

# Online Appendix

## Causal Effects of Maternal Time-Investment on Children's Cognitive Outcomes

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Available online at

<http://www.benjaminvillena.com/data/uploads/online-appendix-VR-RA.pdf>

### 1 Detailed construction of instrumental variables

**Childcare wage construction:** In IPUMS CPS data (King et al. 2010), we use the occupation codes 1992-2002 of: childcare workers (406), family childcare providers (466), early childhood teacher (467), childcare workers (468) for 1997 and 2002. For the year 2007, we use the occupation codes 2003-2010 of childcare workers (4600). Codes are available in

[http://cps.ipums.org/cps-action/variables/OCC#codes\\_section](http://cps.ipums.org/cps-action/variables/OCC#codes_section)

**Housekeeping wage construction:** Corresponding occupation codes in IPUMS-CPS codes 1992-2002 include: cooks, private household (404), housekeeper & butler (405), private household cleaners & servants (407), maids and housemen (449). For 2003-2010 codes we include maids and housemen (4230).

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**Offered wage construction:** To construct local labor market wages, we need to obtain the expected wage a mother would obtain if she gets a job. However, a large share of women chooses not to participate in the labor force (or is unemployed). If these women are systematically different from the group of working mothers, the simple average would be a biased measure of the mean offered wage. To tackle this self-selection problem is customary to use the two-stage “Heckit” procedure (Heckman 1976). Instead, we estimate a two-stage type-III Tobit model, in which the selection in sample depends on a (quasi) continuous variable, such as hours worked (Vella (1993), Wooldridge 2002, ch 17). This procedure has the advantages of using the whole information contained in the hours worked data, as well as, of being implemented as a control function, just like Heckman’s procedure.

Thus, we estimate the hours-worked Tobit selection equation and the wage equation that depend on the following variables: race, hispanic, age, age squared, educational categorical dummies, state dummies, year dummies, and 23 industry dummies. Regressors that enter into the first-stage but not into the second-stage wage equation are: number of children, number of children younger than 5, other adults at home, log of other household income. The latter set of variables conceptually affect the value of being at home, so that they affect the intensive and extensive margins of the labor supply without generating changes in wages. We finally estimate the wage equation using the standard Mincer regressors we use for the hours equation and the generalized residual of the first stage. The results of this model are in Table 1. Using these estimates we then compute female average estimated offered wages by year and state. We assign the average offered estimated wage per labor market to the mothers in the PSID-CDS sample accordingly.

Table 1: Estimation of offered wages faced by mothers

	Mincer Linear		Hours worked two-side Tobit	
	Coef	t-test	Coef	t-test
const	2.796	109.8	-23.843	59.1
white	0.105	31.6	0.649	10.4
hispanic	-0.093	23.2	-0.367	4.9
age	0.092	138.6	1.535	124.2
age2	-0.001	121.1	-0.021	142.5
5-8 grade	0.116	6.3	2.059	7.4
9-12 grade, no hs	0.258	14.8	4.920	19.2
high school / GED	0.578	33.6	9.388	37.3
some college	0.711	41.2	10.377	40.9
assoc degree	0.856	48.8	10.936	41.9
bachelor	1.074	61.8	11.654	45.4
graduate	1.318	74.4	14.009	53.0
gen resid	0.009	57.7		
num child			-1.710	72.4
other adult			-0.858	36.0
log other inc			-0.252	46.3
num child <5			-1.845	32.7
$\sigma$	0.834		17.791	
$R^2$	0.275			
Pseudo $R^2$			0.103	
$N$	694363		1021953	
$N$ hours=0			290848	
$N$ hours $\in (0, 99)$			730245	
$N$ hours $\geq 99$			860	

Notes:

1. We use March IPUMS-CPS data from 1990-2007 in our estimation (King et al. 2010)
2. Estimation procedure based on Vella (1993). See also in Wooldridge 2002, ch 17.
3. Selection equation is a Tobit model censored at 0 and 99 hours per week. Total number of children, number of children under 5, Presence of other adults at home, and log of other family income are exclusion restrictions to improve empirical performance (not necessary to achieve identification).
4. Wage and hours equation include non reported controls for dummy variables per year, state, 23 industry codes for 1970 Census codes and for 2000 Census codes (valid from 2003 on).

## 2 Robustness specifications:

### 2.1 Second stages with maternal time standardized by child age.

- Table 2: Effect of maternal total time standardized by child age in Applied Problems. Physical investment measure is Home Quality Index.
- Table 3: Effect of maternal active time standardized by child age in Applied Problems. Physical investment measure is Home Quality Index.

- Table 4: Effect of maternal total time standardized by child age in Word-Letter Identification. Physical investment measure is Home Quality Index.
- Table 5: Effect of maternal active time standardized by child age in Word-Letter Identification. Physical investment measure is Home Quality Index.

## **2.2 Second stages with physical investment measure as family income.**

- Table 6: Effect of maternal total time in Applied Problems. Physical investment measure is log family income.
- Table 7: Effect of maternal active time in Applied Problems. Physical investment measure is log family income.
- Table 8: Effect of maternal total time in Word-Letter Identification. Physical investment measure is log family income.
- Table 9: Effect of maternal active time in Word-Letter Identification. Physical investment measure is log family income.

## **2.3 Second stages with maternal time standardized by child age and physical investment measure as family income.**

- Table 10: Effect of maternal total time standardized by child age in Applied Problems. Physical investment measure is log family income.
- Table 11: Effect of maternal active time standardized by child age in Applied Problems. Physical investment measure is log family income.
- Table 12: Effect of maternal total time standardized by child age in Word-Letter Identification. Physical investment measure is log family income.
- Table 13: Effect of maternal active standardized by child age time in Word-Letter Identification. Physical investment measure is log family income.

## **2.4 Second stages with physical investment measure as Home Quality Index and child age interaction.**

- Table 14: Effect of maternal total time in Applied Problems. Physical investment measure is Home Quality Index and its interaction with child age.

- Table 15: Effect of maternal active time in Applied Problems. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 16: Effect of maternal total time in Word-Letter Identification. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 17: Effect of maternal active time in Word-Letter Identification. Physical investment measure is Home Quality Index and its interaction with child age.

## **2.5 Second stages with maternal time standardized by child age and physical investment measure as Home Quality Index and child age interaction.**

- Table 18: Effect of maternal total time standardized by child age in Applied Problems. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 19: Effect of maternal active time standardized by child age in Applied Problems. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 20: Effect of maternal total time standardized by child age in Word-Letter Identification. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 21: Effect of maternal active standardized by child age time in Word-Letter Identification. Physical investment measure is Home Quality Index and its interaction with child age.

## **2.6 First stages with maternal time standardized by child age.**

- Table 22: Effect of instruments on maternal total time standardized by child age. Physical investment measure is Home Quality Index.
- Table 23: Effect of instruments on maternal active time standardized by child age. Physical investment measure is Home Quality Index.

## **2.7 First stages with physical investment measure as family income.**

- Table 24: Effect of instruments on maternal total time. Physical investment measure is log family income.

- Table 25: Effect of instruments on maternal active time. Physical investment measure is log family income.

## **2.8 First stages with maternal time standardized by child age and physical investment measure as family income.**

- Table 26: Effect of instruments on maternal total time standardized by child age. Physical investment measure is log family income.
- Table 27: Effect of instruments on maternal active time standardized by child age. Physical investment measure is log family income.

## **First stages with physical investment measure as Home Quality Index and child age interaction.**

- Table 28: Effect of instruments on maternal total time. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 29: Effect of instruments on maternal total time. Physical investment measure is Home Quality Index and its interaction with child age.

## **2.9 First stages with maternal time standardized by child age and physical investment measure as Home Quality Index and child age interaction.**

- Table 30: Effect of instruments on maternal total time standardized by child age. Physical investment measure is Home Quality Index and its interaction with child age.
- Table 31: Effect of instruments on maternal total time standardized by child age. Physical investment measure is Home Quality Index and its interaction with child age.

Table 2: Effects of Log total maternal time in Applied Problems, standardized by child age

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	2.509***	0.193	15.281***	-0.06	63.862	15.284***	-0.06	73.759	15.783***	-0.071	69.437	14.849***	-0.051	77.976
	[6.84]	[0.42]	[8.82]	[0.1]	1740	[9.46]	[0.1]	1740	[9.35]	[0.11]	1740	[9.59]	[0.08]	1740
Mother educ $\leq$ 12	2.216***	0.45	13.612***	-0.301	23.739	13.108***	-0.267	29.641	13.767***	-0.311	25.864	13.103***	-0.267	29.083
	[4.69]	[0.65]	[5.54]	[0.31]	797	[5.96]	[0.28]	797	[5.77]	[0.32]	797	[5.94]	[0.28]	797
Mother educ > 12	2.867***	-0.008	16.865***	0.136	42.33	17.313***	0.139	46.015	17.637***	0.142	46.283	16.384***	0.132	52.224
	[5.01]	[0.01]	[6.92]	[0.17]	943	[7.4]	[0.17]	943	[7.47]	[0.17]	943	[7.63]	[0.16]	943
Male Child	2.752***	0.566	15.369***	0.257	34.525	15.396***	0.256	38.27	15.820***	0.246	38.265	14.338***	0.282	45.45
	[5.41]	[0.85]	[6.64]	[0.28]	874	[6.98]	[0.28]	874	[7.08]	[0.26]	874	[7.28]	[0.32]	874
Female Child	2.227***	-0.153	15.314***	-0.376	29.609	15.216***	-0.374	35.867	15.707***	-0.384	32.706	15.224***	-0.374	34.988
	[4.19]	[0.25]	[5.88]	[0.44]	866	[6.45]	[0.44]	866	[6.27]	[0.44]	866	[6.37]	[0.44]	866
White Child	3.368***	0.535	18.939***	0.58	47.002	18.551***	0.58	56.927	18.804***	0.58	55.407	17.875***	0.579	59.491
	[5.56]	[0.89]	[7.75]	[0.69]	961	[8.36]	[0.7]	961	[8.31]	[0.69]	961	[8.37]	[0.71]	961
Black Child	1.508***	0.034	11.585***	-0.698	13.642	11.962***	-0.725	15.187	13.022***	-0.802	14.01	10.893***	-0.647	23.114
	[2.97]	[0.04]	[3.65]	[0.66]	630	[4.12]	[0.68]	630	[4.15]	[0.72]	630	[4.8]	[0.64]	630
Low Income	1.859***	-0.339	13.443***	-1.722*	25.726	13.669***	-1.749*	28.601	14.143***	-1.806*	27.722	13.647***	-1.747*	27.99
	[3.76]	[0.44]	[5.49]	[1.57]	771	[5.76]	[1.58]	771	[5.8]	[1.6]	771	[5.75]	[1.58]	771
High Income	3.686***	0.41	16.381***	0.875	39.444	15.843***	0.856	47.595	16.367***	0.874	44.211	14.886***	0.824	54.554
	[6.59]	[0.73]	[7.05]	[1.17]	969	[7.66]	[1.17]	969	[7.53]	[1.17]	969	[7.84]	[1.16]	969
Male Head	3.167***	0.562	16.833***	0.013	49.959	16.867***	0.011	57.486	17.515***	-0.016	53.277	17.104***	0.001	54.27
	[6.05]	[1.07]	[7.84]	[0.02]	1198	[8.4]	[0.02]	1198	[8.25]	[0.02]	1198	[8.25]	[0]	1198
Female Head	1.765***	-1.094	12.286***	-1.25	16.631	11.977***	-1.245	19.943	11.598***	-1.239	21.838	10.154***	-1.218	29.102
	[3.17]	[1.19]	[4.38]	[1.01]	542	[4.67]	[1.02]	542	[4.68]	[1.03]	542	[5.03]	[1.08]	542

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 3: Effects of Log active maternal time in Applied Problems, standardized by child age

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.448*** [5.44]	0.246 [0.54]	15.882*** [6.09]	1.887*** [1.98]	21.551 1740	15.891*** [6.51]	1.888*** [1.99]	24.83 1740	15.753*** [6.6]	1.873*** [1.99]	25.338 1740	15.475*** [6.62]	1.841*** [1.99]	25.973 1740
Mother educ $\leq$ 12	1.233*** [3.6]	0.605 [0.87]	12.025*** [4.1]	1.687* [1.31]	12.598 797	12.200*** [4.5]	1.704* [1.32]	12.253 797	11.985*** [4.5]	1.683* [1.32]	12.431 797	11.991*** [4.52]	1.683* [1.32]	12.503 797
Mother educ $>$ 12	1.696*** [4.06]	-0.032 [0.05]	19.895*** [4.41]	2.192* [1.58]	11.412 943	20.048*** [4.7]	2.210* [1.59]	12.756 943	19.978*** [4.82]	2.202* [1.6]	13.279 943	19.265*** [4.85]	2.116* [1.59]	13.805 943
Male Child	1.900*** [5.08]	0.681 [1.02]	12.588*** [5.68]	1.904** [1.71]	20.22 874	12.461*** [6.02]	1.889** [1.72]	22.86 874	12.560*** [6.15]	1.901** [1.72]	23.802 874	12.339*** [6.09]	1.875** [1.72]	23.529 874
Female Child	0.942*** [2.48]	-0.157 [0.25]	24.421*** [2.73]	2.454 [1.18]	3.994 866	24.881*** [2.9]	2.504 [1.2]	4.845 866	23.665*** [3.02]	2.371 [1.2]	4.97 866	23.082*** [3.08]	2.307 [1.2]	5.439 866
White Child	1.733*** [3.74]	0.545 [0.9]	22.852*** [4.7]	2.107* [1.48]	12.962 961	20.566*** [5.51]	1.941* [1.51]	17.91 961	21.002*** [5.42]	1.973* [1.5]	17.279 961	20.442*** [5.44]	1.932* [1.51]	17.375 961
Black Child	0.751*** [2.09]	0.026 [0.03]	10.262*** [3.04]	1.047 [0.77]	6.527 630	11.532*** [2.94]	1.183 [0.79]	6.469 630	11.265*** [3.23]	1.155 [0.79]	6.784 630	10.062*** [3.72]	1.026 [0.77]	9.624 630
Low Income	1.237*** [3.52]	-0.205 [0.27]	11.996*** [4.28]	-0.417 [0.31]	12.03 771	12.394*** [4.48]	-0.424 [0.31]	12.633 771	12.029*** [4.69]	-0.417 [0.31]	13.892 771	11.813*** [4.62]	-0.413 [0.31]	13.668 771
High Income	2.135*** [5.03]	0.421 [0.74]	19.624*** [4.42]	3.704*** [2.56]	10.367 969	18.013*** [5.03]	3.404*** [2.64]	13.939 969	18.498*** [4.91]	3.494*** [2.63]	13.148 969	17.864*** [5.03]	3.376*** [2.64]	14.045 969
Male Head	2.012*** [5.07]	0.639 [1.2]	20.409*** [4.9]	2.416*** [1.98]	12.876 1198	18.967*** [5.58]	2.278*** [2.02]	17.521 1198	19.483*** [5.48]	2.327*** [2.01]	16.48 1198	19.631*** [5.34]	2.341*** [2]	15.987 1198
Female Head	0.991*** [2.48]	-0.862 [0.95]	9.659*** [3.73]	-0.165 [0.12]	10.397 542	9.992*** [3.82]	-0.138 [0.09]	11.077 542	10.036*** [3.93]	-0.135 [0.09]	11.006 542	9.218*** [4.16]	-0.201 [0.14]	13.068 542

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.



Table 4: Effects of Log total maternal time in Word-Letter Identification, standardized by child age

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.660*** [4.86]	-2.133*** [5.05]	6.357*** [5.07]	-2.162*** [4.8]	62.99 1748	6.370*** [5.41]	-2.162*** [4.8]	72.46 1748	6.326*** [5.11]	-2.161*** [4.8]	68.38 1748	6.123*** [5.14]	-2.158*** [4.82]	76.86 1748
Mother educ $\leq$ 12	1.623*** [4.03]	-2.114*** [3.58]	5.669*** [3.36]	-2.361*** [3.68]	22.67 802	5.396*** [3.53]	-2.344*** [3.7]	28.04 802	5.627*** [3.42]	-2.358*** [3.69]	24.61 802	6.256*** [3.9]	-2.396*** [3.67]	27.84 802
Mother educ $>$ 12	1.702*** [3.02]	-2.187*** [3.68]	6.986*** [3.78]	-2.04*** [3.25]	42.89 946	7.232*** [4.04]	-2.037*** [3.22]	46.61 946	7.017*** [3.89]	-2.04*** [3.24]	46.9 946	6.073*** [3.49]	-2.05*** [3.32]	52.81 946
Male Child	2.063*** [4.47]	-1.973*** [3.27]	7.751*** [4.67]	-2.079*** [3.12]	35.03 875	7.966*** [4.96]	-2.083*** [3.11]	38.65 875	7.710*** [4.59]	-2.078*** [3.13]	38.69 875	7.097*** [4.5]	-2.067*** [3.17]	45.79 875
Female Child	1.158*** [2.28]	-2.282*** [3.85]	4.547*** [2.39]	-2.241*** [3.66]	28.28 873	4.425*** [2.54]	-2.238*** [3.67]	34.19 873	4.409*** [2.42]	-2.238*** [3.67]	31.4 873	4.595*** [2.57]	-2.242*** [3.66]	33.69 873
White Child	1.666*** [2.88]	-1.77*** [3.08]	9.276*** [4.99]	-1.653*** [2.58]	47.48 965	8.900*** [5.23]	-1.655*** [2.61]	57.08 965	8.805*** [5.07]	-1.655*** [2.62]	55.71 965	8.302*** [4.95]	-1.657*** [2.65]	59.77 965
Black Child	1.173*** [2.7]	-2.386*** [3.6]	3.865** [1.85]	-2.563*** [3.68]	12.92 635	3.665** [1.9]	-2.55*** [3.69]	14.52 635	3.146* [1.57]	-2.516*** [3.67]	13.29 635	3.285*** [2.05]	-2.525*** [3.7]	22.19 635
Low Income	1.513*** [3.51]	-2.526*** [3.73]	5.848*** [3.4]	-2.999*** [4.01]	24.72 775	5.362*** [3.25]	-2.946*** [4]	27.36 775	5.417*** [3.17]	-2.952*** [4]	26.59 775	6.531*** [3.65]	-3.074*** [4.01]	26.8 775
High Income	2.054*** [3.73]	-1.965*** [3.58]	6.587*** [3.71]	-1.724*** [2.99]	39.81 973	7.113*** [4.28]	-1.707*** [2.92]	47.81 973	6.765*** [3.92]	-1.718*** [2.97]	44.54 973	5.542*** [3.54]	-1.76*** [3.11]	54.93 973
Male Head	1.703*** [3.35]	-2.28*** [4.47]	7.676*** [4.64]	-2.441*** [4.4]	49.56 1203	7.862*** [5.03]	-2.448*** [4.39]	56.72 1203	7.859*** [4.82]	-2.448*** [4.39]	52.92 1203	7.817*** [4.76]	-2.446*** [4.39]	54.25 1203
Female Head	1.348*** [2.89]	-1.267** [1.65]	3.529** [1.95]	-1.291** [1.65]	16.32 545	3.305*** [1.98]	-1.288** [1.66]	19.5 545	2.605* [1.6]	-1.281** [1.66]	21.23 545	2.705** [1.85]	-1.282** [1.66]	27.85 545

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 5: Effects of Log active maternal time in Word-Letter Identification, standardized by child age

	OLS			IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$		$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.012*** [4.1]	-2.104*** [4.96]		6.607*** [4.27]	-1.394*** [2.53]	20.75 1748	6.655*** [4.63]	-1.388*** [2.54]	23.85 1748	6.829*** [4.56]	-1.368*** [2.46]	24.4 1748	7.391*** [4.78]	-1.302*** [2.27]	24.98 1748
Mother educ $\leq$ 12	0.905*** [3.1]	-1.96*** [3.31]		4.340*** [2.47]	-1.621*** [2.33]	11.4 802	5.506*** [3.24]	-1.506*** [2]	10.89 802	5.318*** [3.1]	-1.524*** [2.05]	11.07 802	6.291*** [3.49]	-1.428** [1.78]	11.25 802
Mother educ $>$ 12	1.106*** [2.71]	-2.26*** [3.78]		8.025*** [3.21]	-1.267* [1.58]	11.83 946	8.027*** [3.31]	-1.267* [1.59]	13.27 946	8.230*** [3.4]	-1.24* [1.54]	13.84 946	8.800*** [3.39]	-1.166* [1.4]	14.21 946
Male Child	1.196*** [3.53]	-1.875*** [3.1]		6.266*** [4.21]	-1.245** [1.66]	20.44 875	6.475*** [4.59]	-1.219* [1.61]	22.96 875	6.477*** [4.4]	-1.218* [1.61]	24.01 875	7.053*** [4.53]	-1.147* [1.46]	23.42 875
Female Child	0.786*** [2.18]	-2.329*** [3.91]		7.308** [1.78]	-1.51** [1.71]	3.409 873	6.883** [1.85]	-1.556** [1.84]	4.219 873	7.194*** [2.01]	-1.522** [1.79]	4.39 873	7.869*** [2.16]	-1.448** [1.65]	4.818 873
White Child	0.999*** [2.28]	-1.768*** [3.07]		10.845*** [3.86]	-0.856 [1.01]	13.29 965	9.806*** [4.31]	-0.943 [1.19]	17.95 965	9.935*** [4.08]	-0.932 [1.16]	17.67 965	9.974*** [4.26]	-0.929 [1.16]	17.65 965
Black Child	0.379 [1.22]	-2.429*** [3.63]		3.474* [1.56]	-2.1*** [2.67]	5.525 635	3.228* [1.52]	-2.126*** [2.76]	5.476 635	3.034* [1.53]	-2.147*** [2.83]	5.72 635	3.451*** [1.98]	-2.102*** [2.73]	8.437 635
Low Income	0.814*** [2.66]	-2.427*** [3.59]		5.335*** [3.05]	-2.456*** [3.01]	10.91 775	5.365*** [3.14]	-2.456*** [3]	11.42 775	5.122*** [2.95]	-2.454*** [3.05]	12.64 775	6.371*** [3.34]	-2.462*** [2.8]	12.28 775
High Income	1.476*** [3.56]	-1.965*** [3.55]		7.669*** [3.07]	-0.729 [0.91]	10.64 973	8.105*** [3.64]	-0.649 [0.82]	14.2 973	7.999*** [3.45]	-0.668 [0.84]	13.44 973	7.862*** [3.48]	-0.694 [0.88]	14.35 973
Male Head	1.327*** [3.47]	-2.307*** [4.5]		9.157*** [3.74]	-1.424*** [1.99]	12.92 1203	8.762*** [4.23]	-1.465*** [2.12]	17.27 1203	8.852*** [4.01]	-1.455*** [2.08]	16.59 1203	9.561*** [4.13]	-1.382** [1.9]	16.11 1203
Female Head	0.498* [1.49]	-1.18* [1.55]		2.547** [1.66]	-1.027 [1.27]	9.599 545	2.888** [1.93]	-1.002 [1.22]	10.07 545	2.777** [1.8]	-1.01 [1.24]	9.961 545	3.230*** [2.13]	-0.976 [1.17]	11.7 545

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 6: Effects of Log total maternal time in Applied Problems, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.303*** [4.01]	-5.239*** [2.23]	17.865*** [8.1]	-8.644*** [2.28]	49.093 2082	17.454*** [8.8]	-8.56*** [2.29]	60.111 2082	18.089*** [8.61]	-8.69*** [2.27]	56.213 2082	16.432*** [8.96]	-8.35*** [2.33]	65.884 2082
Mother educ ≤ 12	1.090*** [2.57]	-4.064* [1.33]	16.941*** [5.27]	-7.885* [1.51]	19.55 955	16.203*** [5.7]	-7.707* [1.52]	25.419 955	16.271*** [5.53]	-7.723* [1.52]	25.798 955	15.309*** [5.75]	-7.491* [1.54]	27.052 955
Mother educ > 12	1.572*** [3.12]	-6.893** [1.85]	18.794*** [6.21]	-10.553** [1.85]	31.735 1127	18.663*** [6.79]	-10.525** [1.86]	36.891 1127	19.558*** [6.67]	-10.716** [1.83]	34.322 1127	17.414*** [7]	-10.26** [1.89]	41.957 1127
Male Child	1.629*** [3.34]	-3.999 [1.16]	19.429*** [6.27]	-15.762*** [2.68]	29.132 1041	19.040*** [6.76]	-15.505*** [2.7]	34.695 1041	19.486*** [6.76]	-15.8*** [2.71]	33.991 1041	16.954*** [7.13]	-14.127*** [2.67]	43.824 1041
Female Child	0.992*** [2.28]	-6.617*** [2.04]	16.517*** [5.13]	-2.426 [0.46]	19.91 1041	16.039*** [5.64]	-2.555 [0.49]	25.195 1041	17.068*** [5.38]	-2.278 [0.42]	22.427 1041	15.831*** [5.59]	-2.611 [0.51]	24.625 1041
White Child	1.309*** [2.5]	-8.742*** [2.09]	21.320*** [6.31]	1.66 [0.23]	28.892 1112	21.055*** [6.9]	1.522 [0.21]	35.497 1112	20.971*** [6.86]	1.479 [0.21]	35.706 1112	19.528*** [7]	0.727 [0.11]	39.744 1112
Black Child	0.840** [1.9]	-5.694** [1.73]	13.880*** [4.12]	-11.656*** [2.24]	15.797 803	13.707*** [4.56]	-11.577*** [2.26]	17.582 803	14.845*** [4.51]	-12.097*** [2.24]	15.885 803	12.371*** [5.17]	-10.966*** [2.29]	24.651 803
Low Income	0.769** [1.79]	-1.313 [0.38]	18.831*** [4.86]	-7.392 [1.18]	16.208 955	19.370*** [5.04]	-7.574 [1.18]	17.729 955	19.476*** [5.1]	-7.61 [1.19]	18.33 955	18.241*** [5.12]	-7.194 [1.18]	19.014 955
High Income	2.066*** [4.07]	-1.825 [0.39]	16.999*** [6.6]	-4.244 [0.63]	35.637 1127	15.792*** [7.33]	-4.046 [0.63]	47.843 1127	16.755*** [7.06]	-4.204 [0.63]	41.643 1127	14.837*** [7.44]	-3.89 [0.62]	52.996 1127
Male Head	1.523*** [3.34]	-10.924*** [3.21]	16.647*** [7.05]	-9.242** [1.84]	41.9 1410	16.490*** [7.7]	-9.26** [1.85]	50.621 1410	17.361*** [7.47]	-9.162** [1.77]	44.921 1410	16.381*** [7.65]	-9.272** [1.86]	49.834 1410
Female Head	0.717* [1.45]	1.786 [0.48]	19.880*** [3.85]	-4.206 [0.58]	9.865 672	18.562*** [4.2]	-3.794 [0.55]	12.742 672	17.980*** [4.2]	-3.612 [0.54]	15.438 672	15.029*** [4.53]	-2.689 [0.45]	19.374 672

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 7: Effects of Log active maternal time in Applied Problems, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	2.189*** [6.86]	-6.675*** [2.87]	14.180*** [9.43]	-8.116*** [2.55]	75.214 2082	14.243*** [10.14]	-8.123*** [2.55]	87.268 2082	14.710*** [9.98]	-8.18*** [2.52]	81.604 2082	13.830*** [10.13]	-8.073*** [2.57]	89.64 2082
Mother educ ≤ 12	1.886*** [4.49]	-5.337** [1.76]	14.000*** [6.15]	-7.444** [1.68]	28.662 955	13.721*** [6.57]	-7.395** [1.69]	34.858 955	13.999*** [6.37]	-7.443** [1.68]	33.121 955	13.459*** [6.49]	-7.35** [1.7]	34.21 955
Mother educ > 12	2.555*** [5.24]	-8.496*** [2.3]	14.293*** [7.16]	-9.509*** [2]	49.756 1127	14.682*** [7.76]	-9.544*** [1.98]	55.666 1127	15.096*** [7.7]	-9.581*** [1.96]	53.749 1127	14.086*** [7.85]	-9.491*** [2.01]	59.932 1127
Male Child	2.752*** [5.83]	-6.16** [1.81]	15.278*** [7.39]	-13.483*** [2.83]	44.582 1041	15.294*** [7.9]	-13.493*** [2.84]	51.041 1041	15.852*** [7.87]	-13.819*** [2.84]	48.573 1041	14.381*** [8.09]	-12.959*** [2.83]	57.445 1041
Female Child	1.646*** [3.81]	-7.461*** [2.32]	13.218*** [5.92]	-3.11 [0.69]	30.59 1041	13.304*** [6.41]	-3.077 [0.68]	36.031 1041	13.859*** [6.23]	-2.87 [0.62]	32.996 1041	13.305*** [6.28]	-3.077 [0.68]	34.371 1041
White Child	2.502*** [4.96]	-9.482*** [2.29]	16.952*** [7.44]	-1.927 [0.32]	43.592 1112	17.064*** [8.08]	-1.868 [0.31]	52.022 1112	17.122*** [8.01]	-1.838 [0.3]	50.986 1112	16.369*** [8.03]	-2.231 [0.38]	53.603 1112
Black Child	1.544*** [3.5]	-6.668*** [2.05]	11.398*** [4.76]	-10.277*** [2.34]	22.422 803	11.509*** [5.18]	-10.318*** [2.35]	24.862 803	12.480*** [5.15]	-10.674*** [2.32]	22.334 803	11.033*** [5.67]	-10.144*** [2.36]	31.223 803
Low Income	1.510*** [3.56]	-2.353 [0.69]	14.446*** [5.91]	-5.341 [1.06]	27.331 955	14.819*** [6.16]	-5.428 [1.06]	29.764 955	15.235*** [6.17]	-5.524 [1.06]	29.052 955	14.474*** [6.11]	-5.348 [1.06]	29.434 955
High Income	3.163*** [6.47]	-3.735 [0.81]	13.719*** [7.41]	-4.873 [0.84]	49.927 1127	13.383*** [8.11]	-4.835 [0.84]	61.76 1127	13.884*** [7.92]	-4.892 [0.84]	55.947 1127	12.855*** [8.14]	-4.775 [0.85]	65.517 1127
Male Head	2.744*** [6.2]	-11.839*** [3.52]	13.714*** [8.09]	-9.922*** [2.28]	60.389 1410	13.962*** [8.8]	-9.879*** [2.25]	70.072 1410	14.584*** [8.58]	-9.77*** [2.18]	62.956 1410	14.179*** [8.62]	-9.841*** [2.22]	65.67 1410
Female Head	1.375*** [2.82]	1.004 [0.27]	15.115*** [4.69]	-1.949 [0.34]	16.467 672	14.609*** [5]	-1.84 [0.33]	19.483 672	14.232*** [5]	-1.759 [0.32]	21.922 672	12.368*** [5.2]	-1.358 [0.27]	26.457 672

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 8: Effects of Log total maternal time in Word-Letter Identification, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	0.648*** [2.13]	2.564 [1.17]	7.979*** [5.34]	1.129 [0.44]	48.685 2096	7.849*** [5.77]	1.154 [0.45]	59.245 2096	7.846*** [5.1]	1.154 [0.45]	55.53 2096	7.288*** [5.02]	1.26 [0.51]	65.216 2096
Mother educ ≤ 12	0.734*** [2.08]	3.236 [1.27]	7.591*** [3.65]	1.738 [0.55]	18.89 963	6.770*** [3.87]	1.917 [0.64]	24.181 963	6.186*** [3.1]	2.045 [0.7]	24.742 963	7.501*** [3.94]	1.757 [0.56]	26.117 963
Mother educ > 12	0.513 [1.01]	1.513 [0.4]	8.584*** [3.83]	-0.188 [0.04]	32.136 1133	8.908*** [4.27]	-0.255 [0.06]	37.365 1133	9.023*** [4.03]	-0.278 [0.06]	34.765 1133	6.977*** [3.26]	0.142 [0.03]	42.381 1133
Male Child	1.046*** [2.34]	3.31 [1.05]	9.843*** [4.69]	-2.383 [0.59]	29.785 1046	9.744*** [5.01]	-2.319 [0.58]	35.206 1046	9.496*** [4.53]	-2.158 [0.54]	34.528 1046	8.043*** [4.16]	-1.218 [0.32]	44.314 1046
Female Child	0.282 [0.68]	1.563 [0.51]	5.866*** [2.73]	3.128 [0.91]	19.108 1050	5.806*** [3.02]	3.111 [0.91]	24.07 1050	5.906*** [2.54]	3.139 [0.91]	21.459 1050	5.961*** [2.78]	3.155 [0.91]	23.735 1050
White Child	0.222 [0.44]	-6.889** [1.72]	12.235*** [4.83]	-0.534 [0.1]	28.817 1118	11.878*** [5.2]	-0.726 [0.14]	35.124 1118	11.542*** [4.84]	-0.907 [0.17]	35.47 1118	10.553*** [4.72]	-1.441 [0.28]	39.552 1118
Black Child	0.485 [1.26]	-1.913 [0.67]	3.836*** [1.97]	-3.385 [1.08]	15.562 810	3.627*** [2]	-3.294 [1.07]	17.329 810	2.016 [1.02]	-2.586 [0.86]	15.597 810	2.357* [1.49]	-2.736 [0.92]	24.188 810
Low Income	0.221 [0.59]	5.595** [1.89]	8.231*** [3.45]	3.006 [0.79]	15.899 965	7.956*** [3.4]	3.095 [0.83]	17.245 965	8.055*** [3.12]	3.063 [0.81]	17.857 965	9.718*** [3.28]	2.525 [0.62]	18.485 965
High Income	1.347*** [2.68]	1.845 [0.4]	7.798*** [4.07]	0.857 [0.17]	35.674 1131	8.116*** [4.78]	0.812 [0.16]	47.457 1131	7.793*** [4.07]	0.858 [0.17]	41.559 1131	6.024*** [3.61]	1.108 [0.23]	52.99 1131
Male Head	0.714* [1.61]	-0.633 [0.19]	9.000*** [4.94]	0.344 [0.09]	41.583 1419	9.101*** [5.41]	0.357 [0.09]	49.79 1419	9.349*** [4.97]	0.389 [0.1]	44.462 1419	8.815*** [4.78]	0.321 [0.08]	49.649 1419
Female Head	0.28 [0.67]	2.893 [0.92]	4.598** [1.82]	1.613 [0.46]	9.826 677	4.225** [1.95]	1.724 [0.51]	12.664 677	2.172 [1.04]	2.332 [0.72]	15.281 677	2.609* [1.34]	2.203 [0.68]	18.861 677

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 9: Effects of Log active maternal time in Word-Letter Identification, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	0.510*** [2.3]	1.743 [0.8]	3.763*** [5.59]	-0.223 [0.09]	88.622 2096	3.920*** [5.97]	-0.315 [0.13]	95.771 2096	3.896*** [5.81]	-0.301 [0.13]	97.436 2096	4.248*** [6.14]	-0.509 [0.21]	95.284 2096
Mother educ $\leq$ 12	0.453** [1.75]	2.838 [1.12]	2.923*** [3.39]	1.412 [0.51]	36.699 963	3.465*** [4.2]	1.099 [0.39]	37.763 963	3.244*** [3.82]	1.226 [0.44]	39.353 963	4.064*** [4.6]	0.753 [0.25]	37.141 963
Mother educ $>$ 12	0.564* [1.53]	0.2 [0.05]	4.241*** [4.14]	-2.392 [0.59]	58.562 1133	4.315*** [4.28]	-2.443 [0.6]	62.224 1133	4.448*** [4.42]	-2.535 [0.62]	63.523 1133	4.372*** [4.18]	-2.483 [0.61]	62.849 1133
Male Child	0.772*** [2.48]	3.171 [1.02]	4.084*** [5.01]	2.058 [0.61]	63.119 1046	4.250*** [5.36]	2.002 [0.59]	68.8 1046	4.134*** [5.21]	2.041 [0.6]	70.221 1046	4.411*** [5.31]	1.948 [0.57]	67.872 1046
Female Child	0.225 [0.71]	0.586 [0.19]	3.235*** [2.8]	-2.123 [0.62]	28.428 1050	3.337*** [2.95]	-2.214 [0.65]	30.581 1050	3.562*** [2.94]	-2.414 [0.69]	30.618 1050	3.921*** [3.27]	-2.735 [0.77]	30.73 1050
White Child	0.318 [0.82]	-6.986** [1.74]	6.513*** [5.17]	1.277 [0.25]	46.445 1118	6.478*** [5.49]	1.23 [0.25]	53.977 1118	6.335*** [5.31]	1.037 [0.21]	54.149 1118	6.405*** [5.31]	1.132 [0.23]	52.641 1118
Black Child	0.077 [0.28]	-2.684 [0.95]	1.351* [1.62]	-4.032* [1.34]	32.735 810	1.299* [1.56]	-3.977* [1.33]	32.64 810	1.152* [1.39]	-3.821 [1.28]	33.377 810	1.558** [1.95]	-4.251* [1.41]	36.901 810
Low Income	0.215 [0.81]	4.767* [1.61]	3.350*** [3.74]	0.917 [0.27]	36.073 965	3.423*** [3.84]	0.827 [0.24]	36.801 965	3.258*** [3.64]	1.029 [0.3]	38.991 965	4.026*** [4.07]	0.086 [0.02]	36.35 965
High Income	1.026*** [2.74]	1.812 [0.4]	4.177*** [4.2]	3.097 [0.64]	54.991 1131	4.528*** [4.78]	3.247 [0.66]	64.401 1131	4.539*** [4.65]	3.252 [0.67]	62.433 1131	4.510*** [4.66]	3.239 [0.66]	63.605 1131
Male Head	0.794*** [2.38]	-0.832 [0.25]	4.999*** [5.28]	2.74 [0.73]	60.236 1419	5.154*** [5.7]	2.875 [0.76]	68.566 1419	5.102*** [5.52]	2.829 [0.75]	68.128 1419	5.435*** [5.67]	3.119 [0.82]	65.882 1419
Female Head	0.019 [0.06]	2.157 [0.69]	1.505* [1.63]	-0.165 [0.05]	27.772 677	1.612** [1.78]	-0.331 [0.09]	28.639 677	1.531** [1.67]	-0.205 [0.06]	29.305 677	1.912*** [2.05]	-0.799 [0.23]	29.991 677

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 10: Effects of Log total maternal time in Applied Problems, standardized by child age, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	2.189*** [6.86]	-6.675*** [2.87]	14.180*** [9.43]	-8.116*** [2.55]	75.214 2082	14.243*** [10.14]	-8.123*** [2.55]	87.268 2082	14.710*** [9.98]	-8.18*** [2.52]	81.604 2082	13.830*** [10.13]	-8.073*** [2.57]	89.64 2082
Mother educ ≤ 12	1.886*** [4.49]	-5.337** [1.76]	14.000*** [6.15]	-7.444** [1.68]	28.662 955	13.721*** [6.57]	-7.395** [1.69]	34.858 955	13.999*** [6.37]	-7.443** [1.68]	33.121 955	13.459*** [6.49]	-7.35** [1.7]	34.21 955
Mother educ > 12	2.555*** [5.24]	-8.496*** [2.3]	14.293*** [7.16]	-9.509*** [2]	49.756 1127	14.682*** [7.76]	-9.544*** [1.98]	55.666 1127	15.096*** [7.7]	-9.581*** [1.96]	53.749 1127	14.086*** [7.85]	-9.491*** [2.01]	59.932 1127
Male Child	2.752*** [5.83]	-6.16** [1.81]	15.278*** [7.39]	-13.483*** [2.83]	44.582 1041	15.294*** [7.9]	-13.493*** [2.84]	51.041 1041	15.852*** [7.87]	-13.819*** [2.84]	48.573 1041	14.381*** [8.09]	-12.959*** [2.83]	57.445 1041
Female Child	1.646*** [3.81]	-7.461*** [2.32]	13.218*** [5.92]	-3.11 [0.69]	30.59 1041	13.304*** [6.41]	-3.077 [0.68]	36.031 1041	13.859*** [6.23]	-2.87 [0.62]	32.996 1041	13.305*** [6.28]	-3.077 [0.68]	34.371 1041
White Child	2.502*** [4.96]	-9.482*** [2.29]	16.952*** [7.44]	-1.927 [0.32]	43.592 1112	17.064*** [8.08]	-1.868 [0.31]	52.022 1112	17.122*** [8.01]	-1.838 [0.3]	50.986 1112	16.369*** [8.03]	-2.231 [0.38]	53.603 1112
Black Child	1.544*** [3.5]	-6.668*** [2.05]	11.398*** [4.76]	-10.277*** [2.34]	22.422 803	11.509*** [5.18]	-10.318*** [2.35]	24.862 803	12.480*** [5.15]	-10.674*** [2.32]	22.334 803	11.033*** [5.67]	-10.144*** [2.36]	31.223 803
Low Income	1.510*** [3.56]	-2.353 [0.69]	14.446*** [5.91]	-5.341 [1.06]	27.331 955	14.819*** [6.16]	-5.428 [1.06]	29.764 955	15.235*** [6.17]	-5.524 [1.06]	29.052 955	14.474*** [6.11]	-5.348 [1.06]	29.434 955
High Income	3.163*** [6.47]	-3.735 [0.81]	13.719*** [7.41]	-4.873 [0.84]	49.927 1127	13.383*** [8.11]	-4.835 [0.84]	61.76 1127	13.884*** [7.92]	-4.892 [0.84]	55.947 1127	12.855*** [8.14]	-4.775 [0.85]	65.517 1127
Male Head	2.744*** [6.2]	-11.839*** [3.52]	13.714*** [8.09]	-9.922*** [2.28]	60.389 1410	13.962*** [8.8]	-9.879*** [2.25]	70.072 1410	14.584*** [8.58]	-9.77*** [2.18]	62.956 1410	14.179*** [8.62]	-9.841*** [2.22]	65.67 1410
Female Head	1.375*** [2.82]	1.004 [0.27]	15.115*** [4.69]	-1.949 [0.34]	16.467 672	14.609*** [5]	-1.84 [0.33]	19.483 672	14.232*** [5]	-1.759 [0.32]	21.922 672	12.368*** [5.2]	-1.358 [0.27]	26.457 672

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 11: Effects of Log active maternal time in Applied Problems, standardized by child age, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.423*** [5.89]	-7.021*** [3.02]	14.610*** [6.99]	-16.175*** [3.58]	29.488 2082	15.063*** [7.3]	-16.49*** [3.58]	32.611 2082	14.868*** [7.43]	-16.354*** [3.59]	33.151 2082	14.547*** [7.39]	-16.131*** [3.61]	33.427 2082
Mother educ ≤ 12	1.205*** [3.81]	-5.669** [1.87]	13.308*** [4.54]	-13.647*** [2.24]	14.549 955	13.621*** [4.9]	-13.854*** [2.25]	14.1 955	13.381*** [4.89]	-13.695*** [2.25]	14.928 955	13.330*** [4.85]	-13.662*** [2.25]	13.95 955
Mother educ > 12	1.672*** [4.5]	-8.66*** [2.35]	15.583*** [5.29]	-19.54*** [2.88]	18.502 1127	16.372*** [5.48]	-20.158*** [2.87]	19.603 1127	16.210*** [5.61]	-20.031*** [2.88]	20.389 1127	15.539*** [5.69]	-19.506*** [2.91]	20.818 1127
Male Child	1.953*** [5.67]	-5.344* [1.59]	12.575*** [6.4]	-9.446** [1.74]	25.938 1041	12.748*** [6.72]	-9.513** [1.74]	28.894 1041	12.830*** [6.79]	-9.545** [1.74]	29.325 1041	12.500*** [6.76]	-9.417** [1.75]	29.452 1041
Female Child	0.861*** [2.55]	-8.248*** [2.56]	18.994*** [3.4]	-26.847*** [2.83]	6.547 1041	20.122*** [3.48]	-28.005*** [2.82]	7.388 1041	19.796*** [3.57]	-27.67*** [2.85]	7.186 1041	19.006*** [3.61]	-26.859*** [2.89]	7.496 1041
White Child	1.591*** [3.86]	-9.975*** [2.4]	22.303*** [4.62]	11.394 [1.08]	12.918 1112	21.332*** [5.29]	10.392 [1.05]	15.972 1112	21.641*** [5.19]	10.711 [1.06]	15.243 1112	21.252*** [5.14]	10.309 [1.04]	15.132 1112
Black Child	0.838*** [2.63]	-6.491*** [2]	9.535*** [4.14]	-16.211*** [2.86]	12.834 803	10.282*** [4.07]	-17.046*** [2.83]	12.742 803	10.217*** [4.34]	-16.974*** [2.87]	13.08 803	9.397*** [4.74]	-16.057*** [2.93]	16.684 803
Low Income	1.014*** [3.24]	-2.8 [0.82]	12.992*** [4.69]	-17.575*** [2.46]	14.045 955	13.811*** [4.74]	-18.586*** [2.48]	14.317 955	13.293*** [5.01]	-17.946*** [2.5]	15.587 955	12.936*** [4.9]	-17.506*** [2.48]	15.02 955
High Income	2.073*** [5.41]	-3.119 [0.68]	16.174*** [5.22]	0.829 [0.1]	15.704 1127	15.595*** [5.74]	0.668 [0.08]	19.637 1127	15.807*** [5.64]	0.727 [0.09]	18.899 1127	15.339*** [5.67]	0.597 [0.07]	19.919 1127
Male Head	1.974*** [5.67]	-12.096*** [3.58]	17.466*** [5.36]	-2.333 [0.34]	15.979 1410	16.987*** [5.97]	-2.635 [0.4]	20.291 1410	17.498*** [5.79]	-2.313 [0.34]	18.977 1410	17.654*** [5.65]	-2.215 [0.32]	18.743 1410
Female Head	0.731*** [2.03]	1.29 [0.35]	11.540*** [4.14]	-14.705** [1.93]	12.332 672	11.820*** [4.21]	-15.121*** [1.96]	13.202 672	11.799*** [4.34]	-15.09*** [1.97]	13.178 672	10.777*** [4.43]	-13.576** [1.92]	14.624 672

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Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.



Table 12: Effects of Log total maternal time in Word-Letter Identification, standardized by child age, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	1.208*** [4.03]	1.44 [0.66]	6.624*** [5.86]	0.87 [0.36]	75.023 2096	6.699*** [6.3]	0.862 [0.36]	86.554 2096	6.717*** [5.82]	0.86 [0.36]	81.158 2096	6.497*** [5.77]	0.882 [0.37]	89.126 2096
Mother educ $\leq$ 12	1.072*** [3.04]	2.457 [0.97]	6.399*** [4.06]	1.681 [0.58]	27.843 963	6.020*** [4.28]	1.736 [0.61]	33.401 963	5.857*** [3.71]	1.76 [0.62]	31.95 963	6.916*** [4.47]	1.606 [0.54]	33.124 963
Mother educ $>$ 12	1.358*** [2.74]	-0.014 [0]	6.934*** [4.19]	-0.467 [0.12]	50.722 1133	7.300*** [4.62]	-0.497 [0.12]	56.684 1133	7.309*** [4.47]	-0.498 [0.12]	54.764 1133	6.102*** [3.78]	-0.399 [0.1]	60.862 1133
Male Child	1.804*** [4.14]	1.842 [0.59]	8.103*** [5.27]	-1.712 [0.48]	45.941 1046	8.190*** [5.61]	-1.761 [0.49]	52.162 1046	8.093*** [5.22]	-1.706 [0.47]	49.759 1046	7.296*** [4.91]	-1.257 [0.36]	58.502 1046
Female Child	0.637* [1.54]	0.645 [0.21]	4.881*** [2.91]	2.314 [0.7]	29.426 1050	4.998*** [3.19]	2.359 [0.71]	34.549 1050	5.092*** [2.89]	2.396 [0.72]	31.698 1050	5.300*** [3.11]	2.477 [0.74]	33.176 1050
White Child	1.149*** [2.35]	-7.732** [1.93]	10.053*** [5.48]	-2.895 [0.6]	44.134 1118	9.918*** [5.86]	-2.969 [0.62]	52.297 1118	9.750*** [5.58]	-3.062 [0.64]	51.388 1118	9.225*** [5.42]	-3.352 [0.71]	54.012 1118
Black Child	0.837*** [2.16]	-2.47 [0.87]	3.420*** [2.11]	-3.357 [1.12]	21.968 810	3.344*** [2.2]	-3.331 [1.12]	24.397 810	2.364* [1.44]	-2.994 [1.02]	21.865 810	2.639** [1.88]	-3.089 [1.06]	30.485 810
Low Income	0.683** [1.84]	4.867** [1.65]	6.668*** [3.96]	3.611 [1.06]	26.998 965	6.403*** [3.91]	3.667 [1.08]	29.147 965	6.565*** [3.72]	3.633 [1.07]	28.534 965	7.631*** [3.98]	3.409 [0.96]	28.803 965
High Income	2.064*** [4.23]	0.253 [0.06]	6.411*** [4.23]	-0.174 [0.04]	50.252 1131	6.922*** [4.94]	-0.222 [0.05]	61.828 1131	6.665*** [4.41]	-0.198 [0.04]	56.206 1131	5.517*** [3.96]	-0.089 [0.02]	65.87 1131
Male Head	1.609*** [3.7]	-1.645 [0.5]	7.632*** [5.42]	-0.539 [0.15]	60.376 1419	7.906*** [5.94]	-0.486 [0.13]	69.474 1419	8.088*** [5.61]	-0.451 [0.12]	62.879 1419	7.853*** [5.43]	-0.497 [0.14]	65.88 1419
Female Head	0.590* [1.43]	2.627 [0.84]	3.835*** [2.05]	2.013 [0.61]	16.503 677	3.760*** [2.21]	2.027 [0.62]	19.415 677	2.530* [1.5]	2.26 [0.71]	21.737 677	2.862** [1.8]	2.197 [0.68]	25.772 677

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 13: Effects of Log active maternal time in Word-Letter Identification, standardized by child age, with family income

	OLS		IV 1			IV 2			IV 3			IV 4		
	$\gamma$	$\delta_0$	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N	$\gamma$	$\delta_0$	CD/N
All	0.706*** [3.12]	0.823 [0.38]	6.865*** [5.03]	-3.325 [1.15]	28.919 2096	7.060*** [5.35]	-3.455 [1.19]	32.044 2096	7.637*** [5.25]	-3.841 [1.27]	32.546 2096	8.185*** [5.42]	-4.207* [1.34]	32.742 2096
Mother educ ≤ 12	0.570*** [2.15]	2.172 [0.86]	6.091*** [2.92]	-1.414 [0.39]	13.29 963	6.320*** [3.7]	-1.563 [0.43]	12.858 963	6.912*** [3.33]	-1.947 [0.51]	13.609 963	7.580*** [3.85]	-2.381 [0.6]	12.817 963
Mother educ > 12	0.857*** [2.28]	-0.972 [0.26]	7.531*** [3.74]	-5.965 [1.27]	19.203 1133	7.787*** [3.87]	-6.156* [1.29]	20.445 1133	8.187*** [4.1]	-6.454* [1.33]	21.26 1133	8.754*** [3.86]	-6.877* [1.37]	21.469 1133
Male Child	1.011*** [3.19]	2.228 [0.72]	6.608*** [4.75]	0.129 [0.03]	26.274 1046	6.771*** [5.08]	0.068 [0.02]	29.177 1046	6.815*** [4.97]	0.052 [0.01]	29.729 1046	7.365*** [4.98]	-0.154 [0.04]	29.465 1046
Female Child	0.372 [1.15]	-0.244 [0.08]	7.274*** [2.31]	-7.1* [1.4]	5.917 1050	7.447*** [2.4]	-7.271* [1.43]	6.787 1050	10.731*** [2.34]	-10.533* [1.57]	6.491 1050	9.823*** [2.61]	-9.632* [1.61]	6.893 1050
White Child	0.581* [1.46]	-7.955*** [1.98]	12.907*** [4.04]	4.973 [0.69]	13.219 1118	12.393*** [4.46]	4.431 [0.65]	16.12 1118	12.957*** [4.24]	5.026 [0.7]	15.68 1118	12.750*** [4.31]	4.808 [0.68]	15.448 1118
Black Child	0.245 [0.87]	-3.206 [1.13]	2.817** [1.9]	-6.012** [1.75]	11.914 810	2.531** [1.73]	-5.699** [1.68]	11.859 810	2.412* [1.61]	-5.569* [1.64]	12.118 810	2.603*** [1.97]	-5.778** [1.74]	15.566 810
Low Income	0.360* [1.32]	4.170* [1.4]	6.017*** [3.47]	-2.487 [0.57]	13.237 965	6.100*** [3.55]	-2.584 [0.59]	13.67 965	6.357*** [3.36]	-2.887 [0.64]	14.731 965	7.838*** [3.54]	-4.629 [0.9]	13.931 965
High Income	1.324*** [3.47]	0.643 [0.14]	7.425*** [3.61]	2.447 [0.45]	15.997 1131	7.995*** [4.16]	2.618 [0.47]	19.966 1131	8.560*** [4.13]	2.788 [0.48]	19.263 1131	8.285*** [4.13]	2.705 [0.48]	20.267 1131
Male Head	1.138*** [3.35]	-1.766 [0.54]	9.723*** [4.31]	3.531 [0.75]	15.976 1419	9.648*** [4.77]	3.484 [0.74]	19.848 1419	10.338*** [4.6]	3.914 [0.8]	19.08 1419	11.006*** [4.64]	4.33 [0.85]	18.857 1419
Female Head	0.137 [0.45]	1.881 [0.6]	2.747** [1.82]	-1.897 [0.48]	11.835 677	2.811** [1.95]	-1.989 [0.5]	12.58 677	2.900** [1.86]	-2.118 [0.52]	12.528 677	3.381*** [2.15]	-2.815 [0.68]	13.667 677

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 14: Effects of Log total maternal time in Applied Problems, with HQI - child age interaction

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.856***	7.749***	-0.71***	16.136***	0.829	-0.154	5.13	15.769***	0.995	-0.167	13.27	18.697***	-0.331	-0.061	10.281	13.336***	2.096	-0.256**	18.9
	[2.31]	[9.93]	[11.68]	[2.36]	[0.25]	[0.58]	1740	[3.91]	[0.46]	[0.98]	1740	[3.67]	[0.13]	[0.29]	1740	[4.34]	[1.21]	[1.86]	1740
Mother educ $\leq$ 12	0.932***	6.839***	-0.616***	13.354*	1.032	-0.167	2.205	11.118***	2.078	-0.248*	7.9	13.151***	1.127	-0.174	5.031	10.541***	2.347	-0.269*	8.299
	[1.97]	[6.19]	[7.17]	[1.62]	[0.25]	[0.52]	797	[2.7]	[0.87]	[1.34]	797	[2.32]	[0.37]	[0.74]	797	[2.73]	[1.03]	[1.52]	797
Mother educ $>$ 12	0.734	8.621***	-0.798***	18.288*	0.883	-0.162	3.648	21.187***	-0.394	-0.057	5.71	23.772***	-1.532	0.036	5.784	15.404***	2.153	-0.266*	11.883
	[1.25]	[7.81]	[9.25]	[1.63]	[0.17]	[0.38]	943	[2.73]	[0.1]	[0.18]	943	[2.87]	[0.37]	[0.11]	943	[3.41]	[0.87]	[1.34]	943
Male Child	0.989**	8.772***	-0.769***	16.605**	0.659	-0.142	2.685	16.566***	0.679	-0.144	5.451	18.493***	-0.322	-0.067	6.02	11.247***	3.443*	-0.357***	13.834
	[1.91]	[7.75]	[8.8]	[1.79]	[0.13]	[0.36]	874	[2.56]	[0.18]	[0.5]	874	[2.83]	[0.08]	[0.22]	874	[3.38]	[1.56]	[2.1]	874
Female Child	0.687*	6.837***	-0.658***	16.714*	0.489	-0.125	2.508	15.096***	1.129	-0.179	8.25	18.732***	-0.309	-0.059	5.119	15.093***	1.13	-0.179	7.512
	[1.29]	[6.32]	[7.75]	[1.61]	[0.11]	[0.34]	866	[3.01]	[0.45]	[0.88]	866	[2.56]	[0.09]	[0.21]	866	[2.87]	[0.44]	[0.85]	866
White Child	0.576	9.863***	-0.855***	24.126***	-0.065	-0.028	2.929	19.474***	1.894	-0.191	10.213	20.468***	1.475	-0.156	9.767	15.063***	3.752**	-0.345**	14.28
	[0.92]	[9.29]	[10.42]	[2.02]	[0.01]	[0.06]	961	[3.45]	[0.67]	[0.83]	961	[3.38]	[0.49]	[0.64]	961	[3.53]	[1.67]	[1.89]	961
Black Child	0.61	5.090***	-0.487***	3.956	3.672	-0.388**	3.262	11.239***	0.585	-0.173	4.227	14.870***	-0.954	-0.066	3.546	9.387***	1.37	-0.228*	12.107
	[1.21]	[4]	[4.84]	[0.66]	[1.28]	[1.88]	630	[2.05]	[0.2]	[0.82]	630	[2.13]	[0.27]	[0.25]	630	[3.16]	[0.68]	[1.49]	630
Low Income	0.649*	6.624***	-0.67***	9.601*	2.049	-0.364*	3.137	13.111***	0.255	-0.243	4.873	14.508***	-0.459	-0.195	5.226	12.959***	0.333	-0.249	5.208
	[1.32]	[5.58]	[7.43]	[1.57]	[0.6]	[1.54]	771	[2.26]	[0.08]	[1.04]	771	[2.46]	[0.13]	[0.81]	771	[2.38]	[0.1]	[1.11]	771
High Income	1.382***	8.126***	-0.717***	23.403**	-1.235	0.114	2.936	15.327***	2.195	-0.19	10.336	19.445***	0.446	-0.035	6.68	11.732***	3.722***	-0.325***	17.565
	[2.37]	[7.72]	[8.65]	[1.83]	[0.22]	[0.23]	969	[3.3]	[0.91]	[0.93]	969	[2.87]	[0.14]	[0.12]	969	[3.61]	[2.01]	[2.09]	969
Male Head	0.6	8.755***	-0.751***	19.494**	-0.16	-0.071	3.571	18.032***	0.53	-0.123	9.359	23.253***	-1.932	0.064	5.901	18.288***	0.409	-0.114	8.569
	[1.12]	[9.26]	[10.19]	[1.96]	[0.03]	[0.19]	1198	[3.26]	[0.18]	[0.55]	1198	[2.9]	[0.47]	[0.2]	1198	[3.2]	[0.14]	[0.49]	1198
Female Head	0.808*	5.421***	-0.632***	7.859	2.381	-0.377*	2.204	8.264***	2.207	-0.362**	5.797	7.465***	2.551	-0.391***	7.487	6.089***	3.144**	-0.441***	14.553
	[1.46]	[3.85]	[5.85]	[1.21]	[0.74]	[1.42]	542	[2]	[0.91]	[1.86]	542	[2.02]	[1.13]	[2.16]	542	[2.5]	[1.71]	[3.03]	542

Notes:

1. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
2. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
3. Test-t are in brackets below estimated coefficients.
4. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 15: Effects of Log active maternal time in Applied Problems, with HQI - child age interaction

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.687*** [2.65]	7.683*** [9.78]	-0.703*** [11.37]	10.773*** [2.26]	-0.264 [0.07]	0.148 [0.36]	4.047 1740	12.117*** [3.35]	-1.322 [0.42]	0.262 [0.82]	8.153 1740	11.667*** [3.64]	-0.968 [0.34]	0.224 [0.78]	9.283 1740	11.131*** [3.57]	-0.546 [0.2]	0.179 [0.64]	9.732 1740
Mother educ $\leq$ 12	0.620** [1.86]	6.856*** [6.17]	-0.611*** [6.99]	3.83 [1.09]	4.187* [1.33]	-0.32 [0.96]	4.463 797	9.047*** [2.4]	-0.15 [0.04]	0.154 [0.42]	4.305 797	8.030*** [2.41]	0.696 [0.22]	0.061 [0.19]	4.837 797	8.529*** [2.42]	0.281 [0.08]	0.107 [0.31]	4.59 797
Mother educ > 12	0.739** [1.81]	8.450*** [7.6]	-0.785*** [8.95]	13.414** [1.65]	-1.001 [0.16]	0.219 [0.33]	2.358 943	15.132*** [2.38]	-2.282 [0.45]	0.355 [0.68]	4.221 943	15.207*** [2.73]	-2.338 [0.51]	0.361 [0.78]	5.06 943	13.358*** [2.67]	-0.96 [0.23]	0.215 [0.51]	5.716 943
Male Child	0.995*** [2.73]	8.562*** [7.5]	-0.745*** [8.31]	9.229** [1.87]	0.33 [0.06]	0.102 [0.2]	3.196 874	9.966*** [2.71]	-0.407 [0.1]	0.178 [0.45]	5.596 874	10.463*** [3.09]	-0.904 [0.24]	0.229 [0.62]	6.94 874	9.849*** [2.93]	-0.29 [0.08]	0.166 [0.45]	6.58 874
Female Child	0.343 [0.93]	6.884*** [6.34]	-0.665*** [7.76]	13.501* [1.37]	-0.732 [0.12]	0.203 [0.31]	1.263 866	15.836*** [1.96]	-2.082 [0.4]	0.357 [0.64]	2.888 866	14.244*** [2.15]	-1.162 [0.27]	0.252 [0.54]	2.999 866	12.794*** [2.2]	-0.324 [0.08]	0.157 [0.38]	3.876 866
White Child	0.367 [0.82]	9.895*** [9.27]	-0.861*** [10.32]	14.182** [1.88]	0.016 [0]	0.151 [0.27]	3.506 961	11.872*** [3.43]	1.666 [0.57]	-0.018 [0.07]	10.081 961	12.073*** [3.43]	1.522 [0.51]	-0.004 [0.01]	10.25 961	11.125*** [3.23]	2.2 [0.76]	-0.073 [0.26]	9.546 961
Black Child	0.341 [0.96]	5.123*** [3.98]	-0.495*** [4.85]	7.65 [1.07]	-0.965 [0.15]	0.153 [0.24]	1.341 630	17.396 [0.88]	-9.085 [0.54]	1.018 [0.58]	1.461 630	12.311** [1.69]	-4.848 [0.74]	0.567 [0.84]	1.792 630	8.873*** [2.48]	-1.984 [0.55]	0.262 [0.74]	4.781 630
Low Income	0.694*** [2.04]	6.495*** [5.44]	-0.653*** [7.12]	4.965* [1.3]	2.532 [0.67]	-0.276 [0.78]	3.253 771	8.545*** [2.19]	-0.79 [0.2]	0.041 [0.11]	4.32 771	7.951*** [2.74]	-0.239 [0.08]	-0.012 [0.04]	6.442 771	8.073*** [2.36]	-0.352 [0.1]	-0.001 [0]	5.136 771
High Income	0.940*** [2.24]	8.107*** [7.64]	-0.714*** [8.44]	17.512** [1.65]	-3.452 [0.45]	0.627 [0.72]	1.608 969	12.252*** [2.85]	0.214 [0.06]	0.202 [0.55]	5.893 969	13.969*** [2.61]	-0.982 [0.24]	0.341 [0.75]	4.602 969	11.903*** [2.86]	0.457 [0.14]	0.174 [0.49]	6.186 969
Male Head	0.710** [1.82]	8.544*** [8.98]	-0.736*** [9.79]	17.421* [1.58]	-4.055 [0.48]	0.58 [0.66]	1.654 1198	13.339*** [3.01]	-0.979 [0.27]	0.259 [0.71]	6.461 1198	14.233*** [2.96]	-1.653 [0.42]	0.33 [0.83]	5.991 1198	14.423*** [2.73]	-1.796 [0.42]	0.344 [0.8]	5.396 1198
Female Head	0.547* [1.41]	5.631*** [3.95]	-0.627*** [5.71]	3.813* [1.33]	2.751 [0.94]	-0.324 [1.12]	3.919 542	5.563** [1.87]	1.208 [0.39]	-0.161 [0.53]	4.912 542	6.277*** [2.19]	0.578 [0.19]	-0.095 [0.32]	5.178 542	5.506*** [2.33]	1.258 [0.47]	-0.166 [0.66]	6.874 542

Notes:

1. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
2. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
3. Test-t are in brackets below estimated coefficients.
4. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 16: Effects of Log total maternal time in Word-Letter Identification, with HQI - child age interaction

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.962***	0.21	-0.217***	15.910***	-6.472***	0.324*	4.994	12.667***	-5.022***	0.208*	12.71	17.561***	-7.21***	0.384*	9.856	11.336***	-4.427***	0.16	18.495
	[2.71]	[0.28]	[3.73]	[2.49]	[2.12]	[1.33]	1748	[3.45]	[2.63]	[1.37]	1748	[2.67]	[2.28]	[1.51]	1748	[2.81]	[2.18]	[0.99]	1748
Mother educ ≤ 12	1.261***	-0.295	-0.174***	13.942*	-6.084*	0.272	1.956	9.822***	-4.203**	0.127	7.118	13.601**	-5.929*	0.26	4.505	13.391***	-5.833**	0.253	7.847
	[3.06]	[0.31]	[2.33]	[1.52]	[1.37]	[0.79]	802	[2.24]	[1.79]	[0.7]	802	[1.71]	[1.52]	[0.86]	802	[2.33]	[1.95]	[1.09]	802
Mother educ > 12	0.547	0.706	-0.262***	18.111**	-7.017*	0.381	3.75	17.026***	-6.541**	0.341	5.853	19.600***	-7.671**	0.434	5.952	8.501*	-2.796	0.033	12.008
	[0.92]	[0.63]	[2.99]	[1.87]	[1.55]	[1.03]	946	[2.49]	[1.94]	[1.24]	946	[2.24]	[1.83]	[1.27]	946	[1.53]	[1.03]	[0.15]	946
Male Child	1.126***	1.472*	-0.322***	13.303**	-4.829	0.167	2.811	14.077***	-5.23*	0.198	5.518	21.896*	-9.276	0.512	6.109	5.556	-0.82	-0.144	13.847
	[2.34]	[1.39]	[3.95]	[1.79]	[1.18]	[0.53]	875	[2.37]	[1.54]	[0.75]	875	[1.39]	[1.11]	[0.79]	875	[1.22]	[0.32]	[0.71]	875
Female Child	0.780*	-1.102	-0.107	19.856**	-8.494**	0.519*	2.242	11.589***	-5.293***	0.252*	7.553	15.526***	-6.818***	0.379*	4.647	12.716***	-5.73***	0.289*	7.175
	[1.49]	[1.04]	[1.28]	[1.76]	[1.8]	[1.33]	873	[2.5]	[2.38]	[1.39]	873	[2.17]	[2.16]	[1.46]	873	[2.31]	[2.27]	[1.39]	873
White Child	0.17	2.278***	-0.365***	23.508***	-7.503*	0.457	2.932	14.954***	-3.921*	0.159	9.847	16.133***	-4.415*	0.2	9.489	10.118***	-1.897	-0.01	14.031
	[0.27]	[2.16]	[4.49]	[1.99]	[1.43]	[1.05]	965	[2.95]	[1.56]	[0.77]	965	[2.61]	[1.5]	[0.83]	965	[2.38]	[0.89]	[0.06]	965
Black Child	0.876***	-1.738*	-0.058	8.328**	-4.799**	0.156	3.102	8.295**	-4.785***	0.155	4.08	7.016*	-4.26**	0.118	3.339	5.364***	-3.581***	0.071	11.849
	[2]	[1.58]	[0.66]	[1.67]	[1.95]	[0.87]	635	[1.79]	[2.05]	[0.91]	635	[1.29]	[1.66]	[0.64]	635	[1.97]	[2.2]	[0.58]	635
Low Income	0.971***	-0.163	-0.222***	9.533*	-4.433*	0.065	2.891	7.038*	-3.189	-0.019	4.447	6.768	-3.054	-0.028	4.805	18.847*	-9.078*	0.378	4.84
	[2.2]	[0.15]	[2.77]	[1.53]	[1.32]	[0.28]	775	[1.38]	[1.14]	[0.1]	775	[1.04]	[0.89]	[0.12]	775	[1.54]	[1.41]	[0.86]	775
High Income	1.087**	0.334	-0.211***	19.488***	-7.479**	0.486	2.984	15.611***	-5.835***	0.340*	10.159	20.205***	-7.784***	0.512*	6.649	7.253***	-2.29	0.028	17.572
	[1.85]	[0.31]	[2.53]	[1.98]	[1.67]	[1.25]	973	[3.27]	[2.36]	[1.62]	973	[2.48]	[2.04]	[1.55]	973	[2.07]	[1.24]	[0.18]	973
Male Head	0.458	0.91	-0.288***	18.218***	-7.374**	0.35	3.443	14.925***	-5.84***	0.233	8.827	20.252***	-8.322**	0.422	5.665	16.445***	-6.548**	0.287	8.552
	[0.85]	[0.97]	[3.92]	[2.01]	[1.66]	[1.03]	1203	[2.87]	[2.14]	[1.12]	1203	[2.28]	[1.9]	[1.26]	1203	[2.16]	[1.73]	[0.99]	1203
Female Head	1.034***	-0.523	-0.068	11.251**	-4.852*	0.296	2.205	8.333***	-3.615*	0.192	5.666	6.388*	-2.791*	0.123	7.236	5.631***	-2.47*	0.096	13.831
	[2.16]	[0.43]	[0.73]	[1.65]	[1.45]	[1.08]	545	[2.08]	[1.61]	[1.06]	545	[1.59]	[1.29]	[0.7]	545	[2.07]	[1.42]	[0.69]	545

Notes:

1. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
2. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
3. Test-t are in brackets below estimated coefficients.
4. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 17: Effects of Log active maternal time in Word-Letter Identification, with HQI - child age interaction

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.650***	0.168	-0.21***	11.923***	-8.576**	0.736*	3.681	9.912***	-7.017***	0.568***	7.368	10.880***	-7.768***	0.649***	8.489	11.513***	-8.259***	0.702***	9.02
	[2.62]	[0.22]	[3.55]	[1.96]	[1.76]	[1.43]	1748	[3.09]	[2.57]	[2.02]	1748	[2.9]	[2.47]	[1.99]	1748	[3.06]	[2.6]	[2.14]	1748
Mother educ ≤ 12	0.693***	-0.258	-0.161***	-2.483	2.309	-0.441	4.05	8.624***	-6.666**	0.537*	3.516	8.147***	-6.281**	0.495*	3.993	10.543***	-8.217***	0.706**	4.031
	[2.38]	[0.27]	[2.12]	[0.53]	[0.58]	[1.04]	802	[2.2]	[1.89]	[1.47]	802	[1.98]	[1.73]	[1.31]	802	[2.34]	[2.03]	[1.69]	802
Mother educ > 12	0.546*	0.566	-0.257***	13.420**	-9.01*	0.777	2.328	12.019***	-7.969**	0.665*	4.226	12.462***	-8.298**	0.701*	5.124	13.058***	-8.741**	0.748*	5.548
	[1.32]	[0.5]	[2.88]	[1.75]	[1.51]	[1.24]	946	[2.17]	[1.79]	[1.45]	946	[2.29]	[1.89]	[1.55]	946	[2.1]	[1.76]	[1.45]	946
Male	0.692***	1.461*	-0.311***	7.433*	-5.253	0.384	3.115	8.569***	-6.384**	0.501*	5.257	9.468***	-7.279*	0.594	6.705	11.858***	-9.659**	0.840*	6.098
Child	[2.03]	[1.37]	[3.72]	[1.48]	[1.02]	[0.73]	875	[2.52]	[1.73]	[1.37]	875	[2.13]	[1.55]	[1.25]	875	[2.13]	[1.66]	[1.42]	875
Female	0.586*	-1.19	-0.102	18.458	-11.201	1.052	1.037	11.973**	-7.57**	0.637*	2.513	12.180**	-7.686**	0.650*	2.6	11.064***	-7.062***	0.579*	3.594
Child	[1.61]	[1.12]	[1.21]	[1.2]	[1.25]	[1.05]	873	[1.82]	[1.85]	[1.44]	873	[1.91]	[1.92]	[1.51]	873	[2.12]	[2.09]	[1.61]	873
White	0.253	2.197***	-0.36***	14.548**	-7.948*	0.697	3.368	9.215***	-4.167*	0.306	9.42	9.448***	-4.332*	0.323	9.907	8.916***	-3.955*	0.284	9.05
Child	[0.57]	[2.08]	[4.36]	[1.75]	[1.29]	[1.11]	965	[2.94]	[1.6]	[1.22]	965	[2.65]	[1.5]	[1.15]	965	[2.72]	[1.47]	[1.09]	965
Black	0.209	-1.595*	-0.074	9.368	-8.936	0.71	1.02	12.404	-11.369	0.969	1.153	7.638	-7.55*	0.562	1.374	7.648**	-7.557**	0.562*	4.323
Child	[0.67]	[1.42]	[0.83]	[1.07]	[1.23]	[0.93]	635	[0.91]	[1.01]	[0.82]	635	[1.18]	[1.38]	[0.98]	635	[1.72]	[1.91]	[1.39]	635
Low Income	0.532**	-0.122	-0.217***	6.134*	-5.171*	0.268	2.535	5.875**	-4.937*	0.245	3.34	4.704*	-3.881	0.144	5.295	10.244**	-8.875**	0.624*	4.143
	[1.75]	[0.11]	[2.66]	[1.55]	[1.35]	[0.75]	775	[1.78]	[1.52]	[0.81]	775	[1.5]	[1.26]	[0.5]	775	[1.95]	[1.75]	[1.32]	775
High Income	0.940***	0.167	-0.195***	18.499*	-12.068	1.229	1.685	12.311***	-7.759***	0.731***	6.033	14.384***	-9.203***	0.898**	4.759	11.241***	-7.014***	0.644**	6.34
	[2.22]	[0.16]	[2.28]	[1.3]	[1.19]	[1.06]	973	[2.86]	[2.29]	[1.99]	973	[2.39]	[2.02]	[1.78]	973	[2.53]	[2.04]	[1.71]	973
Male Head	0.653**	0.679	-0.275***	19.230*	-13.157	1.19	1.543	11.323***	-7.272***	0.569*	5.889	12.588***	-8.213**	0.669*	5.725	13.433***	-8.842***	0.735*	5.176
	[1.68]	[0.72]	[3.66]	[1.3]	[1.17]	[1.01]	1203	[2.69]	[2.13]	[1.64]	1203	[2.26]	[1.87]	[1.48]	1203	[2.38]	[1.98]	[1.61]	1203
Female Head	0.335	-0.392	-0.068	5.082*	-4.488*	0.36	3.626	5.936***	-5.226**	0.437*	4.288	6.247***	-5.494**	0.465*	4.521	7.201***	-6.317**	0.551**	6.039
	[1]	[0.32]	[0.72]	[1.57]	[1.41]	[1.15]	545	[2.01]	[1.74]	[1.5]	545	[1.97]	[1.72]	[1.49]	545	[2.23]	[1.91]	[1.72]	545

Notes:

1. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
2. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
3. Test-t are in brackets below estimated coefficients.
4. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 18: Effects of Log total maternal time in Applied Problems, with HQI - child age interaction, standardized by child age

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	1.529*** [4.17]	7.189*** [9.11]	-0.656*** [10.69]	12.583*** [2.55]	1.505 [0.55]	-0.142 [0.59]	7.154 1740	13.844*** [4.19]	0.856 [0.43]	-0.083 [0.48]	15.975 1740	16.592*** [3.95]	-0.556 [0.23]	0.044 [0.21]	11.947 1740	12.588*** [4.47]	1.502 [0.86]	-0.142 [0.94]	19.963 1740
Mother educ ≤ 12	1.529*** [3.24]	6.317*** [5.66]	-0.569*** [6.6]	11.757** [1.72]	0.822 [0.21]	-0.098 [0.29]	2.617 797	10.563*** [2.77]	1.463 [0.59]	-0.153 [0.75]	8.288 797	13.291*** [2.35]	-0.003 [0]	-0.027 [0.09]	4.584 797	10.701*** [2.75]	1.389 [0.56]	-0.146 [0.7]	7.734 797
Mother educ > 12	1.506*** [2.62]	8.012*** [7.16]	-0.736*** [8.41]	12.553** [1.79]	2.535 [0.68]	-0.224 [0.66]	5.249 943	16.963*** [3.07]	0.35 [0.11]	-0.02 [0.07]	8.079 943	18.823*** [3.26]	-0.571 [0.17]	0.066 [0.23]	8.472 943	13.689*** [3.55]	1.972 [0.84]	-0.171 [0.83]	13.826 943
Male Child	1.782*** [3.52]	8.071*** [7.1]	-0.701*** [8]	12.654** [1.94]	1.975 [0.5]	-0.155 [0.45]	3.789 874	13.679*** [2.79]	1.4 [0.45]	-0.103 [0.38]	6.943 874	16.241*** [3.05]	-0.036 [0.01]	0.025 [0.09]	6.928 874	10.806*** [3.46]	3.011* [1.37]	-0.247* [1.33]	13.699 874
Female Child	1.228*** [2.3]	6.418*** [5.84]	-0.618*** [7.16]	13.657** [1.75]	0.52 [0.13]	-0.082 [0.23]	3.374 866	14.042*** [3.16]	0.337 [0.13]	-0.065 [0.29]	9.39 866	16.502*** [2.81]	-0.829 [0.26]	0.041 [0.14]	6.371 866	14.254*** [2.97]	0.237 [0.09]	-0.056 [0.24]	8.294 866
White Child	1.546*** [2.54]	9.274*** [8.59]	-0.802*** [9.57]	17.145*** [2.45]	1.61 [0.43]	-0.095 [0.28]	5.385 961	15.862*** [3.89]	2.24 [0.92]	-0.153 [0.72]	14.609 961	16.905*** [3.85]	1.728 [0.67]	-0.106 [0.47]	13.383 961	13.663*** [3.78]	3.320* [1.51]	-0.252* [1.32]	16.464 961
Black Child	1.141*** [2.25]	4.642*** [3.61]	-0.449*** [4.46]	3.812 [0.56]	3.354 [0.96]	-0.342 [1.18]	2.723 630	10.988*** [2.04]	-0.108 [0.03]	-0.054 [0.21]	4.188 630	15.647*** [2.06]	-2.355 [0.56]	0.134 [0.39]	3.075 630	9.429*** [3.19]	0.645 [0.31]	-0.116 [0.69]	11.837 630
Low Income	1.135*** [2.31]	6.088*** [5.06]	-0.623*** [6.86]	8.118* [1.61]	1.92 [0.58]	-0.295 [1.15]	4.005 771	10.654*** [2.45]	0.406 [0.14]	-0.176 [0.76]	6.799 771	13.113*** [2.6]	-1.062 [0.31]	-0.061 [0.23]	5.961 771	11.529*** [2.46]	-0.116 [0.04]	-0.135 [0.55]	6.19 771
High Income	2.349*** [4.11]	7.408*** [6.95]	-0.643*** [7.63]	17.494*** [2]	0.334 [0.08]	0.053 [0.13]	4.264 969	13.967*** [3.45]	1.981 [0.86]	-0.109 [0.51]	11.292 969	16.532*** [3.18]	0.783 [0.28]	0.009 [0.03]	8.117 969	11.284*** [3.72]	3.233** [1.74]	-0.232* [1.38]	17.657 969
Male Head	1.627*** [3.06]	8.137*** [8.45]	-0.7*** [9.27]	15.618*** [2.21]	0.738 [0.19]	-0.063 [0.19]	5.176 1198	16.237*** [3.6]	0.411 [0.15]	-0.035 [0.15]	11.479 1198	20.663*** [3.23]	-1.928 [0.52]	0.166 [0.53]	7.529 1198	17.568*** [3.4]	-0.292 [0.1]	0.026 [0.1]	9.261 1198
Female Head	1.203*** [2.18]	4.868*** [3.41]	-0.58*** [5.36]	6.347 [1.17]	2.271 [0.73]	-0.334 [1.18]	2.744 542	7.314*** [2]	1.783 [0.73]	-0.288* [1.37]	6.555 542	6.762*** [2.02]	2.062 [0.9]	-0.315* [1.6]	8.137 542	5.659*** [2.47]	2.618* [1.39]	-0.367*** [2.35]	15.542 542

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 19: Effects of Log active maternal time in Applied Problems, with HQI - child age interaction, standardized by child age

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.957*** [3.67]	7.477*** [9.63]	-0.683*** [11.33]	26.435 [1]	-2.764 [0.25]	0.548 [0.43]	0.883 1740	22.068*** [2.01]	-1.009 [0.21]	0.337 [0.61]	2.295 1740	20.637*** [2.24]	-0.434 [0.1]	0.268 [0.57]	2.683 1740	17.657*** [2.48]	0.764 [0.23]	0.124 [0.34]	3.65 1740
Mother educ ≤ 12	0.877*** [2.61]	6.698*** [6.08]	-0.599*** [7.01]	1.236 [0.15]	6.533** [1.64]	-0.579 [1.25]	2.715 797	14.299** [1.69]	0.551 [0.12]	0.133 [0.27]	1.61 797	12.882** [1.7]	1.201 [0.3]	0.056 [0.13]	1.779 797	12.617** [1.83]	1.322 [0.35]	0.041 [0.1]	1.987 797
Mother educ > 12	1.024*** [2.5]	8.193*** [7.47]	-0.758*** [8.87]	59.542 [0.4]	-12.156 [0.23]	1.748 [0.27]	0.426 943	33.7 [1.16]	-3.173 [0.29]	0.642 [0.5]	0.869 943	30.170* [1.47]	-1.946 [0.25]	0.491 [0.54]	1.225 943	23.175** [1.7]	0.486 [0.09]	0.192 [0.31]	1.885 943
Male Child	1.351*** [3.69]	8.302*** [7.41]	-0.718*** [8.29]	17.002 [1.1]	-1.053 [0.11]	0.324 [0.31]	1.05 874	14.852*** [1.96]	0.233 [0.05]	0.18 [0.34]	2.19 874	15.027*** [2.31]	0.128 [0.03]	0.192 [0.42]	3.022 874	13.332*** [2.34]	1.141 [0.29]	0.079 [0.19]	3.259 874
Female Child	0.521* [1.4]	6.708*** [6.21]	-0.649*** [7.69]	55.201 [0.36]	-4.381 [0.14]	0.96 [0.21]	0.214 866	44.56 [0.76]	-2.224 [0.17]	0.648 [0.37]	0.538 866	32.307 [1.03]	0.259 [0.03]	0.288 [0.29]	0.648 866	26.349 [1.2]	1.467 [0.26]	0.113 [0.16]	1.11 866
White Child	0.786** [1.75]	9.660*** [9.16]	-0.841*** [10.32]	29.737 [1.01]	-0.812 [0.07]	0.314 [0.26]	1.493 961	16.273*** [2.82]	4.055* [1.44]	-0.222 [0.82]	5.3 961	17.681*** [2.68]	3.546 [1.13]	-0.166 [0.55]	4.779 961	15.848*** [2.59]	4.208* [1.46]	-0.239 [0.85]	4.698 961
Black Child	0.560* [1.57]	4.848*** [3.8]	-0.474*** [4.73]	40.2 [0.26]	-12.216 [0.18]	1.611 [0.2]	0.189 630	-71.719 [0.23]	35.963 [0.27]	-4.275 [0.26]	0.38 630	25.919 [0.84]	-6.068 [0.43]	0.86 [0.52]	0.43 630	10.610*** [2.19]	0.522 [0.17]	0.055 [0.18]	3.246 630
Low Income	0.892*** [2.59]	6.249*** [5.28]	-0.632*** [7.05]	8.403 [0.96]	1.889 [0.35]	-0.219 [0.44]	1.412 771	12.399** [1.66]	-0.431 [0.09]	0.001 [0]	1.988 771	10.584*** [2.22]	0.622 [0.19]	-0.099 [0.33]	3.33 771	10.440*** [1.99]	0.706 [0.2]	-0.107 [0.33]	2.979 771
High Income	1.364*** [3.25]	7.897*** [7.54]	-0.691*** [8.38]	81.051 [0.36]	-15.313 [0.23]	2.765 [0.28]	0.194 969	22.586** [1.7]	1.712 [0.37]	0.231 [0.38]	1.568 969	30.310* [1.3]	-0.537 [0.07]	0.566 [0.54]	0.845 969	20.879** [1.82]	2.209 [0.54]	0.157 [0.3]	1.815 969
Male Head	1.173*** [3]	8.398*** [8.94]	-0.724*** [9.86]	202.993 [0.14]	-65.233 [0.12]	7.867 [0.13]	0.239 1198	23.476** [1.89]	0.257 [0.05]	0.227 [0.41]	2.512 1198	31.413* [1.52]	-2.638 [0.32]	0.564 [0.62]	1.194 1198	30.362* [1.47]	-2.255 [0.28]	0.52 [0.57]	1.291 1198
Female Head	0.707** [1.8]	5.255*** [3.7]	-0.594*** [5.53]	4.366 [1.09]	3.281 [1.23]	-0.375* [1.4]	2.219 542	6.698* [1.53]	2.023 [0.68]	-0.235 [0.79]	3.01 542	7.697** [1.86]	1.485 [0.5]	-0.175 [0.61]	3.017 542	6.174*** [2.15]	2.306 [0.98]	-0.266 [1.23]	4.966 542

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.



Table 20: Effects of Log total maternal time in Word-Letter Identification, with HQI - child age interaction, standardized by child age

	OLS			IV 1				IV 2				IV 3				IV 4			
	$\gamma$	$\delta_0$	$\delta_a$	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	1.383*** [3.93]	-0.154 [0.2]	-0.185*** [3.15]	12.961*** [2.74]	-6.015*** [2.32]	0.351* [1.53]	6.991 1748	11.122*** [3.65]	-5.084*** [2.83]	0.267** [1.7]	15.384 1748	14.526*** [3.1]	-6.808*** [2.63]	0.423** [1.84]	11.582 1748	10.574*** [3.04]	-4.806*** [2.43]	0.242* [1.39]	19.569 1748
Mother educ $\leq$ 12	1.439*** [3.49]	-0.536 [0.55]	-0.153*** [2.03]	12.258** [1.66]	-6.201* [1.51]	0.335 [0.96]	2.309 802	9.361*** [2.28]	-4.685** [1.91]	0.204 [0.99]	7.41 802	13.863** [1.82]	-7.042** [1.66]	0.407 [1.13]	4.064 802	13.892*** [2.36]	-7.057*** [2.06]	0.408* [1.42]	7.26 802
Mother educ $>$ 12	1.301*** [2.22]	0.181 [0.16]	-0.217*** [2.44]	13.782*** [2.1]	-5.979** [1.7]	0.368 [1.14]	5.458 946	13.617*** [2.73]	-5.898*** [2.09]	0.361* [1.42]	8.373 946	14.412*** [2.62]	-6.29*** [2.06]	0.397* [1.44]	8.816 946	7.589** [1.76]	-2.924 [1.2]	0.082 [0.37]	14.103 946
Male Child	1.672*** [3.54]	1.058 [1]	-0.282*** [3.45]	10.608** [1.95]	-3.928 [1.2]	0.168 [0.58]	3.983 875	11.723*** [2.59]	-4.551* [1.6]	0.224 [0.9]	7.045 875	15.290** [1.73]	-6.542 [1.26]	0.403 [0.88]	7.07 875	6.316* [1.51]	-1.533 [0.6]	-0.048 [0.21]	13.772 875
Female Child	1.025** [1.95]	-1.4* [1.3]	-0.083 [0.98]	16.703** [1.93]	-8.648*** [2.01]	0.584* [1.53]	3.016 873	10.688*** [2.58]	-5.867*** [2.55]	0.332** [1.66]	8.63 873	13.345*** [2.41]	-7.096*** [2.43]	0.444** [1.73]	5.943 873	11.882*** [2.41]	-6.419*** [2.43]	0.382** [1.65]	7.934 873
White Child	0.916* [1.51]	1.840** [1.72]	-0.331*** [3.98]	16.663*** [2.42]	-5.868* [1.6]	0.389 [1.18]	5.473 965	12.086*** [3.25]	-3.629** [1.65]	0.182 [0.94]	14.412 965	12.960*** [3.06]	-4.056** [1.67]	0.222 [1.03]	13.275 965	9.401*** [2.63]	-2.315 [1.11]	0.061 [0.33]	16.344 965
Black Child	1.136*** [2.58]	-1.919** [1.72]	-0.045 [0.52]	9.321* [1.62]	-5.715** [1.89]	0.273 [1.09]	2.516 635	8.214** [1.74]	-5.202*** [2.03]	0.23 [1.09]	4.027 635	7.832 [1.26]	-5.025* [1.58]	0.215 [0.82]	2.859 635	5.434** [1.94]	-3.912*** [2.22]	0.122 [0.85]	11.438 635
Low Income	1.286*** [2.93]	-0.511 [0.47]	-0.194*** [2.4]	8.086* [1.59]	-4.458* [1.39]	0.119 [0.47]	3.606 775	5.080* [1.32]	-2.713 [1.09]	-0.02 [0.1]	6.129 775	5.959 [1.14]	-3.223 [0.99]	0.021 [0.08]	5.404 775	14.893** [1.81]	-8.409** [1.67]	0.432 [1.09]	5.649 775
High Income	1.714*** [2.97]	-0.178 [0.16]	-0.164** [1.92]	15.229*** [2.22]	-6.476** [1.86]	0.461* [1.39]	4.41 973	14.253*** [3.41]	-6.022*** [2.54]	0.417** [1.91]	11.373 973	16.450*** [2.87]	-7.045*** [2.32]	0.517** [1.81]	8.286 973	7.229*** [2.21]	-2.749* [1.46]	0.096 [0.55]	17.863 973
Male Head	1.152*** [2.16]	0.447 [0.46]	-0.252*** [3.34]	14.850*** [2.25]	-6.703** [1.83]	0.372 [1.19]	4.993 1203	13.300*** [3.1]	-5.894*** [2.33]	0.302* [1.41]	10.902 1203	16.673*** [2.73]	-7.654*** [2.22]	0.454* [1.55]	7.321 1203	14.924*** [2.44]	-6.741*** [1.97]	0.375* [1.29]	9.353 1203
Female Head	1.301*** [2.74]	-0.762 [0.62]	-0.049 [0.53]	9.835** [1.77]	-4.986* [1.57]	0.351 [1.23]	2.788 545	7.636*** [2.16]	-3.898** [1.73]	0.248 [1.26]	6.451 545	5.942** [1.67]	-3.06* [1.39]	0.169 [0.87]	7.899 545	5.408*** [2.13]	-2.795* [1.55]	0.144 [0.94]	14.59 545

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 21: Effects of Log active maternal time in Word-Letter Identification, with HQI - child age interaction, standardized by child age

	$\gamma$	$\delta_0$	$\delta_a$		$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N	$\gamma$	$\delta_0$	$\delta_a$	CD/N
All	0.861***	0.123	-0.21***		54.099	-20.685	2.327	0.778	18.945**	-6.942*	0.655*	1.88	23.527*	-8.734*	0.873	2.267
	[3.45]	[0.17]	[3.64]		[0.49]	[0.48]	[0.45]	1748	[1.85]	[1.58]	[1.29]	1748	[1.63]	[1.44]	[1.23]	1748
Mother educ $\leq$ 12	0.798***	-0.143	-0.178***		-7.385	3.417	-0.602*	2.546	15.791*	-6.666	0.6	1.112	18.008	-7.631	0.715	1.269
	[2.71]	[0.15]	[2.38]		[1.03]	[0.98]	[1.54]	802	[1.36]	[1.19]	[0.95]	802	[1.11]	[1]	[0.82]	802
Mother educ $>$ 12	0.895***	0.32	-0.238***		39.294	-13.046	1.448	0.409	26.957	-8.752	0.909	0.909	24.943*	-8.051	0.821	1.295
	[2.16]	[0.29]	[2.74]		[0.66]	[0.61]	[0.55]	946	[1.13]	[0.98]	[0.85]	946	[1.37]	[1.15]	[0.99]	946
Male Child	0.958***	1.433*	-0.311***		20.085	-9.973	0.973	1.027	13.545**	-6.073	0.534	1.998	22.525	-11.429	1.137	2.91
	[2.8]	[1.36]	[3.84]		[0.74]	[0.6]	[0.53]	875	[1.83]	[1.25]	[1.03]	875	[1.15]	[0.94]	[0.85]	875
Female Child	0.722***	-1.286	-0.098		-327.403	58.947	-9.116	0.217	36.363	-7.821	0.891	0.409	26.144	-5.945	0.61	0.556
	[1.98]	[1.21]	[1.19]		[0.07]	[0.07]	[0.07]	873	[0.67]	[0.71]	[0.58]	873	[0.99]	[1]	[0.79]	873
White Child	0.608*	2.006**	-0.347***		34.766	-10.278	1.044	1.427	12.821***	-2.388	0.155	4.829	15.886***	-3.49	0.279	4.622
	[1.37]	[1.92]	[4.31]		[0.85]	[0.68]	[0.62]	965	[2.49]	[0.97]	[0.64]	965	[2.06]	[1.04]	[0.81]	965
Black Child	0.348	-1.63*	-0.078		30.775	-13.691	1.415	0.08	-46.359	16.885	-2.371	0.353	70.292	-29.355	3.354	0.273
	[1.12]	[1.46]	[0.9]		[0.4]	[0.44]	[0.37]	635	[0.27]	[0.25]	[0.28]	635	[0.16]	[0.17]	[0.15]	635
Low Income	0.692***	-0.173	-0.219***		10.237	-5.454	0.289	0.949	9.109*	-4.83	0.229	1.321	11.174	-5.973	0.339	2.513
	[2.25]	[0.16]	[2.74]		[1.1]	[1]	[0.56]	775	[1.38]	[1.2]	[0.61]	775	[0.99]	[0.92]	[0.55]	775
High Income	1.268***	0.059	-0.187***		-466.302	136.792	-20.456	0.205	22.797**	-6.237*	0.754	1.614	31.556	-8.798	1.134	0.934
	[2.99]	[0.06]	[2.25]		[0.05]	[0.05]	[0.05]	973	[1.74]	[1.35]	[1.25]	973	[1.24]	[1.07]	[1]	973
Male Head	1.025***	0.487	-0.261***		-126.857	46.357	-5.719	0.263	20.630**	-6.545*	0.583	2.08	36.154	-12.113	1.246	1.093
	[2.63]	[0.52]	[3.56]		[0.2]	[0.21]	[0.21]	1203	[1.65]	[1.32]	[1.04]	1203	[1]	[0.9]	[0.79]	1203
Female Head	0.459*	-0.333	-0.082		7.648*	-4.075	0.33	2.035	8.059**	-4.289*	0.353	2.55	9.416*	-4.995*	0.431	2.521
	[1.36]	[0.27]	[0.88]		[1.28]	[1.13]	[0.9]	545	[1.69]	[1.37]	[1.15]	545	[1.57]	[1.32]	[1.14]	545

Notes:

1. Maternal time corrected standardized by child age.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 22: First stage for Log total maternal time, standardized by child age

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.434*** [7.39]	-0.035*** [11.1]	0.022** [1.93]	0.013*** [2.05]	0.086 1748	0.208*** [3.18]	-0.026*** [11.77]	0.018* [1.59]	0.010** [1.65]	0.095 1748	0.059 [0.29]	-0.022*** [11.66]	0.020** [1.76]	0.010* [1.54]	0.091 1748	0.008*** [7.9]	-0.001*** [12.04]	0.018* [1.55]	0.008 [1.22]	0.008 1748
Mother educ <= 12	0.455*** [4.57]	-0.035*** [6.72]	0.025* [1.45]	0.018** [1.66]	0.073 802	0.155* [1.49]	-0.026*** [7.25]	0.022 [1.26]	0.014* [1.3]	0.085 802	-0.14 [0.41]	-0.021*** [6.89]	0.022 [1.25]	0.014 [1.26]	0.078 802	0.008*** [4.36]	-0.001*** [7.12]	0.021 [1.22]	0.012 [1.13]	0.085 802
Mother educ > 12	0.416*** [5.91]	-0.035*** [9.05]	0.02 [1.26]	0.009 [1.24]	0.094 946	0.251*** [3.05]	-0.026*** [9.51]	0.016 [0.99]	0.008 [1.05]	0.1 946	0.23 [0.91]	-0.022*** [9.68]	0.018 [1.12]	0.008 [1.08]	0.101 946	0.009*** [6.8]	-0.001*** [10.05]	0.015 [0.97]	0.005 [0.66]	0.111 946
Male Child	0.453*** [5.25]	-0.037*** [8.18]	0.033*** [1.99]	0.016** [1.68]	0.092 875	0.213*** [2.24]	-0.027*** [8.56]	0.030** [1.8]	0.013* [1.39]	0.099 875	-0.259 [0.86]	-0.024*** [8.63]	0.032** [1.92]	0.01 [0.98]	0.099 875	0.008*** [5.16]	-0.001*** [9.03]	0.030** [1.78]	0.008 [0.83]	0.113 875
Female Child	0.431*** [5.34]	-0.032*** [7.51]	0.01 [0.65]	0.011 [1.26]	0.079 873	0.211*** [2.34]	-0.025*** [8.14]	0.006 [0.39]	0.009 [1.02]	0.09 873	0.360* [1.3]	-0.021*** [7.91]	0.008 [0.52]	0.011* [1.29]	0.085 873	0.009*** [6.12]	-0.001*** [8.15]	0.007 [0.43]	0.008 [0.96]	0.089 873
White Child	0.463*** [7.46]	-0.034*** [9.72]	0.037*** [2.07]	0.011* [1.55]	0.106 965	0.259*** [3.45]	-0.026*** [10.62]	0.034** [1.89]	0.009* [1.35]	0.122 965	0.074 [0.3]	-0.022*** [10.5]	0.034** [1.9]	0.009 [1.2]	0.12 965	0.009*** [7.43]	-0.001*** [10.79]	0.033** [1.83]	0.007 [1.05]	0.126 965
Black Child	0.261** [1.94]	-0.03*** [4.82]	0.002 [0.1]	0.018* [1.34]	0.052 635	0.06 [0.48]	-0.021*** [4.81]	-0.005 [0.29]	0.014 [1.09]	0.057 635	-0.403 [1.06]	-0.018*** [4.94]	-0.005 [0.28]	0.011 [0.82]	0.053 635	0.004** [1.95]	-0.001*** [5.4]	-0.013 [0.71]	0.008 [0.58]	0.078 635
Low Income	0.419*** [4.1]	-0.037*** [6.89]	0.013 [0.79]	0.031*** [2.59]	0.077 775	0.185** [1.8]	-0.027*** [7.23]	0.007 [0.44]	0.027*** [2.29]	0.083 775	-0.251 [0.73]	-0.023*** [7.19]	0.008 [0.48]	0.025*** [2.05]	0.081 775	0.009*** [5.15]	-0.001*** [7.26]	0.009 [0.52]	0.026*** [2.17]	0.081 775
High Income	0.437*** [6.25]	-0.034*** [8.86]	0.028* [1.43]	0.004 [0.56]	0.097 973	0.223*** [2.65]	-0.026*** [9.53]	0.023 [1.22]	0.002 [0.27]	0.111 973	0.201 [0.79]	-0.022*** [9.44]	0.024 [1.24]	0.003 [0.39]	0.105 973	0.008*** [5.9]	-0.001*** [9.85]	0.022 [1.15]	-0.002 [0.31]	0.122 973
Male Head	0.420*** [6.84]	-0.033*** [9.85]	0.030* [1.59]	0.016*** [2.55]	0.104 1203	0.189*** [2.67]	-0.025*** [10.41]	0.025* [1.35]	0.014*** [2.11]	0.114 1203	0.284 [1.23]	-0.021*** [10.28]	0.028* [1.48]	0.016*** [2.33]	0.109 1203	0.009*** [7.31]	-0.001*** [10.29]	0.026* [1.4]	0.013** [1.92]	0.11 1203
Female Head	0.492*** [3.5]	-0.039*** [5.69]	-0.007 [0.38]	0.013 [0.82]	0.061 545	0.207* [1.49]	-0.029*** [6.04]	-0.014 [0.73]	0.011 [0.72]	0.071 545	-0.719** [1.73]	-0.025*** [6.04]	-0.019 [0.98]	0.006 [0.41]	0.077 545	0.008*** [3.61]	-0.001*** [6.82]	-0.024 [1.22]	0.009 [0.57]	0.097 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 23: First stage for Log active maternal time, standardized by child age

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.491*** [5.38]	-0.031*** [6.39]	0.081*** [4.41]	-0.013* [1.35]	0.061 1748	0.330*** [3.24]	-0.024*** [6.91]	0.080*** [4.35]	-0.013* [1.32]	0.064 1748	0.181 [0.57]	-0.02*** [6.98]	0.079*** [4.31]	-0.014* [1.34]	0.064 1748	0.009*** [5.43]	-0.001*** [7.06]	0.079*** [4.3]	-0.014* [1.42]	0.065 1748
Mother educ <= 12	0.714*** [4.56]	-0.034*** [4.26]	0.076*** [2.71]	-0.016 [0.9]	0.051 802	0.333*** [2.02]	-0.026*** [4.67]	0.077*** [2.72]	-0.013 [0.73]	0.05 802	-0.027 [0.05]	-0.023*** [4.66]	0.074*** [2.6]	-0.015 [0.82]	0.05 802	0.010*** [3.51]	-0.001*** [4.72]	0.076*** [2.7]	-0.014 [0.8]	0.051 802
Mother educ > 12	0.348*** [3.24]	-0.028*** [4.79]	0.089*** [3.66]	-0.014 [1.26]	0.062 946	0.326*** [2.59]	-0.021*** [5.15]	0.087*** [3.59]	-0.014 [1.23]	0.065 946	0.312 [0.81]	-0.019*** [5.24]	0.086*** [3.55]	-0.013 [1.1]	0.066 946	0.009*** [4.24]	-0.001*** [5.33]	0.086*** [3.53]	-0.014 [1.25]	0.066 946
Male Child	0.693*** [5.23]	-0.045*** [6.38]	0.087*** [3.31]	-0.008 [0.55]	0.075 875	0.415*** [2.84]	-0.033*** [6.76]	0.085*** [3.23]	-0.009 [0.65]	0.081 875	-0.115 [0.25]	-0.029*** [6.87]	0.084*** [3.19]	-0.013 [0.88]	0.083 875	0.011*** [4.82]	-0.001*** [6.79]	0.084*** [3.19]	-0.012 [0.82]	0.081 875
Female Child	0.296*** [2.34]	-0.017*** [2.52]	0.079*** [3.09]	-0.017 [1.26]	0.037 873	0.253** [1.78]	-0.014*** [2.85]	0.079*** [3.08]	-0.015 [1.11]	0.039 873	0.473 [1.09]	-0.012*** [2.85]	0.080*** [3.1]	-0.013 [0.93]	0.039 873	0.006*** [2.7]	0*** [3.09]	0.079*** [3.06]	-0.015 [1.12]	0.04 873
White Child	0.477*** [4.8]	-0.028*** [4.98]	0.047** [1.66]	-0.007 [0.6]	0.047 965	0.166* [1.37]	-0.023*** [5.86]	0.042* [1.46]	-0.008 [0.7]	0.056 965	-0.206 [0.51]	-0.02*** [5.81]	0.040* [1.42]	-0.01 [0.85]	0.055 965	0.009*** [4.91]	-0.001*** [5.93]	0.044* [1.53]	-0.005 [0.47]	0.055 965
Black Child	0.408** [1.95]	-0.032*** [3.31]	0.064*** [2.13]	-0.015 [0.75]	0.043 635	0.445*** [2.3]	-0.022*** [3.24]	0.067*** [2.2]	-0.015 [0.73]	0.043 635	-0.106 [0.18]	-0.02*** [3.35]	0.060** [1.96]	-0.019 [0.91]	0.043 635	0.005* [1.49]	-0.001*** [3.49]	0.052** [1.71]	-0.024 [1.15]	0.051 635
Low Income	0.613*** [3.81]	-0.039*** [4.63]	0.070*** [2.64]	0.008 [0.45]	0.047 775	0.453*** [2.79]	-0.028*** [4.71]	0.072*** [2.66]	0.011 [0.58]	0.048 775	-0.234 [0.43]	-0.025*** [4.97]	0.064*** [2.35]	0.006 [0.3]	0.051 775	0.011*** [3.82]	-0.001*** [4.95]	0.068*** [2.54]	0.008 [0.42]	0.05 775
High Income	0.408*** [3.82]	-0.027*** [4.6]	0.078*** [2.78]	-0.025*** [2.32]	0.072 973	0.213** [1.65]	-0.022*** [5.24]	0.074*** [2.64]	-0.026*** [2.41]	0.079 973	0.279 [0.71]	-0.018*** [5.18]	0.074*** [2.62]	-0.024*** [2.14]	0.077 973	0.008*** [4.04]	-0.001*** [5.33]	0.073*** [2.58]	-0.026*** [2.32]	0.079 973
Male Head	0.402*** [4.23]	-0.027*** [5.07]	0.070*** [2.6]	-0.011 [1.14]	0.056 1203	0.143* [1.3]	-0.021*** [5.69]	0.067*** [2.48]	-0.013* [1.32]	0.063 1203	0.09 [0.25]	-0.018*** [5.75]	0.066*** [2.46]	-0.013 [1.18]	0.061 1203	0.008*** [4.56]	-0.001*** [5.68]	0.067*** [2.49]	-0.011 [1.1]	0.061 1203
Female Head	0.810*** [3.71]	-0.045*** [4.24]	0.036 [1.12]	-0.004 [0.17]	0.047 545	0.682*** [3.13]	-0.032*** [4.31]	0.043* [1.33]	0 [0.01]	0.049 545	-0.223 [0.34]	-0.028*** [4.39]	0.03 [0.91]	-0.006 [0.24]	0.049 545	0.011*** [3.08]	-0.001*** [4.71]	0.026 [0.8]	-0.005 [0.22]	0.055 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Home Quality Index is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 24: First stage for Log total maternal time, with family income

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.371*** [6.67]	-0.029*** [9.82]	0.035*** [3.28]	0.055** [1.65]	0.063 2096	0.108** [1.71]	-0.021*** [10.41]	0.032*** [2.98]	0.058** [1.74]	0.072 2096	-0.272* [1.43]	-0.018*** [10.29]	0.029*** [2.69]	0.072*** [2.12]	0.069 2096	0.006*** [6.01]	-0.001*** [10.65]	0.029*** [2.74]	0.060** [1.81]	0.077 2096
Mother educ $\leq$ 12	0.425*** [4.46]	-0.03*** [6.15]	0.034*** [2.15]	0.062 [1.24]	0.053 963	0.073 [0.72]	-0.022*** [6.59]	0.031*** [1.99]	0.075* [1.5]	0.063 963	-0.778*** [2.44]	-0.018*** [6.21]	0.021 [1.26]	0.091** [1.81]	0.064 963	0.005*** [3.25]	-0.001*** [6.49]	0.028** [1.78]	0.076* [1.53]	0.067 963
Mother educ $>$ 12	0.334*** [5.1]	-0.028*** [7.9]	0.037*** [2.58]	0.056 [1.21]	0.065 1133	0.129** [1.65]	-0.021*** [8.3]	0.034*** [2.37]	0.05 [1.08]	0.074 1133	0.143 [0.63]	-0.018*** [8.33]	0.036*** [2.5]	0.056 [1.19]	0.07 1133	0.006*** [5.29]	-0.001*** [8.77]	0.032*** [2.24]	0.055 [1.2]	0.081 1133
Male Child	0.360*** [4.68]	-0.03*** [7.54]	0.024** [1.68]	0.139*** [3]	0.078 1046	0.1 [1.15]	-0.022*** [7.95]	0.021* [1.49]	0.143*** [3.1]	0.087 1046	-0.424* [1.61]	-0.019*** [8.03]	0.018 [1.22]	0.163*** [3.44]	0.085 1046	0.006*** [4.11]	-0.001*** [8.48]	0.018 [1.26]	0.153*** [3.34]	0.101 1046
Female Child	0.374*** [4.6]	-0.026*** [6.18]	0.046*** [2.93]	-0.029 [0.6]	0.055 1050	0.104 [1.13]	-0.02*** [6.66]	0.043*** [2.78]	-0.028 [0.57]	0.063 1050	-0.161 [0.59]	-0.017*** [6.44]	0.042*** [2.63]	-0.017 [0.35]	0.059 1050	0.006*** [4.2]	-0.001*** [6.6]	0.042*** [2.68]	-0.029 [0.6]	0.063 1050
White Child	0.390*** [6.32]	-0.026*** [7.57]	0.074*** [4.43]	-0.065 [1.27]	0.074 1118	0.143** [1.85]	-0.02*** [8.24]	0.072*** [4.35]	-0.061 [1.21]	0.084 1118	-0.303 [1.26]	-0.017*** [8.17]	0.068*** [4.06]	-0.046 [0.9]	0.084 1118	0.006*** [4.77]	-0.001*** [8.41]	0.069*** [4.16]	-0.068* [1.34]	0.09 1118
Black Child	0.214** [1.78]	-0.028*** [5.18]	0.009 [0.58]	0.114*** [2.01]	0.049 810	0.039 [0.34]	-0.02*** [5.22]	0.003 [0.21]	0.106** [1.9]	0.053 810	-0.48* [1.44]	-0.017*** [5.26]	-0.002 [0.12]	0.120*** [2.12]	0.049 810	0.004*** [2.04]	-0.001*** [5.62]	-0.003 [0.21]	0.096** [1.73]	0.068 810
Low Income	0.327*** [3.5]	-0.027*** [5.59]	0.033*** [2.35]	0.069* [1.28]	0.046 965	0.107 [1.1]	-0.019*** [5.67]	0.030*** [2.15]	0.063 [1.18]	0.049 965	-0.434* [1.4]	-0.017*** [5.73]	0.025** [1.72]	0.074* [1.37]	0.05 965	0.005*** [3.2]	-0.001*** [5.72]	0.027** [1.93]	0.06 [1.12]	0.051 965
High Income	0.404*** [6.02]	-0.03*** [8.43]	0.040*** [2.25]	0.045 [0.74]	0.076 1131	0.097 [1.18]	-0.023*** [9.23]	0.036*** [2.06]	0.053 [0.89]	0.094 1131	-0.125 [0.53]	-0.019*** [9.01]	0.035*** [1.96]	0.057 [0.94]	0.085 1131	0.007*** [5.35]	-0.001*** [9.54]	0.034** [1.96]	0.054 [0.92]	0.102 1131
Male Head	0.365*** [6.14]	-0.029*** [9.04]	0.067*** [3.93]	0.014 [0.32]	0.081 1419	0.101* [1.44]	-0.021*** [9.54]	0.063*** [3.72]	0.017 [0.39]	0.091 1419	-0.079 [0.37]	-0.018*** [9.39]	0.064*** [3.75]	0.027 [0.6]	0.085 1419	0.006*** [5.78]	-0.001*** [9.5]	0.061*** [3.6]	0.019 [0.43]	0.091 1419
Female Head	0.415*** [3.28]	-0.027*** [4.41]	0.006 [0.36]	0.052 [0.84]	0.032 677	0.085 [0.67]	-0.02*** [4.73]	0.002 [0.15]	0.052 [0.84]	0.04 677	-0.893*** [2.35]	-0.017*** [4.67]	-0.009 [0.56]	0.074 [1.2]	0.047 677	0.005*** [2.21]	-0.001*** [5.25]	-0.005 [0.3]	0.043 [0.69]	0.057 677

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 25: First stage for Log active maternal time, with family income

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.864*** [10.36]	-0.058*** [13.29]	0.070*** [4.28]	0.154*** [3.08]	0.112 2096	0.611*** [6.48]	-0.043*** [13.83]	0.070*** [4.29]	0.155*** [3.11]	0.117 2096	0.211 [0.74]	-0.037*** [13.96]	0.066*** [3.95]	0.167*** [3.3]	0.119 2096	0.016*** [10.55]	-0.001*** [13.79]	0.067*** [4.08]	0.156*** [3.14]	0.117 2096
Mother educ $\leq$ 12	1.064*** [7.41]	-0.06*** [8.32]	0.072*** [2.9]	0.148*** [1.99]	0.097 963	0.588*** [3.85]	-0.044*** [8.69]	0.075*** [3.01]	0.157*** [2.1]	0.099 963	-0.3 [0.62]	-0.038*** [8.71]	0.063*** [2.44]	0.179*** [2.37]	0.102 963	0.016*** [6.42]	-0.001*** [8.59]	0.073*** [2.91]	0.158*** [2.12]	0.098 963
Mother educ $>$ 12	0.735*** [7.57]	-0.056*** [10.78]	0.069*** [3.22]	0.174*** [2.54]	0.123 1133	0.620*** [5.33]	-0.041*** [11.15]	0.069*** [3.23]	0.165*** [2.42]	0.128 1133	0.647** [1.92]	-0.035*** [11.15]	0.069*** [3.19]	0.163*** [2.34]	0.13 1133	0.016*** [8.64]	-0.001*** [11.2]	0.066*** [3.05]	0.167*** [2.44]	0.129 1133
Male Child	1.023*** [8.6]	-0.069*** [11.24]	0.079*** [3.41]	0.095* [1.33]	0.136 1046	0.685*** [5.12]	-0.051*** [11.73]	0.079*** [3.4]	0.096* [1.35]	0.144 1046	0.219 [0.54]	-0.044*** [11.85]	0.074*** [3.15]	0.111* [1.53]	0.146 1046	0.018*** [8.65]	-0.001*** [11.63]	0.075*** [3.23]	0.104* [1.46]	0.143 1046
Female Child	0.707*** [6]	-0.047*** [7.5]	0.064*** [2.77]	0.215*** [3.05]	0.086 1050	0.547*** [4.1]	-0.034*** [7.78]	0.066*** [2.82]	0.216*** [3.08]	0.089 1050	0.218 [0.55]	-0.029*** [7.82]	0.062*** [2.61]	0.225*** [3.15]	0.089 1050	0.013*** [6.18]	-0.001*** [7.83]	0.063*** [2.7]	0.214*** [3.05]	0.09 1050
White Child	0.793*** [8.68]	-0.048*** [9.41]	0.064*** [2.58]	-0.187*** [2.47]	0.098 1118	0.370*** [3.24]	-0.037*** [10.35]	0.061*** [2.49]	-0.171*** [2.29]	0.11 1118	-0.007 [0.02]	-0.032*** [10.37]	0.056*** [2.25]	-0.158*** [2.09]	0.11 1118	0.013*** [7.84]	-0.001*** [10.26]	0.060*** [2.42]	-0.172*** [2.3]	0.108 1118
Black Child	0.844*** [4.64]	-0.067*** [8.05]	0.055*** [2.19]	0.254*** [3]	0.104 810	0.817*** [4.73]	-0.047*** [8.05]	0.057*** [2.28]	0.247*** [2.94]	0.104 810	-0.004 [0.01]	-0.041*** [8.15]	0.046** [1.75]	0.262*** [3.09]	0.105 810	0.015*** [5.01]	-0.001*** [8.21]	0.042** [1.68]	0.236*** [2.82]	0.112 810
Low Income	0.904*** [6.36]	-0.062*** [8.49]	0.068*** [2.98]	0.245*** [2.99]	0.096 965	0.744*** [5.03]	-0.043*** [8.44]	0.071*** [3.13]	0.243*** [2.97]	0.097 965	-0.1 [0.21]	-0.039*** [8.82]	0.059*** [2.53]	0.253*** [3.1]	0.101 965	0.016*** [6.35]	-0.001*** [8.51]	0.064*** [2.81]	0.230*** [2.82]	0.096 965
High Income	0.826*** [8.39]	-0.055*** [10.47]	0.071*** [2.84]	-0.039 [0.45]	0.126 1131	0.485*** [4.04]	-0.042*** [11.31]	0.067*** [2.69]	-0.034 [0.39]	0.14 1131	0.530* [1.53]	-0.035*** [11.16]	0.068*** [2.7]	-0.037 [0.43]	0.137 1131	0.016*** [8.94]	-0.001*** [11.28]	0.066*** [2.65]	-0.033 [0.38]	0.138 1131
Male Head	0.754*** [8.59]	-0.052*** [10.97]	0.097*** [4.08]	-0.08 [1.23]	0.116 1419	0.418*** [4.04]	-0.039*** [11.66]	0.094*** [3.98]	-0.074 [1.14]	0.125 1419	0.328 [1.03]	-0.033*** [11.66]	0.094*** [3.93]	-0.069 [1.05]	0.125 1419	0.015*** [9.07]	-0.001*** [11.48]	0.094*** [3.93]	-0.073 [1.13]	0.122 1419
Female Head	1.105*** [5.76]	-0.069*** [7.37]	0.024 [0.92]	0.292*** [3.1]	0.099 677	0.911*** [4.71]	-0.049*** [7.42]	0.032 [1.19]	0.295*** [3.16]	0.101 677	-0.187 [0.32]	-0.042*** [7.57]	0.014 [0.52]	0.312*** [3.32]	0.102 677	0.017*** [5.27]	-0.001*** [7.65]	0.016 [0.6]	0.280*** [3]	0.104 677

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 26: First stage for Log total maternal time, standardized by child age, with family income

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.459*** [8.24]	-0.036*** [12.18]	0.026*** [2.41]	0.059** [1.77]	0.085 2096	0.193*** [3.08]	-0.026*** [12.86]	0.022*** [2.06]	0.062** [1.85]	0.094 2096	-0.053 [0.28]	-0.022*** [12.7]	0.021** [1.94]	0.071*** [2.08]	0.09 2096	0.008*** [8.41]	-0.001*** [12.97]	0.020** [1.91]	0.062** [1.87]	0.096 2096
Mother educ $\leq$ 12	0.500*** [5.25]	-0.036*** [7.46]	0.026* [1.62]	0.065* [1.32]	0.069 963	0.153* [1.52]	-0.027*** [7.94]	0.023* [1.42]	0.078* [1.57]	0.079 963	-0.509* [1.61]	-0.022*** [7.61]	0.015 [0.93]	0.088** [1.76]	0.076 963	0.008*** [4.61]	-0.001*** [7.73]	0.021* [1.31]	0.076* [1.53]	0.079 963
Mother educ $>$ 12	0.432*** [6.55]	-0.035*** [9.95]	0.026** [1.81]	0.057 [1.22]	0.096 1133	0.223*** [2.84]	-0.026*** [10.44]	0.023* [1.55]	0.05 [1.07]	0.105 1133	0.319* [1.4]	-0.022*** [10.4]	0.025** [1.69]	0.053 [1.11]	0.102 1133	0.009*** [7.39]	-0.001*** [10.84]	0.021* [1.43]	0.055 [1.18]	0.111 1133
Male Child	0.451*** [5.83]	-0.038*** [9.38]	0.014 [0.98]	0.144*** [3.06]	0.1 1046	0.181*** [2.08]	-0.028*** [9.9]	0.011 [0.76]	0.147*** [3.15]	0.11 1046	-0.188 [0.71]	-0.024*** [9.92]	0.01 [0.65]	0.160*** [3.33]	0.106 1046	0.008*** [6.06]	-0.001*** [10.33]	0.009 [0.59]	0.155*** [3.33]	0.12 1046
Female Child	0.461*** [5.69]	-0.033*** [7.67]	0.038*** [2.4]	-0.028 [0.57]	0.076 1050	0.194*** [2.13]	-0.024*** [8.17]	0.035*** [2.22]	-0.026 [0.55]	0.085 1050	0.035 [0.13]	-0.021*** [7.95]	0.034*** [2.17]	-0.02 [0.41]	0.08 1050	0.008*** [5.67]	-0.001*** [8.01]	0.034*** [2.2]	-0.029 [0.61]	0.082 1050
White Child	0.469*** [7.5]	-0.033*** [9.39]	0.064*** [3.77]	-0.041 [0.8]	0.103 1118	0.224*** [2.89]	-0.025*** [10.15]	0.060*** [3.61]	-0.039 [0.77]	0.116 1118	-0.091 [0.38]	-0.021*** [10.07]	0.058*** [3.43]	-0.029 [0.56]	0.114 1118	0.008*** [6.67]	-0.001*** [10.18]	0.059*** [3.49]	-0.045 [0.89]	0.118 1118
Black Child	0.330*** [2.77]	-0.034*** [6.38]	0.001 [0.08]	0.106** [1.9]	0.062 810	0.106 [0.95]	-0.025*** [6.45]	-0.005 [0.29]	0.101** [1.82]	0.067 810	-0.286 [0.87]	-0.021*** [6.49]	-0.008 [0.48]	0.112*** [1.98]	0.061 810	0.006*** [3.2]	-0.001*** [6.86]	-0.01 [0.66]	0.091* [1.64]	0.08 810
Low Income	0.437*** [4.69]	-0.035*** [7.3]	0.025** [1.8]	0.059 [1.1]	0.067 965	0.177** [1.83]	-0.025*** [7.48]	0.022* [1.58]	0.052 [0.98]	0.071 965	-0.255 [0.83]	-0.022*** [7.49]	0.019* [1.29]	0.062 [1.16]	0.07 965	0.008*** [4.88]	-0.001*** [7.44]	0.021* [1.44]	0.048 [0.89]	0.071 965
High Income	0.476*** [7.02]	-0.036*** [9.98]	0.028* [1.56]	0.063 [1.05]	0.1 1131	0.197*** [2.39]	-0.028*** [10.82]	0.022 [1.25]	0.07 [1.16]	0.117 1131	0.123 [0.52]	-0.023*** [10.6]	0.023* [1.28]	0.068 [1.13]	0.109 1131	0.009*** [7]	-0.001*** [11.02]	0.021 [1.2]	0.071 [1.19]	0.123 1131
Male Head	0.438*** [7.35]	-0.035*** [10.87]	0.049*** [2.85]	0.025 [0.57]	0.108 1419	0.171*** [2.45]	-0.026*** [11.48]	0.043*** [2.55]	0.028 [0.64]	0.118 1419	0.166 [0.78]	-0.022*** [11.21]	0.046*** [2.71]	0.03 [0.66]	0.11 1419	0.009*** [7.79]	-0.001*** [11.28]	0.043*** [2.54]	0.028 [0.65]	0.114 1419
Female Head	0.537*** [4.22]	-0.035*** [5.72]	-0.001 [0.08]	0.036 [0.58]	0.05 677	0.191* [1.5]	-0.026*** [6.07]	-0.004 [0.27]	0.036 [0.58]	0.058 677	-0.739** [1.95]	-0.022*** [6.08]	-0.016 [0.91]	0.057 [0.92]	0.064 677	0.007*** [3.42]	-0.001*** [6.59]	-0.012 [0.74]	0.026 [0.42]	0.074 677

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 27: First stage for Log active maternal time, standardized by child age, with family income

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.506*** [6.06]	-0.033*** [7.58]	0.061*** [3.68]	0.157*** [3.15]	0.063 2096	0.374*** [3.97]	-0.025*** [7.99]	0.060*** [3.66]	0.159*** [3.19]	0.066 2096	0.147 [0.52]	-0.021*** [8.07]	0.058*** [3.45]	0.166*** [3.27]	0.067 2096	0.009*** [6.22]	-0.001*** [8.08]	0.058*** [3.52]	0.161*** [3.23]	0.067 2096
Mother educ ≤ 12	0.688*** [4.8]	-0.035*** [4.77]	0.066*** [2.61]	0.148*** [2]	0.054 963	0.344*** [2.27]	-0.026*** [5.07]	0.067*** [2.67]	0.157*** [2.11]	0.053 963	-0.319 [0.67]	-0.022*** [5.07]	0.058*** [2.24]	0.174*** [2.31]	0.055 963	0.009*** [3.76]	-0.001*** [5.05]	0.066*** [2.61]	0.158*** [2.12]	0.053 963
Mother educ > 12	0.390*** [4]	-0.032*** [6.12]	0.056*** [2.61]	0.177*** [2.57]	0.066 1133	0.392*** [3.36]	-0.024*** [6.37]	0.057*** [2.62]	0.170*** [2.48]	0.068 1133	0.545* [1.62]	-0.02*** [6.34]	0.057*** [2.61]	0.162*** [2.32]	0.069 1133	0.009*** [5.11]	-0.001*** [6.55]	0.054*** [2.48]	0.171*** [2.51]	0.069 1133
Male Child	0.669*** [5.63]	-0.045*** [7.25]	0.067*** [2.84]	0.102* [1.42]	0.077 1046	0.442*** [3.3]	-0.033*** [7.64]	0.065*** [2.78]	0.104* [1.46]	0.081 1046	0.171 [0.42]	-0.029*** [7.71]	0.063*** [2.64]	0.113* [1.54]	0.082 1046	0.012*** [5.66]	-0.001*** [7.66]	0.063*** [2.67]	0.110* [1.53]	0.082 1046
Female Child	0.342*** [2.9]	-0.021*** [3.38]	0.058*** [2.5]	0.212*** [3.03]	0.047 1050	0.313*** [2.36]	-0.016*** [3.57]	0.060*** [2.55]	0.213*** [3.06]	0.049 1050	0.127 [0.32]	-0.014*** [3.6]	0.057*** [2.42]	0.217*** [3.07]	0.048 1050	0.006*** [3.02]	0*** [3.71]	0.058*** [2.46]	0.214*** [3.06]	0.049 1050
White Child	0.449*** [4.91]	-0.025*** [4.81]	0.051*** [2.05]	-0.164*** [2.18]	0.043 1118	0.152* [1.33]	-0.02*** [5.59]	0.046** [1.87]	-0.148*** [1.98]	0.048 1118	-0.049 [0.14]	-0.017*** [5.57]	0.044** [1.76]	-0.14** [1.85]	0.047 1118	0.008*** [4.45]	-0.001*** [5.56]	0.047** [1.89]	-0.148*** [1.97]	0.046 1118
Black Child	0.488*** [2.69]	-0.04*** [4.84]	0.048** [1.91]	0.245*** [2.9]	0.06 810	0.547*** [3.18]	-0.028*** [4.79]	0.051*** [2.01]	0.239*** [2.85]	0.06 810	-0.103 [0.21]	-0.025*** [4.9]	0.041* [1.56]	0.251*** [2.96]	0.061 810	0.008*** [2.6]	-0.001*** [5.06]	0.036* [1.43]	0.232*** [2.77]	0.068 810
Low Income	0.563*** [3.96]	-0.037*** [5.13]	0.060*** [2.64]	0.235*** [2.88]	0.054 965	0.489*** [3.32]	-0.026*** [5.07]	0.063*** [2.75]	0.235*** [2.88]	0.054 965	-0.199 [0.43]	-0.024*** [5.4]	0.053*** [2.24]	0.243*** [2.98]	0.056 965	0.009*** [3.79]	-0.001*** [5.26]	0.057*** [2.48]	0.227*** [2.79]	0.055 965
High Income	0.457*** [4.63]	-0.03*** [5.63]	0.059*** [2.35]	-0.025 [0.29]	0.065 1131	0.267*** [2.21]	-0.024*** [6.29]	0.055*** [2.19]	-0.02 [0.23]	0.071 1131	0.498* [1.44]	-0.02*** [6.13]	0.057*** [2.27]	-0.029 [0.33]	0.07 1131	0.010*** [5.28]	-0.001*** [6.36]	0.054*** [2.18]	-0.02 [0.23]	0.072 1131
Male Head	0.392*** [4.46]	-0.027*** [5.65]	0.079*** [3.33]	-0.069 [1.06]	0.057 1419	0.171** [1.66]	-0.021*** [6.2]	0.075*** [3.16]	-0.063 [0.97]	0.062 1419	0.295 [0.94]	-0.018*** [6.14]	0.077*** [3.21]	-0.066 [1]	0.061 1419	0.008*** [5.08]	-0.001*** [6.14]	0.076*** [3.19]	-0.063 [0.98]	0.061 1419
Female Head	0.768*** [4]	-0.044*** [4.73]	0.017 [0.65]	0.275*** [2.93]	0.057 677	0.694*** [3.61]	-0.031*** [4.74]	0.025 [0.95]	0.282*** [3.01]	0.059 677	-0.312 [0.54]	-0.027*** [4.9]	0.009 [0.31]	0.296*** [3.15]	0.059 677	0.010*** [3.21]	-0.001*** [5.08]	0.009 [0.35]	0.270*** [2.9]	0.062 677

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Log *per capita* family income is the physical investment measure.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.



Table 28: First stage for Log total maternal time, with HQI - child age interaction

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.284*** [2.53]	-0.023*** [3.02]	0.026*** [2.26]	0.032* [1.52]	0.065 1748	0.179** [1.77]	-0.024*** [4.15]	0.022** [1.9]	0.004 [0.19]	0.073 1748	-0.082 [0.37]	-0.02*** [3.93]	0.023*** [2.03]	0.003 [0.13]	0.07 1748	0.007*** [3.35]	-0.001*** [4.82]	0.021** [1.88]	0.011 [0.58]	0.079 1748
Mother educ $\leq$ 12	0.372** [1.87]	-0.027*** [1.98]	0.028* [1.64]	0.025 [0.68]	0.058 802	0.187 [1.13]	-0.028*** [2.97]	0.024* [1.41]	-0.01 [0.27]	0.07 802	-0.295 [0.8]	-0.02*** [2.3]	0.023* [1.35]	0.003 [0.09]	0.064 802	0.006** [1.79]	-0.001*** [2.84]	0.024* [1.39]	0.014 [0.45]	0.071 802
Mother educ $>$ 12	0.231** [1.79]	-0.021*** [2.38]	0.025* [1.61]	0.035* [1.45]	0.065 946	0.171* [1.38]	-0.02*** [2.93]	0.022* [1.38]	0.015 [0.56]	0.069 946	0.117 [0.44]	-0.02*** [3.35]	0.024* [1.51]	0.003 [0.1]	0.07 946	0.007*** [2.98]	-0.001*** [4.1]	0.021* [1.38]	0.007 [0.33]	0.081 946
Male Child	0.299** [1.9]	-0.025*** [2.27]	0.038*** [2.32]	0.041* [1.4]	0.076 875	0.144 [0.98]	-0.022*** [2.6]	0.035*** [2.11]	0.024 [0.76]	0.081 875	-0.359 [1.11]	-0.019*** [2.59]	0.036*** [2.19]	0.019 [0.56]	0.083 875	0.006*** [1.98]	-0.001*** [3.49]	0.034*** [2.08]	0.018 [0.7]	0.098 875
Female Child	0.294** [1.81]	-0.023*** [2.07]	0.014 [0.84]	0.022 [0.72]	0.055 873	0.226* [1.61]	-0.026*** [3.36]	0.009 [0.56]	-0.017 [0.54]	0.066 873	0.188 [0.63]	-0.021*** [3]	0.011 [0.67]	-0.012 [0.36]	0.06 873	0.008*** [2.96]	-0.001*** [3.55]	0.01 [0.61]	0 [0.02]	0.065 873
White Child	0.272*** [2.34]	-0.019*** [2.42]	0.038*** [2.17]	0.036* [1.63]	0.071 965	0.250*** [2.18]	-0.025*** [4.03]	0.037*** [2.09]	-0.007 [0.27]	0.084 965	-0.062 [0.24]	-0.022*** [3.94]	0.036*** [2.06]	-0.01 [0.41]	0.083 965	0.008*** [3.64]	-0.001*** [4.72]	0.035*** [2]	-0.002 [0.11]	0.092 965
Black Child	0.215 [0.84]	-0.028** [1.7]	0.004 [0.19]	0.013 [0.27]	0.044 635	0.09 [0.46]	-0.022** [1.92]	-0.004 [0.21]	-0.002 [0.03]	0.047 635	-0.488 [1.17]	-0.017** [1.65]	-0.004 [0.21]	0.005 [0.1]	0.045 635	0.004 [1.05]	-0.001*** [2.52]	-0.012 [0.63]	-0.006 [0.16]	0.07 635
Low Income	0.348* [1.63]	-0.031*** [2.11]	0.015 [0.95]	0.028 [0.73]	0.057 775	0.185 [1.08]	-0.025*** [2.42]	0.011 [0.65]	0.016 [0.42]	0.06 775	-0.309 [0.8]	-0.022*** [2.29]	0.01 [0.6]	0.011 [0.27]	0.061 775	0.006** [1.85]	-0.001*** [2.54]	0.012 [0.74]	0.031 [0.97]	0.061 775
High Income	0.269*** [2.15]	-0.021*** [2.42]	0.033** [1.71]	0.032* [1.33]	0.074 973	0.195* [1.59]	-0.025*** [3.78]	0.030* [1.58]	-0.008 [0.31]	0.087 973	0.023 [0.09]	-0.02*** [3.48]	0.031* [1.59]	-0.004 [0.13]	0.081 973	0.007*** [3.06]	-0.001*** [4.61]	0.029* [1.52]	-0.006 [0.28]	0.101 973
Male Head	0.251*** [2.19]	-0.02*** [2.54]	0.041*** [2.19]	0.041** [1.86]	0.083 1203	0.114 [1.06]	-0.019*** [3.22]	0.038*** [2.06]	0.021 [0.89]	0.091 1203	0.047 [0.19]	-0.017*** [3.21]	0.041*** [2.18]	0.018 [0.71]	0.086 1203	0.005*** [2.55]	0*** [3.5]	0.038*** [2.06]	0.031* [1.58]	0.091 1203
Female Head	0.487** [1.73]	-0.038*** [2.05]	-0.007 [0.35]	-0.001 [0.03]	0.04 545	0.346* [1.56]	-0.039*** [2.94]	-0.017 [0.87]	-0.045 [0.91]	0.053 545	-0.618* [1.36]	-0.032*** [2.65]	-0.022 [1.08]	-0.042 [0.82]	0.058 545	0.012*** [2.65]	-0.001*** [3.9]	-0.026* [1.32]	-0.048 [1.16]	0.08 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 29: First stage for Log active maternal time, with HQI - child age interaction

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.470*** [2.66]	-0.028*** [2.34]	0.089*** [4.86]	0.075*** [2.27]	0.11 1748	0.474*** [2.98]	-0.034*** [3.83]	0.086*** [4.68]	0.023 [0.65]	0.114 1748	0.208 [0.6]	-0.032*** [3.99]	0.084*** [4.58]	0.01 [0.27]	0.115 1748	0.011*** [3.6]	-0.001*** [4.14]	0.086*** [4.69]	0.042* [1.45]	0.115 1748
Mother educ ≤ 12	0.656*** [2.09]	-0.028* [1.29]	0.085*** [3.03]	0.078* [1.35]	0.098 802	0.508** [1.94]	-0.04*** [2.62]	0.083*** [2.95]	0.011 [0.2]	0.096 802	0.008 [0.01]	-0.036*** [2.58]	0.078*** [2.75]	0.001 [0.01]	0.097 802	0.012*** [2.27]	-0.001*** [2.7]	0.084*** [2.98]	0.039 [0.81]	0.098 802
Mother educ > 12	0.374** [1.87]	-0.029*** [2.12]	0.097*** [4.02]	0.066** [1.73]	0.118 946	0.451*** [2.35]	-0.031*** [2.91]	0.095*** [3.89]	0.028 [0.66]	0.121 946	0.364 [0.89]	-0.03*** [3.19]	0.093*** [3.83]	0.013 [0.31]	0.123 946	0.011*** [2.96]	-0.001*** [3.3]	0.094*** [3.87]	0.04 [1.17]	0.124 946
Male Child	0.594*** [2.42]	-0.035*** [2.06]	0.101*** [3.85]	0.100*** [2.17]	0.136 875	0.533*** [2.33]	-0.042*** [3.19]	0.096*** [3.65]	0.037 [0.74]	0.14 875	-0.069 [0.14]	-0.038*** [3.3]	0.094*** [3.56]	0.022 [0.43]	0.143 875	0.011*** [2.56]	-0.001*** [3.2]	0.096*** [3.67]	0.067* [1.62]	0.142 875
Female Child	0.360* [1.41]	-0.021 [1.24]	0.084*** [3.24]	0.05 [1.06]	0.076 873	0.433*** [1.96]	-0.028*** [2.23]	0.082*** [3.16]	0.007 [0.15]	0.079 873	0.488 [1.04]	-0.025*** [2.27]	0.081*** [3.13]	0 [0.01]	0.079 873	0.011*** [2.54]	-0.001*** [2.68]	0.082*** [3.17]	0.014 [0.35]	0.081 873
White Child	0.434*** [2.28]	-0.023** [1.78]	0.056** [1.94]	0.081*** [2.24]	0.105 965	0.402*** [2.14]	-0.04*** [3.94]	0.051** [1.78]	-0.006 [0.15]	0.116 965	-0.111 [0.26]	-0.036*** [4.03]	0.047** [1.65]	-0.018 [0.44]	0.117 965	0.014*** [3.97]	-0.001*** [4.25]	0.052** [1.81]	0.016 [0.47]	0.115 965
Black Child	0.449 [1.13]	-0.036* [1.38]	0.070*** [2.33]	0.06 [0.83]	0.081 635	0.459* [1.51]	-0.022 [1.21]	0.074*** [2.43]	0.073 [1.01]	0.081 635	-0.169 [0.26]	-0.023* [1.41]	0.065*** [2.11]	0.05 [0.66]	0.082 635	0.005 [0.84]	-0.001** [1.7]	0.058** [1.92]	0.058 [0.96]	0.09 635
Low Income	0.760*** [2.25]	-0.048*** [2.08]	0.076*** [2.84]	0.053 [0.88]	0.088 775	0.657*** [2.43]	-0.041*** [2.52]	0.076*** [2.83]	0.032 [0.53]	0.09 775	-0.043 [0.07]	-0.043*** [2.86]	0.066*** [2.42]	-0.003 [0.05]	0.094 775	0.013*** [2.35]	-0.001*** [2.75]	0.074*** [2.77]	0.052 [1.03]	0.092 775
High Income	0.347** [1.79]	-0.021* [1.55]	0.090*** [3.18]	0.078*** [2.1]	0.132 973	0.345** [1.81]	-0.033*** [3.21]	0.085*** [2.99]	0.009 [0.22]	0.14 973	0.248 [0.6]	-0.028*** [3.06]	0.084*** [2.96]	0.012 [0.29]	0.138 973	0.011*** [3.09]	-0.001*** [3.51]	0.083*** [2.94]	0.029 [0.86]	0.141 973
Male Head	0.300** [1.67]	-0.017* [1.4]	0.085*** [3.14]	0.095*** [2.76]	0.117 1203	0.224* [1.33]	-0.027*** [2.91]	0.082*** [3.05]	0.04 [1.08]	0.123 1203	0.005 [0.01]	-0.026*** [3.17]	0.081*** [3]	0.025 [0.66]	0.123 1203	0.009*** [2.86]	-0.001*** [3.19]	0.082*** [3.05]	0.057** [1.86]	0.122 1203
Female Head	1.180*** [2.69]	-0.071*** [2.43]	0.038 [1.18]	0 [0]	0.087 545	1.005*** [2.88]	-0.056*** [2.7]	0.043* [1.29]	-0.019 [0.24]	0.089 545	0.103 [0.14]	-0.052*** [2.79]	0.028 [0.85]	-0.042 [0.51]	0.09 545	0.018*** [2.51]	-0.002*** [3.12]	0.029 [0.88]	-0.005 [0.07]	0.095 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 30: First stage for Log total maternal time, with HQI - child age interaction, standardized by child age

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.332*** [2.92]	-0.027*** [3.53]	0.024*** [2.02]	0.034* [1.61]	0.087 1748	0.232*** [2.27]	-0.028*** [4.75]	0.018* [1.54]	0.004 [0.16]	0.095 1748	0.09 [0.41]	-0.024*** [4.58]	0.020** [1.71]	0.002 [0.07]	0.091 1748	0.008*** [3.92]	-0.001*** [5.29]	0.018* [1.58]	0.015 [0.84]	0.1 1748
Mother educ $\leq$ 12	0.381** [1.9]	-0.029*** [2.13]	0.026* [1.5]	0.033 [0.91]	0.073 802	0.208 [1.26]	-0.03*** [3.09]	0.021 [1.2]	0 [0.01]	0.085 802	-0.139 [0.38]	-0.021*** [2.42]	0.022 [1.23]	0.014 [0.35]	0.078 802	0.006** [1.91]	-0.001*** [2.88]	0.022 [1.25]	0.027 [0.88]	0.085 802
Mother educ $>$ 12	0.302*** [2.29]	-0.026*** [2.95]	0.021* [1.32]	0.033* [1.34]	0.095 946	0.256*** [2.03]	-0.026*** [3.7]	0.016 [0.98]	0.006 [0.24]	0.1 946	0.288 [1.06]	-0.026*** [4.17]	0.017 [1.05]	-0.008 [0.27]	0.101 946	0.009*** [3.73]	-0.001*** [4.76]	0.015 [0.97]	0.005 [0.24]	0.111 946
Male Child	0.344*** [2.13]	-0.029*** [2.63]	0.035*** [2.07]	0.039 [1.28]	0.093 875	0.195* [1.31]	-0.026*** [3.06]	0.031** [1.8]	0.018 [0.54]	0.099 875	-0.268 [0.81]	-0.023*** [3.03]	0.032** [1.91]	0.012 [0.35]	0.099 875	0.007*** [2.44]	-0.001*** [3.84]	0.030** [1.81]	0.018 [0.66]	0.113 875
Female Child	0.344*** [2.12]	-0.026*** [2.41]	0.011 [0.7]	0.028 [0.95]	0.079 873	0.282*** [2.02]	-0.029*** [3.75]	0.005 [0.33]	-0.011 [0.36]	0.091 873	0.423* [1.43]	-0.024*** [3.44]	0.007 [0.46]	-0.007 [0.22]	0.085 873	0.009*** [3.28]	-0.001*** [3.83]	0.007 [0.44]	0.01 [0.4]	0.089 873
White Child	0.363*** [3.05]	-0.027*** [3.3]	0.038*** [2.11]	0.032* [1.41]	0.107 965	0.356*** [3.05]	-0.032*** [5.06]	0.033** [1.86]	-0.017 [0.68]	0.123 965	0.188 [0.71]	-0.028*** [5]	0.033** [1.82]	-0.021 [0.81]	0.121 965	0.009*** [4.4]	-0.001*** [5.37]	0.033** [1.82]	-0.001 [0.03]	0.126 965
Black Child	0.205 [0.8]	-0.026* [1.56]	0.003 [0.14]	0.029 [0.62]	0.052 635	0.053 [0.27]	-0.021** [1.76]	-0.005 [0.28]	0.016 [0.35]	0.057 635	-0.437 [1.06]	-0.016* [1.56]	-0.005 [0.24]	0.021 [0.43]	0.053 635	0.004 [1.04]	-0.001*** [2.48]	-0.013 [0.7]	0.008 [0.2]	0.078 635
Low Income	0.398** [1.85]	-0.035*** [2.38]	0.013 [0.8]	0.035 [0.92]	0.077 775	0.219* [1.28]	-0.029*** [2.85]	0.007 [0.4]	0.018 [0.48]	0.083 775	-0.204 [0.53]	-0.025*** [2.64]	0.007 [0.44]	0.015 [0.36]	0.081 775	0.008*** [2.26]	-0.001*** [2.92]	0.009 [0.57]	0.037 [1.18]	0.082 775
High Income	0.318*** [2.5]	-0.025*** [2.9]	0.029* [1.48]	0.03 [1.22]	0.098 973	0.271*** [2.16]	-0.029*** [4.25]	0.023 [1.17]	-0.012 [0.44]	0.111 973	0.237 [0.88]	-0.024*** [4.05]	0.023 [1.2]	-0.009 [0.31]	0.105 973	0.008*** [3.47]	-0.001*** [4.91]	0.022 [1.15]	-0.003 [0.15]	0.122 973
Male Head	0.297*** [2.55]	-0.024*** [3.02]	0.030* [1.62]	0.043** [1.94]	0.105 1203	0.163* [1.5]	-0.023*** [3.78]	0.025* [1.36]	0.021 [0.87]	0.114 1203	0.281 [1.14]	-0.021*** [3.82]	0.028* [1.48]	0.017 [0.68]	0.109 1203	0.006*** [3.11]	-0.001*** [3.94]	0.026* [1.41]	0.036** [1.83]	0.112 1203
Female Head	0.547** [1.92]	-0.043*** [2.29]	-0.009 [0.42]	0.002 [0.05]	0.061 545	0.406** [1.82]	-0.043*** [3.22]	-0.02 [0.99]	-0.043 [0.86]	0.074 545	-0.543 [1.2]	-0.036*** [2.95]	-0.024 [1.18]	-0.041 [0.79]	0.078 545	0.013*** [2.91]	-0.001*** [4.14]	-0.029* [1.43]	-0.041 [0.98]	0.1 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

Table 31: First stage for Log active maternal time, with HQI - child age interaction, standardized by child age

	IV 1					IV 2					IV 3					IV 4				
	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$	$z_t$	$z_t \times a_t$	$x_{t-5}^*$	$k_{t-5}$	$R^2 / N$
All	0.174 [0.98]	-0.008 [0.67]	0.085*** [4.61]	0.053* [1.6]	0.063 1748	0.240* [1.51]	-0.017** [1.93]	0.082*** [4.4]	0.012 [0.34]	0.064 1748	0.116 [0.34]	-0.017*** [2.07]	0.080*** [4.33]	0.004 [0.1]	0.065 1748	0.007*** [2.12]	-0.001*** [2.45]	0.081*** [4.36]	0.013 [0.45]	0.066 1748
Mother educ $\leq$ 12	0.333 [1.06]	-0.007 [0.31]	0.081*** [2.86]	0.061 [1.07]	0.053 802	0.27 [1.03]	-0.022* [1.46]	0.078*** [2.74]	0.005 [0.08]	0.05 802	-0.086 [0.15]	-0.019* [1.39]	0.075*** [2.61]	0.001 [0.01]	0.05 802	0.007* [1.37]	-0.001** [1.67]	0.078*** [2.74]	0.013 [0.27]	0.051 802
Mother educ $>$ 12	0.091 [0.45]	-0.009 [0.68]	0.092*** [3.78]	0.041 [1.07]	0.064 946	0.225 [1.16]	-0.015* [1.34]	0.089*** [3.65]	0.014 [0.34]	0.065 946	0.255 [0.62]	-0.015* [1.61]	0.087*** [3.57]	0.003 [0.06]	0.066 946	0.006** [1.74]	0** [1.91]	0.087*** [3.58]	0.009 [0.27]	0.067 946
Male Child	0.315 [1.27]	-0.017 [0.97]	0.093*** [3.51]	0.072* [1.55]	0.079 875	0.299* [1.3]	-0.025** [1.93]	0.088*** [3.28]	0.022 [0.44]	0.081 875	-0.214 [0.42]	-0.023*** [2.01]	0.086*** [3.23]	0.012 [0.22]	0.083 875	0.007* [1.6]	-0.001*** [2.11]	0.087*** [3.29]	0.034 [0.82]	0.083 875
Female Child	0.042 [0.16]	0.001 [0.06]	0.082*** [3.18]	0.035 [0.75]	0.039 873	0.198 [0.9]	-0.01 [0.8]	0.080*** [3.1]	0 [0.01]	0.039 873	0.432 [0.93]	-0.009 [0.81]	0.080*** [3.11]	-0.001 [0.01]	0.039 873	0.006* [1.37]	0* [1.36]	0.079*** [3.06]	-0.01 [0.25]	0.04 873
White Child	0.219 [1.15]	-0.009 [0.71]	0.050** [1.73]	0.048* [1.33]	0.049 965	0.235 [1.25]	-0.028*** [2.68]	0.041* [1.43]	-0.026 [0.65]	0.056 965	-0.112 [0.26]	-0.025*** [2.72]	0.039* [1.36]	-0.034 [0.83]	0.055 965	0.010*** [2.89]	-0.001*** [2.97]	0.043* [1.52]	-0.013 [0.38]	0.055 965
Black Child	0.052 [0.13]	-0.007 [0.27]	0.069*** [2.28]	0.057 [0.78]	0.044 635	0.138 [0.46]	0 [0]	0.074*** [2.4]	0.076 [1.05]	0.045 635	-0.363 [0.57]	-0.004 [0.22]	0.065*** [2.1]	0.057 [0.75]	0.045 635	0 [0.07]	0 [0.71]	0.056** [1.82]	0.034 [0.56]	0.053 635
Low Income	0.455* [1.35]	-0.027 [1.18]	0.073*** [2.69]	0.039 [0.64]	0.047 775	0.420* [1.56]	-0.025* [1.56]	0.072*** [2.65]	0.02 [0.33]	0.048 775	-0.177 [0.29]	-0.028** [1.85]	0.063*** [2.3]	-0.007 [0.1]	0.051 775	0.009** [1.69]	-0.001*** [1.99]	0.069*** [2.56]	0.021 [0.41]	0.05 775
High Income	0.062 [0.32]	-0.001 [0.11]	0.083*** [2.92]	0.051* [1.36]	0.076 973	0.128 [0.67]	-0.016* [1.52]	0.076*** [2.68]	-0.002 [0.06]	0.079 973	0.192 [0.47]	-0.012* [1.37]	0.076*** [2.68]	0.003 [0.08]	0.078 973	0.006** [1.67]	0** [1.92]	0.074*** [2.63]	0.001 [0.01]	0.079 973
Male Head	0.02 [0.11]	0.002 [0.13]	0.073*** [2.72]	0.071*** [2.06]	0.061 1203	-0.008 [0.05]	-0.011 [1.14]	0.068*** [2.54]	0.029 [0.77]	0.064 1203	-0.025 [0.07]	-0.011* [1.36]	0.068*** [2.52]	0.019 [0.49]	0.062 1203	0.005* [1.43]	0* [1.56]	0.068*** [2.53]	0.028 [0.93]	0.062 1203
Female Head	0.874*** [1.98]	-0.05** [1.71]	0.035 [1.06]	-0.016 [0.21]	0.048 545	0.788*** [2.26]	-0.04** [1.91]	0.04 [1.2]	-0.029 [0.37]	0.049 545	-0.067 [0.09]	-0.038*** [2]	0.026 [0.76]	-0.048 [0.59]	0.049 545	0.014** [1.95]	-0.001*** [2.5]	0.024 [0.71]	-0.035 [0.53]	0.055 545

Notes:

1. First-stage estimates come from the sample of valid Word-Letter Identification test. Minor differences occur for samples of other tests.
2. Unreported regressors include female child dummy and mother education. Interaction term of Home Quality Index and child age is included.
3. IV1 are Avg log wage child care occupation by state & year (CPS) and child age interaction. IV2 are Avg log wage housekeeping by state & year (CPS) and child age interaction. IV3 are Avg log wage offered by state & year (CPS) and child age interaction. IV4 are Avg income child subsidy by state & year (CPS) and child age interaction.
4. Test-t are in brackets below estimated coefficients.
5. \*\*\* Significant at 5%; \*\* Significant at 10%; \* Significant at 20%.

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