care. About 17

percent of the mothers in the sample report receiving a child care subsidy. The

Administration for Children and Families (2000) predicts that about 12-15 percent of all

eligible families received a CCDF subsidy in 1998-2000. However, the national figure

includes all children under age 13 whereas the sample used in this paper contains only

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[4] In the NSAF, child care information is collected for up to two randomly chosen children, one between
ages 0-5 and the other between ages 6-12. They are called focal children in the NSAF. Most of other
studies use arrangement for the youngest child in each of these age categories because this is what is
provided in their data.
[5] Family day care includes non-relative care in child's home (e.g. care by a baby-sitter) or out of child's
home. This is the typical classification used in previous studies.
[6] There are 72 mothers whose children are enrolled in Head Start. 26 of them reported receiving a subsidy.
These 26 mothers are classified here as subsidy recipients because it is not possible to determine from the
data whether these cases receive an employment-related child care subsidy in addition to Head Start.
Estimation of the models with these cases reclassified as not receiving a subsidy produced similar results.

children under age 6. Thus, the subsidy coverage in the sample is not unreasonable.

Other statistics are also consistent with those usually reported in other studies.[7]

A cross-classification of the four modes with the binary employment decision results in a multinomial choice model with following four alternatives: (1) mother does not work and therefore does not use non-maternal care, (2) mother works and uses center care, (3) mother works and uses family day care, and (4) mother works and uses relative care. Assume that the utility of the ith mother if she chooses alternative j is given by

$$V_{ij} = X_i\beta_j + \alpha_j S_i + \varepsilon_{ij}, \qquad j=1,\ldots,4, \qquad i = 1,\ldots,N \qquad (1)$$

where X_i is a vector of observed characteristics of the mother i such as age, nonwage income, health status, race, ethnicity, region of residence, number of children in different age groups, education, and immigration status. S_i is a binary indicator of subsidy receipt, ε_{ij} is an alternative specific disturbance, and β and α are the parameters to be estimated. It must be noted that a structural model would normally include the wage rate. However, the determinants of the wage rate are substituted into equation (1) since wage effect is not the focus of this paper. Thus, equation (1) is really a quasi-reduced form model.

According to (1), the mother i will choose alternative j if $V_{ij} > V_{ik}$ for all $k \neq j$. Assuming that the ε's are drawn from independent extreme-value distributions, equation (1) can be estimated using a multinomial logit model. However, the coefficient estimate on the subsidy receipt is likely to be biased due to endogeneity for several reasons. For example, mothers with strong preferences for work (alternatives 2-4) may be more motivated to seek a child care subsidy. Alternatively, mothers with the least employment

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[7] It turns out that every single mother has at least one relative present in the household since the variable, the number of relatives, has a range from 1 to 11 in the sample. This supports the inclusion of relative care as an alternative in the multinomial choice model. However, for estimation purposes, it is not crucial that every mother has the option of relative care because the choice set for those who do not have that option could be reduced to the first three alternatives in that case.

qualifications may be given priority for subsidies by administrators. Therefore, the

estimation of a binary model of child care subsidy receipt is necessary to account for

possible bias that would contaminate the actual impact of subsidies on the behavior of

single mothers. A subsidy receipt equation can be specified as follows:

$$S_i = X_i\delta + Z_i\zeta + \upsilon_i, \tag{2}$$

where Z_i is a vector of identifying instruments, and υ_i is a disturbance with mean zero. Z_i

includes the percent of eligible children served by child care subsidies in the state, the

average amount of CCDF funds spent per child in the state, and a binary variable

indicating whether the state uses mass media as a consumer education strategy for the

child care subsidies. These variables are assumed to affect whether a single mother

receives a child care subsidy or not, but they have no impact on her employment or child

care mode decisions.

The estimation of equation (1) with a multinomial logit model may be

problematic because of the independence of irrelevant alternatives assumption, which

imposes the error terms, ε_{ij}'s, to be independent across alternatives. For example, if a

mother has unobserved preferences for work, these preferences will appear in all the

alternatives (2-4) in which the mother is employed. It is likely, for example, that the

decision to work while using center care is closely related to the decision to work while

using family day care. With the exception of Blau and Hagy (1998), all of the previous

studies that estimate a multinomial logit model failed to guard against this potential

problem, mainly due to computational difficulty.[8] Following Blau and Hagy (1998), a

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[8] These include Blau and Robins (1988), Hoffeth and Wissoker (1992), Cleveland and Hyatt (1993),
Chaplin et al. (1999), Michalopoulos and Robins (2000), and Connelly and Kimmel (2000), and owell
(2002). In this group, only Powell (2002) and Chaplin et al. (2000) implement a Hausman Test to test the
validity of the independence of irrelevant alternatives assumption.

discrete random effects specification is used in this paper to allow for the possibility of correlation in the disturbances across the discrete alternatives. Furthermore, the subsidy receipt equation is estimated jointly with the multinomial choice equation to allow for the possibility of correlation between ε_{ij}'s and υ_i.[9] To implement the discrete random effects specification, the following factor structure is imposed on the disturbances in equations (1) and (2):

$$\varepsilon_{ij} = u_{ij} + \rho_j\eta, \tag{3}$$

$$\upsilon_i = \mu_i + \rho_s\eta, \tag{4}$$

where u_{ij}, μ_i, and η are mutually independent disturbances, the ρ's are factor loadings that allow for flexibility in the effect of a given factor across equations. This structure places the restriction that all correlation across error terms enters the model through the common factor η that is assumed to have a discrete distribution (Heckman and Singer1984). Specifically,

$$\Pr(\eta = \theta_k) = p_k, \qquad k=1,.....,K, \ p_k \geq 0, \qquad \text{and} \qquad \sum_{k=1}^{K} p_k = 1,$$

Where θ_k is the kth point of support in the distribution of η, p_k is the probability that the η takes on the value of θ_k, and K is the number of points in the support of the distribution of η. This assumption is much less restrictive than the common practice of specifying a functional form of the distribution of the η's. Under these specifications, the likelihood function contribution for mother i associated with equations (1) and (2) is given by

$$L_i = \sum_{k=1}^{K} p_k \ \Pr_{ij}(\theta_k) \ \Pr(S_i = 1|\theta_k). \tag{5}$$

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[9] Mroz (1999) finds that this discrete random effects specification is more robust to deviations from normality and quality of instruments than two-stage methods. See Mocan and Tekin (2003), Picone et al. (2003), and Hu (1999) for other examples of this method.

Assuming that the u_{ij}'s in equation (3) are drawn from independent extreme-value

distributions, $Pr_{ij}(\theta_k) = \dfrac{exp(X_i\beta_j + \alpha_jS_i + \rho_j\eta)}{\psi_i}$, where $\psi_i = \sum\limits_{c=1}^{4} exp(X_i\beta_c + \alpha_cS_i + \rho_c\eta)$, with β_1

and α_1 set to zero for identification.[10] Specifying a logit for the binary subsidy receipt

equation, one gets $Pr(S_i = 1 | \theta_k) = \dfrac{exp(X_i\delta + Z_i\xi + \rho_s\eta)}{1 + exp(X_i\delta + Z_i\xi + \rho_s\eta)}$. The parameters to be

estimated in the model are β's, α, ζ's, δ's. θ's, and p's.

III. Results

The results of the child care subsidy receipt model are presented in Table 2.[11] The

marginal effects of the logit coefficients are displayed in the first column and the

underlying coefficients are displayed in the second column. The standard errors are

presented in the third column. Single mothers with a high school and some college

degree are 7.6 and 11.4 percentage points more likely to receive a child care subsidy than

others. Black are more likely to receive a subsidy than whites and other races. Those

living in the West and Midwest are more likely to receive a subsidy than those living in

the South or Northeast. Mothers who were born in the U.S. are 5.1 percentage points

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[10] The p's and θ's are parameterized as follows: $\theta_1 = -0.5r$, $\theta_k = \left[\dfrac{exp(g_k)}{1 + exp(g_k)} - 0.5 \right]r$, where k=2,.....,K-1,

and $\theta_K = 0.5r$. The g_k and r are the parameters to be estimated. Finally, $p_k = \dfrac{exp(f_k)}{1 + \sum\limits_{k-1}^{K-1} exp(f_k)}$, k=1,...K-1,

and $p_K = \dfrac{1}{1 + \sum\limits_{k-1}^{K-1} exp(f_k)}$, where the f_k's are parameters to be estimated. See Blau and Hagy (1998) for a

similar implementation.

[11] The models are estimated with different points of support (K). The results presented in the paper are taken from a model with five points of support. A model with six points of support did not improve the likelihood function value significantly and the results were very similar. The estimated factor loadings and heterogeneity parameters are presented in Table 5. As Table 5 illustrates, most of these estimates are statistically significant.

more likely to receive a subsidy than others. Higher non-wage income reduces the likelihood of subsidy receipt, but the estimated effect is small. A 1,000 increase in non-wage income would induce about a 1 percentage point decrease in the probability of subsidy receipt. The presence of an additional relative in household reduces the likelihood of subsidy receipt by about 2 percentage points.

Each of three identifying instruments is a significant determinant of the first stage outcome, the probability of subsidy receipt. State's use of mass media as a consumer education strategy is associated with a 4.7 percentage increase in the likelihood of subsidy receipt. A one percentage increase in the percent of eligible children served in the state increases the likelihood of child care subsidy receipt by about 0.4 percentage points. Finally, a 1,000 dollar increase in the annual amount of CCDF funds spent per child increases the likelihood of subsidy receipt by about 1.3 percentage points. The three estimates are statistically significant individually. Furthermore, a specification test rejected that they are jointly zero at less than 0.001 level of significance. In order to support further evidence on the validity of the instruments, they were included in the second stage multinomial choice model. Most of the nine coefficients of these three variables are found to be insignificant and a specification test failed to reject the hypothesis that they are jointly zero.

Results of the multinomial choice model are displayed in Table 3 and the corresponding marginal effects are presented in Table 4.[12]   The effects of explanatory

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[12] For binary variables, the marginal effects are calculated for each mother as the difference of the probability of choosing a particular alternative when the binary variable equals 1 and the probability of choosing that alternative when the binary variable is 0. Since the probability of choosing an alternative i, Pr(i), is a function of the heterogeneity parameters, each probability is integrated over the heterogeneity distribution. These values are then averaged over the sample. The marginal effect for the continuous variables is, $\beta Pr(i)[1-Pr(i)]$, which is again calculated for each mother, integrating over the heterogeneity distribution. This is again averaged over the sample.

variables are mostly as expected. Nonwage income has a small but negative impact on employment, indicating that leisure is a normal good. Having an additional child under age 5 lowers the probability of work by 10 percentage points. A similar pattern is observed for the impact of older children, although the magnitude is smaller. Education also appears to be an important factor explaining the choices of work and child care. Better educated single mothers are much more likely to work and use formal child care arrangements like center care and family day care.

As illustrated in Table 4, child care subsidy receipt increases the probability of choosing alternatives in which the mother is employed (alternatives 2-4) by a total of 15.3 percentage points. This result is consistent with the economic theory because child care subsidy receipt effectively reduces the size of an important work-related expense, child care costs. Based on the marginal effects of subsidy receipt for alternatives (2)-(4), it is also clear that the receipt of subsidies are overwhelmingly used for center care by the employed mothers. Not only non-employed mothers are moving from parental care to employment and center care, a sizeable proportion of employed single mothers are moving from relative care to center care when they receive child care subsidies. Specifically, subsidy receipt increases the probability of working and using center care by 33.2 percentage points while decreasing the probability of working and using relative care by 16.2 percentage points. The finding that child care subsidies decrease the use of parental care is consistent with other studies (e.g. Michalopoulos and Robins 2000, Powell 2002, Hofferth and Wissoker 1992, and Michalopoulos et al. 1992). The overall impact on employment and on using family day care is negative but small in magnitude. These results may suggest that single mothers perceive center care of better quality than

either family day care centers or relative care. Alternatively they may be switching to center care in order to release relatives from the child care requirement if relatives divide their time between leisure and child care (Blau and Tekin 2003). Also, the potentially constrained size of the "relative market" may play a role in the use of such care compared with the potential size of the market for center care (Powell 2002). In fact, controlling for subsidy receipt, the number of relatives in the household has a significant and positive effect on the probability of choosing relative care.

IV. Conclusion

Based on the significant and sizeable effect of subsidy receipt on employment, results presented in this paper support the view that child care subsidies are instrumental in helping welfare reform reach its goal of increased employed. Results also indicate that the increase in employment will likely to involve a substantial move away from relative care toward center-based care. If one believes that parental or relative care has higher quality than nonparental market care, these findings may seem troublesome. Michalopoulos et al. (1992) argue that subsidies would encourage mothers to work, but they would replace high-quality parental care with potentially low-quality nonparental care. However, there is little evidence about the relative merits for the child of different types of care.[13] Given the current policy of encouraging mothers to enter the workforce, women have little choice but to use non-maternal care.

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[13] On one hand, a positive parenting style characterized by warm, supportive interaction between parent and child may have favorable effects on child's development (Campbell 1995, Landy and Tam 1996). Some psychologists argue that appropriate care requires that the mother should provide primary care until the child reaches the age of 3 (White 1975). However, one cannot be sure that a child receives adequate care without the knowledge about the actual dynamics of the relationship between children and parents in the sample. On the other hand, children, especially those aged 3-5, may benefit from interaction with other children and with an adult trained in early childhood education (Berk 1985). Also, center care is often argued to be of better quality and more reliable than relative care and parental care since relative and parental care are largely to be custodial (Kimmel 1994).

Table 1:Descriptive Statistics

Variable	Full Sample	No work/ Parental Care	Work / Center Care	Work / Family Day Care	Work / Relative Care
Mother receives a child care subsidy	0.166	0.103	0.347	0.148	0.089
	(0.372)	(0.304)	(0.476)	(0.355)	(0.285)
Mother works	0.653	0.000	1.000	1.000	1.000
	(0.476)	(0.000)	(0.000)	(0.000)	(0.000)
Mother's age	28.868	28.379	29.552	29.852	28.349
	(6.511)	(6.622)	(6.153)	(6.495)	(6.601)
Mother has less than a high school degree[a]	0.162	0.291	0.073	0.085	0.116
	(0.368)	(0.455)	(0.260)	(0.280)	(0.321)
Mother has a high school degree	0.388	0.372	0.370	0.387	0.426
	(0.487)	(0.484)	(0.483)	(0.488)	(0.495)
Mother has some college degree	0.350	0.285	0.430	0.374	0.346
	(0.477)	(0.452)	(0.496)	(0.485)	(0.476)
Mother has a bachelor degree or more	0.101	0.052	0.127	0.154	0.111
	(0.301)	(0.223)	(0.333)	(0.362)	(0.315)
Mother resides in Northeast [a]	0.237	0.281	0.218	0.233	0.199
	(0.425)	(0.450)	(0.413)	(0.423)	(0.399)
Mother resides in Midwest	0.276	0.192	0.272	0.328	0.363
	(0.447)	(0.394)	(0.446)	(0.470)	(0.481)
Mother resides in South	0.286	0.312	0.312	0.207	0.271
	(0.452)	(0.464)	(0.464)	(0.406)	(0.445)
Mother resides in West	0.201	0.215	0.198	0.233	0.168
	(0.401)	(0.411)	(0.399)	(0.423)	(0.374)
Mother is black	0.326	0.328	0.376	0.220	0.332
	(0.469)	(0.470)	(0.485)	(0.415)	(0.471)
Mother is white	0.640	0.634	0.597	0.754	0.627
	(0.480)	(0.482)	(0.491)	(0.431)	(0.484)
Mother is of other race [a]	0.034	0.038	0.027	0.026	0.041
	(0.182)	(0.191)	(0.163)	(0.160)	(0.199)
Mother is of Hispanic ethnicity	0.187	0.255	0.105	0.154	0.193
	(0.390)	(0.436)	(0.307)	(0.362)	(0.395)
Mother was born in the US	0.898	0.856	0.936	0.918	0.906
	(0.303)	(0.351)	(0.244)	(0.275)	(0.292)
Mother is in good health	0.840	0.757	0.880	0.895	0.882
	(0.367)	(0.429)	(0.325)	(0.307)	(0.323)
Number or relatives in household	2.547	2.812	2.198	2.289	2.664
	(1.436)	(1.536)	(1.150)	(1.162)	(1.579)
Number of children between ages 0-5	1.299	1.427	1.203	1.210	1.267
in household	(0.589)	(0.704)	(0.481)	(0.461)	(0.547)
Number of children between ages 6-13	0.786	0.915	0.628	0.741	0.788
in household	(0.998)	(1.095)	(0.832)	(0.897)	(1.038)
Nonwage income (/1,000)	2.700	2.635	2.667	2.709	2.809
	(6.630)	(7.315)	(6.605)	(5.182)	(6.390)
Percentage of eligible children served	0.117	0.119	0.117	0.114	0.115
by child care subsidies in state (/100) [b]	(0.042)	(0.040)	(0.042)	(0.044)	(0.044)
State uses mass media as an education	0.715	0.727	0.731	0.721	0.682
strategy for child care subsidies [b]	(0.451)	(0.446)	(0.444)	(0.449)	(0.466)
Amount of CCDF funds spent per child	0.529	0.512	0.532	0.547	0.541
by the state (/10,000) [b]	(0.185)	(0.175)	(0.172)	(0.200)	(0.198)
Number of observations	2206	766	551	305	584

Note: Standard deviations are in parentheses. [a] Omitted category. [b] Source: Child Care Bureau. Nonwage income includes all income during 1999 except the mother's earnings and income means-tested programs.

Table 2
Results of the Model for Child Care Subsidy Receipt

Variable	Marginal Effect	Logit Coefficient	Standard error
Mother's age	-0.006	-0.048	0.010
Age squared (/1,000)	0.019	0.151	0.165
Mother has a high school degree	0.076***	0.593	0.026
Mother has some college degree	0.114***	0.857	0.029
Mother has a bachelor degree or more	-0.027	-0.254	0.035
Mother is white	0.030	0.252	0.042
Mother is black	0.136**	0.987	0.057
Mother is of Hispanic ethnicity	-0.009	-0.092	0.022
Mother is in good health	-0.029	-0.247	0.022
Number of children between ages 0-5 in household	0.034**	0.269	0.015
Number of children between ages 6-13 in household	0.032***	0.258	0.012
Mother resides in South	0.015	0.117	0.028
Mother resides in West	0.122***	0.843	0.035
Mother resides in Midwest	0.065**	0.479	0.027
Mother was born in the US	0.051**	0.444	0.024
Nonwage income (/1,000)	-0.005***	-0.084	0.002
Number of relatives in household	-0.017*	-0.139	0.009
Percentage of eligible children served by child care subsidies in state (/100)	0.391*	3.229	0.206
State uses mass media as an education strategy for child care subsidies	0.047***	0.402	0.017
Amount of CCDF funds spent per child by the state (/10,000)	0.128***	1.056	0.047
Constant		-3.465	1.401
Log Likelihood	-3,554		
Number of observations	2,206		

Note: *, **, and *** indicate that the marginal effect is statistically significant at 10 percent, 5 percent, and 1 percent levels, respectively.

Table 3
Estimated Coefficients of the Multinomial Choice Model

Variable	Work/Center Care	Work/Family Day Care	Work/Relative Care
Subsidy receipt	1.744 ***	0.561**	-0.187*
	(0.177)	(0.222)	(0.105)
Mother's age	0.050***	0.038***	0.004
	(0.011)	(0.012)	(0.010)
Mother has a high school degree	1.117***	1.088***	1.059***
	(0.216)	(0.255)	(0.183)
Mother has some college degree	1.402***	1.216***	1.057***
	(0.223)	(0.264)	(0.194)
Mother has a bachelor degree or more	2.025***	1.994***	1.695***
	(0.287)	(0.329)	(0.269)
Mother is white	0.288	0.632	-0.073
	(0.371)	(0.448)	(0.320)
Mother is black	0.542	0.294	-0.172
	(0.391)	(0.476)	(0.339)
Mother is of Hispanic ethnicity	-0.620***	-0.303	0.157
	(0.203)	(0.227)	(0.171)
Mother is in good health	0.792***	0.880***	0.792***
	(0.178)	(0.221)	(0.167)
Number of children between ages 0-5 in household	-0.579***	-0.422***	-0.576***
	(0.144)	(0.172)	(0.122)
Number of children between ages 6-13 in household	-0.362***	-0.112	-0.303***
	(0.103)	(0.120)	(0.089)
Mother resides in South	0.369**	-0.107	0.265*
	(0.171)	(0.213)	(0.157)
Mother resides in West	0.262	0.291	0.259
	(0.194)	(0.222)	(0.188)
Mother resides in Midwest	0.675***	0.858***	1.262***
	(0.190)	(0.220)	(0.188)
Mother was born in the US	0.262	0.243	0.296
	(0.256)	(0.288)	(0.218)
Nonwage income (/1,000)	-0.019*	-0.025*	-0.019*
	(0.011)	(0.014)	(0.012)
Number of relatives in household	-0.058	-0.081	0.216***
	(0.078)	(0.094)	(0.065)
Constant	-2.639***	-3.060***	-1.477***
	(0.630)	(0.741)	(0.573)
Log Likelihood	-3,554		
Number of observations	2,206		

Note: *, **, and *** represent statistical statistically significance at 10 percent, 5 percent, and 1 percent levels, respectively. Standard errors are in parentheses.

Table 4
Marginal Effects of the Multinomial Choice Model

Variable	No Work	Work/Center Care	Work/Family Day Care	Work/Relative Care
Mother receives a child care subsidy	-0.153	0.332	-0.017	-0.162
Mother's age	-0.005	0.007	0.002	-0.003
Mother has a high school degree	-0.184	0.077	0.035	0.073
Mother has some college degree	-0.205	0.124	0.037	0.045
Mother has a bachelor degree or more	-0.276	0.144	0.069	0.062
Mother is white	-0.034	0.031	0.054	-0.050
Mother is black	-0.059	0.070	0.004	-0.015
Mother is of Hispanic ethnicity	0.034	-0.094	-0.016	0.077
Mother is in good health	-0.150	0.055	0.036	0.060
Number of children between ages 0-5 in household	0.099	-0.045	-0.006	-0.047
Number of children between ages 6-13 in household	0.052	-0.036	0.011	-0.025
Mother resides in South	-0.041	0.048	-0.033	0.026
Mother resides in West	-0.047	0.018	0.011	0.018
Mother resides in Midwest	-0.157	-0.017	0.013	0.162
Mother was born in the US	-0.049	0.017	0.006	0.026
Nonwage income (/1,000)	0.003	-0.001	-0.001	-0.001
Number of relatives in household	-0.012	-0.021	-0.013	0.046
Log Likelihood	-3,554			
Number of observations	2,206			

Table 5
Factor Loadings and Heterogeneity Parameters

Factor Loadings				Heterogeneity Parameters			Probabilities	
	Estimate	Standard Error			Estimate	Standard Error		
							p_1	0.507
ρ_2	2.010***	0.247		f_1	1.462***	0.086	p_2	0.169
ρ_3	1.909***	0.348		f_2	0.365	0.378	p_3	0.025
ρ_4	1.780***	0.263		f_3	-1.543*	0.961	p_4	0.182
ρ_s	0.967**	0.461		f_4	0.438	0.405	p_5	0.117
							Points of Support	
				g_2	0.199***	0.026	Θ_1	-1.425
				g_3	0.212***	0.052	Θ_2	0.141
				g_4	0.183***	0.024	Θ_3	0.150
							Θ_4	0.130
				r	2.850	0.177	Θ_5	1.425

Note: ρ_1 is set equal to zero for identification. *, **, and *** represent statistical statistically significance at 10 percent, 5 percent, and 1 percent levels, respectively. Standard errors are in parentheses.

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