The EITC and Maternal Time Use: More Time Working and Less Time with Kids?

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Tax Policy for Low-Income Americans
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Main Question

1. How do mothers reallocate their time when they begin working?
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     - If less time with children, what kind of time?
     - Investment or passive noninvestment?
     - Effects may vary by traits of mothers and their kids

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2. Did the EITC increase maternal employment after the 1990s?
   - Time use data is available 2003-2018
   - Can't answer #1 without a policy-induced increase in employment

Weekly Hours Mothers Spend with Kids (by Child's Age)
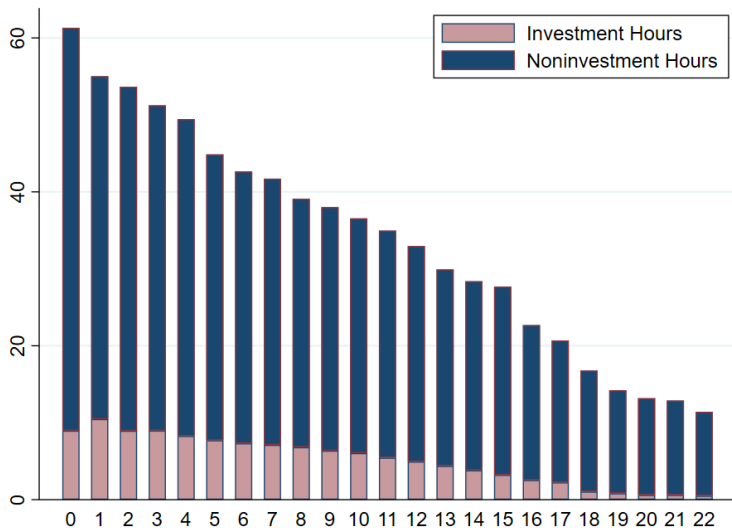
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- Quasi-experimental research design exploiting several policy changes:
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  - Main approach: use *MaxEITC*
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  - f(number of kids, age of children, year, state)
  - Reflect plausibly exogeneous policy variation
  - Captures extensive margin labor supply incentives

Outline of the Results

1. State and federal EITC expansions between 2003 and 2018 continued to increase maternal labor supply
   - Some of the first evidence on this time period

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- ■ All results robust to various controls, state and federal EITC
- ■ Responses concentrated among unmarried, lower-education, younger mothers, and mothers with younger children

The EITC

- The EITC is one of the U.S.'s most important anti-poverty programs

- The EITC is an earnings subsidy, requires work, distributes $65 billion to 28 million families each year (average of $3,000, up to $6,500)

- The EITC lifts 6 million people out of poverty each year

- Total EITC benefits are determined by annual earnings, number of children, state of residence, and marital status.

Federal EITC Structure, 2018

State EITCs

EITC by State (2000)

EITC by State (2005)

EITC by State (2010)

EITC by State (2017)
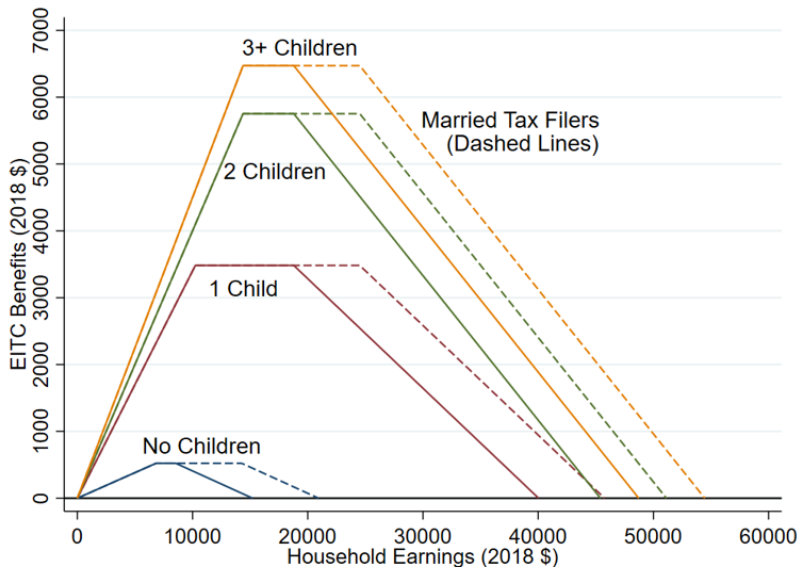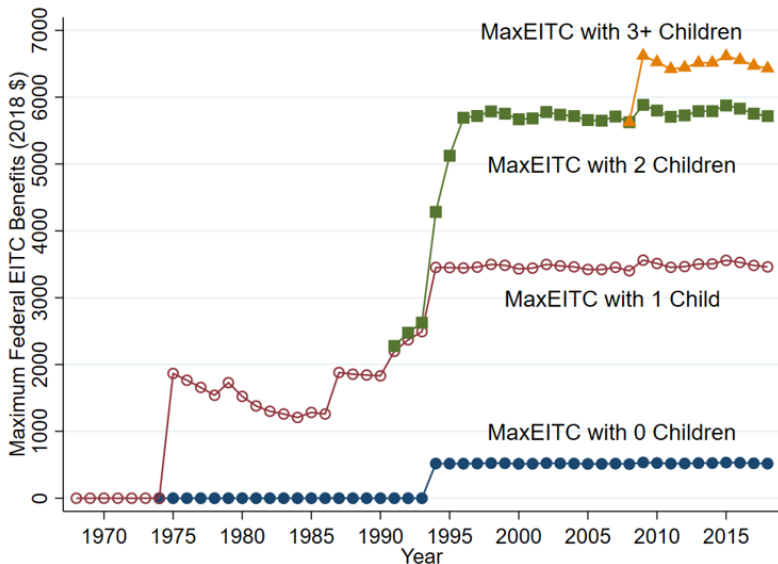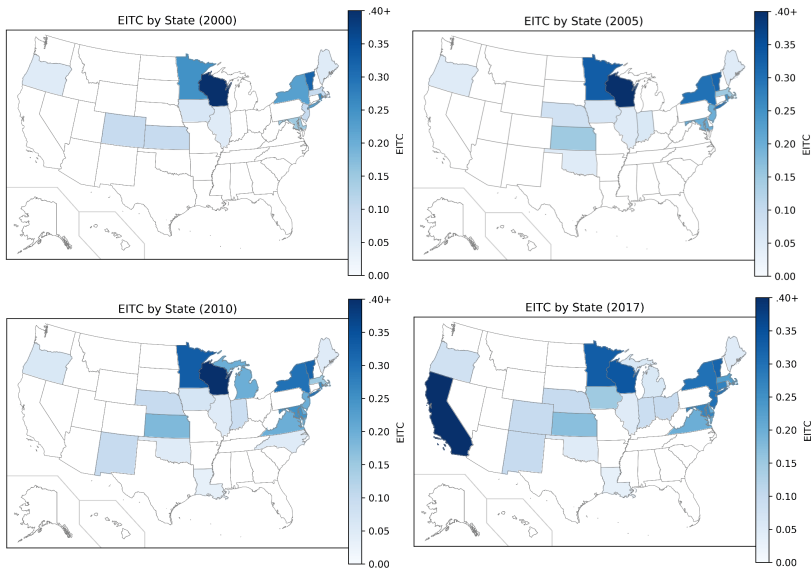
Federal+State *MaxEITC* Over Time

Data

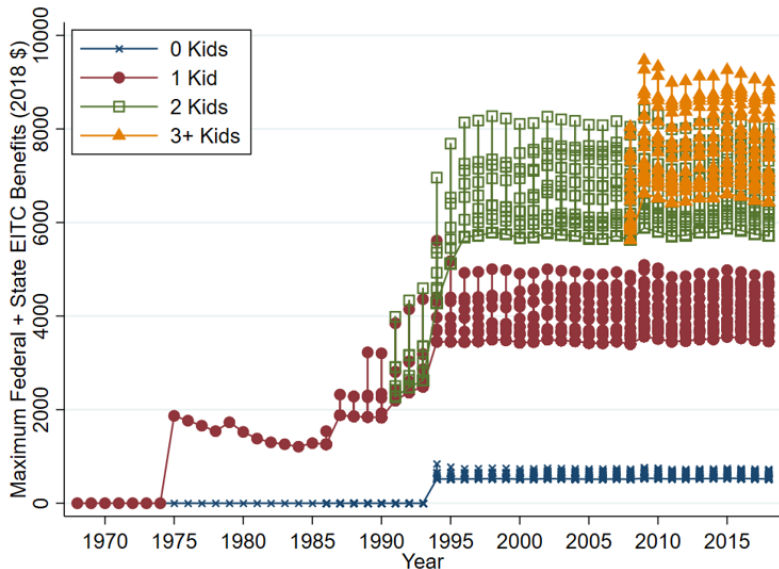- BLS American Time Use Survey (ATUS) 2003-2018
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- Each obs has a 24-hour period divided into 100s of activities (see apx)
- We categorize time into: work, home production, leisure, school, sleep (time with kids generally fall into leisure or home production)
  - We rescale everything to weekly hours
  - We observe "who" each activity was with
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    - We observe "who" each activity was with
    - Time-use data exists for some earlier years, but small samples
- Main sample: all 43,685 mothers ages 18-49 (14,940 unmarried)
    - EITC research often uses women without kids as a control group, but here the outcome is non-zero just for mothers

Table 2: Weekly Hours Spent on Different Activities, by Number of Children

Activity	All Mothers		Mothers with 1 Child		Mothers with 2 Children		Mothers with 3+ Children	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Work (CPS)	21.6	19.5	23.9	19.5	21.8	19.4	16.9	18.8
Home Production	46.5	23.7	41.3	22.2	48.2	23.3	53.3	25.0
with Children	22.0	21.0	15.4	17.9	24.6	20.6	30.4	23.1
Not with Children	24.4	18.1	26.0	18.8	23.6	17.3	22.9	17.6
Leisure	33.4	22.1	34.7	22.8	32.7	21.5	32.1	21.5
with Children	15.6	18.4	13.2	18.0	16.7	18.3	18.3	18.7
Not with Children	17.8	19.5	21.6	21.4	16.0	17.7	13.8	17.0
Total Hours with Children	38.7	31.7	29.3	30.0	42.5	30.5	50.2	31.7
Investment into Children	6.0	10.1	4.3	9.0	6.9	10.5	7.9	11.1
Observations	43,685		17,012		17,144		9,529	

Empirical Strategy

$$Y_{ist} = MaxEITC_{ist}Mar_{ist}\alpha_1 + MaxEITC_{ist}Unmar_{ist}\alpha_2 + X'_{ist}\alpha_3 + \gamma_{st} + \epsilon_{ist}$$

- $MaxEITC$ units are \$1,000s of 2018 \$
- i refers to mother, s to state of residence, and t to year
- Mar_{ist} and $Unmar_{ist}$ are indicators for married and unmarried
- Similar results when we restrict sample by marital status

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- Robust to additional controls, or just year FE and state FE
- ϵ_{ist} assumed indep. of *MaxEITC* and marital status, given X_{ist}, γ_{st}
- Standard errors robust to heteroskedasticity, clustered at state level
- ATUS weights used

Are State EITCs Exogenous?

- We want our results to reflect exogenous policy changes, not economic conditions, etc.
- Using various approaches, we conclude that state EITC policy variation is plausibly exogenous
- We control for state $\times$ year FE throughout the analysis
- (And show results with state $\times$ year $\times$ marital status FE)

Results: Labor Supply

	LFP	Weekly Work Hours	EITC Benefits	Any EITC
	(1)	(2)	(3)	(4)
	Panel A: Average Effects			
MaxEITC	0.024	0.97	378.3	0.010
	(0.011)	(0.53)	(68.2)	(0.013)
R-squared	0.124	0.161	0.304	0.313
	Panel B: Effects by Marital Status			
MaxEITC × Married	0.012	0.56	329.0	0.004
	(0.011)	(0.57)	(68.8)	(0.013)
MaxEITC × Unmarried	0.041	1.59	451.6	0.018
	(0.011)	(0.50)	(63.3)	(0.013)
Equal Effects (p-val.)	0.000	0.000	0.000	0.001
R-squared	0.127	0.162	0.306	0.313
Mean Dep Var	0.74	21.6	1021.9	0.34

Summary of Labor Supply Results

- We find *MaxEITC* is associated with increases in labor supply

- Positive average effect, driven by unmarried, lower education, predicted lower-income mothers

- Consistent with a large literature on the EITC and labor supply, but provides new evidence on effects of recent EITC expansions kleven

	Work	Home Production	Leisure	School	Sleep	Uncat.
	(1)	(2)	(3)	(4)	(5)	(6)
MaxEITC × Married	1.05	0.03	-1.02	-0.46	0.32	0.07
	(0.81)	(0.76)	(0.49)	(0.18)	(0.40)	(0.09)
MaxEITC × Unmarried	1.56	-0.54	-1.27	-0.40	0.56	0.08
	(0.70)	(0.64)	(0.50)	(0.24)	(0.51)	(0.10)
Eq. Eff. (p-val.)	0.207	0.010	0.232	0.559	0.158	0.855
R-squared	0.186	0.151	0.137	0.170	0.136	0.050
Mean Dep Var	23.5	46.5	33.4	2.2	60.9	1.5

Results: Decomposing Home Production and Leisure Time

	Home Production		Leisure	
	With Children	Without Children	With Children	Without Children
	(1)	(2)	(3)	(4)
MaxEITC × Married	0.07	-0.04	-0.74	-0.28
	(0.55)	(0.54)	(0.41)	(0.52)
MaxEITC × Unmarried	-1.04	0.51	-1.05	-0.22
	(0.46)	(0.49)	(0.36)	(0.52)
Equal Effects (p-val.)	0.000	0.000	0.023	0.730
R-squared	0.310	0.128	0.201	0.200
Mean Dep Var	22.0	24.4	15.6	17.8

Results: Time with Kids

	Total Time	Non-Investment Time		
		Total	Home Prod	Leisure
	(1)	(2)	(3)	(4)
MaxEITC × Married	-0.52	-0.78	-0.11	-0.82
	(0.79)	(0.65)	(0.50)	(0.31)
MaxEITC × Unmarried	-1.99	-1.93	-0.96	-1.08
	(0.68)	(0.58)	(0.43)	(0.31)
Eq. Eff. (p-val.)	0.000	0.000	0.000	0.034
R-squared	0.365	0.323	0.306	0.152
Mean Dep Var	38.7	32.7	19.9	11.7

Results: Investment Time with Kids

| | Total Time | | Investment Time | | | |
| | | | Total | Academic | Health | Other |
	(1)		(5)	(6)	(7)	(8)
MaxEITC ×	-0.52		0.26	0.20	-0.12	0.18
Married	(0.79)		(0.23)	(0.11)	(0.05)	(0.22)
MaxEITC ×	-1.99		-0.05	0.02	-0.15	0.07
Unmarried	(0.68)		(0.20)	(0.09)	(0.05)	(0.20)
Eq. Eff. (p-val.)	0.000		0.000	0.000	0.021	0.088
R-squared	0.365		0.157	0.088	0.035	0.143
Mean Dep Var	38.7		6.0	1.2	0.2	4.6

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- We find little evidence of decreased investment into children
- Wait, are we being too quick to dismiss benefits of "non-invest" time?

Decomposing Non-Investment Home Production with Kids

	Personal Care	Housework	Waiting, Shopping	Caring for Others	Civic	Eating	Errands, Travel
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MaxEITC ×	-0.04	-0.16	-0.01	0.01	-0.02	0.12	-0.01
Married	(0.05)	(0.31)	(0.36)	(0.06)	(0.01)	(0.12)	(0.10)
MaxEITC ×	-0.08	-0.59	-0.11	-0.02	-0.02	0.01	-0.15
Unmarried	(0.05)	(0.29)	(0.33)	(0.04)	(0.01)	(0.12)	(0.09)
Equal Effects (p-val.)	0.238	0.000	0.064	0.373	0.815	0.028	0.002
R-squared	0.044	0.139	0.265	0.033	0.044	0.199	0.092
Mean Dep Var	0.24	6.09	6.48	0.12	0.01	4.09	2.85
% Pos Dep Var	3.5	60.0	68.5	3.4	0.2	72.8	56.9

- Possible that "quality time" can be found in some of these categories

Decomposing Non-Investment Leisure with Kids

	Helping Non-HH Members	Educ	Socializing	Waiting and Relaxing	Religious	Volunteer	Phone	Travel
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MaxEITC ×	-0.04	0.00	-0.22	-0.44	-0.08	-0.11	0.05	0.01
Married	(0.06)	(0.01)	(0.14)	(0.26)	(0.06)	(0.07)	(0.03)	(0.05)
MaxEITC ×	-0.04	-0.00	-0.23	-0.52	-0.12	-0.18	0.03	-0.03
Unmarried	(0.06)	(0.01)	(0.13)	(0.27)	(0.06)	(0.08)	(0.02)	(0.05)
Equal Effects (p-val.)	0.994	0.810	0.755	0.397	0.044	0.002	0.092	0.008
R-squared	0.057	0.040	0.076	0.105	0.070	0.032	0.056	0.071
Mean Dep Var	0.18	0.02	2.66	7.09	0.52	0.33	0.14	0.78
% Pos Dep Var	5.5	0.2	25.5	49.8	7.2	3.3	4.0	26.5

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Additional Analyses

- Weekends vs weekdays
    - Time use data collected over a 24 hour period
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  - Some (insignificant) evidence mothers try to make up time on weekends
- We look at effects on the distribution of time use
- We run analysis by age of mothers, age of children
- Results similar if we restrict sample to unmarried (or married) mothers
- We run an event study based solely on the 2009 federal expansion
  - Allows us to look at pre-trends and effects over time

Conclusion

- Using data from the 2003–2018 ATUS, we study the effect of the 2009 federal EITC expansion and several state EITC expansions on maternal time allocation decisions

- Recent EITC expansions increased maternal work time, reduced home production and leisure time

- Unmarried mothers respond to increases in the EITC by scaling back time with their children, especially primary-school aged children

- In particular, they spend less time engaging in activities like personal care, housework, and relaxing when with their children

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- Unmarried mothers respond to increases in the EITC by scaling back time with their children, especially primary-school aged children
- In particular, they spend less time engaging in activities like personal care, housework, and relaxing when with their children
- Importantly, they do not devote less time to active learning and development activities like reading or helping with homework
  - Among investment-related activities, only time spent providing and obtaining medical care declines
  - We suspect that this reflects diminished need for medical services due to health benefits associated with higher incomes

Conclusion

- While the EITC draws single mothers into the labor market and away from their children, the adverse developmental consequences are likely to be limited, since reductions in time spent with children do not appear to be investment-oriented

- Consistent with previous evidence that benefits for children from greater financial resources appear to dominate any potential adverse impacts of reductions in non-investment time (Dahl and Lochner, 2012, 2017; Chetty et al., 2011; Bastian and Michelmore, 2018; Manoli and Turner, 2018; Agostinelli and Sorrenti, 2018; Agostinelli et al., 2020)

- **Thank you!**

Implication of Labor Supply Results

- New work by Kleven argues that the EITC does not impact labor supply
  - He argues EITC expansions outside of 1990s have no effect, and that the alleged effect in the 1990s is actually driven by welfare reform

- Our study implicitly addresses Kleven in two main ways:
  - We focus on 2003-2018, well after welfare reform, ensuring that our EITC estimates are not confounded with the simultaneity of 1990s EITC expansions and welfare reform
  - By using time-use outcomes, we provide a complementary approach to testing whether the EITC affected maternal labor supply (more time-use outcomes coming up...) back