How Does the Earned Income Tax Credit Work? Exploring the Role of Commuting and Personal Transportation

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Why study the Earned Income Tax Credit?

- **Policy:** Largest anti-poverty cash-transfer program in the U.S. ($64B to 31M families in 2022)
- **History:** Linchpin of the political shift from cash welfare to tax credits and means-tested programs
- **Economics:** Mainstay of empirical investigations into neoclassical labor supply models

Overview

- The EITC is extensively studied but little work focuses on mechanisms
- This paper…
  - hypothesizes that EITC works (in part) by helping households purchase and maintain cars
  - develops new simulated instrument technique to account for regional heterogeneity in exposure to EITC increases
  - finds empirical support for the hypothesized mechanism

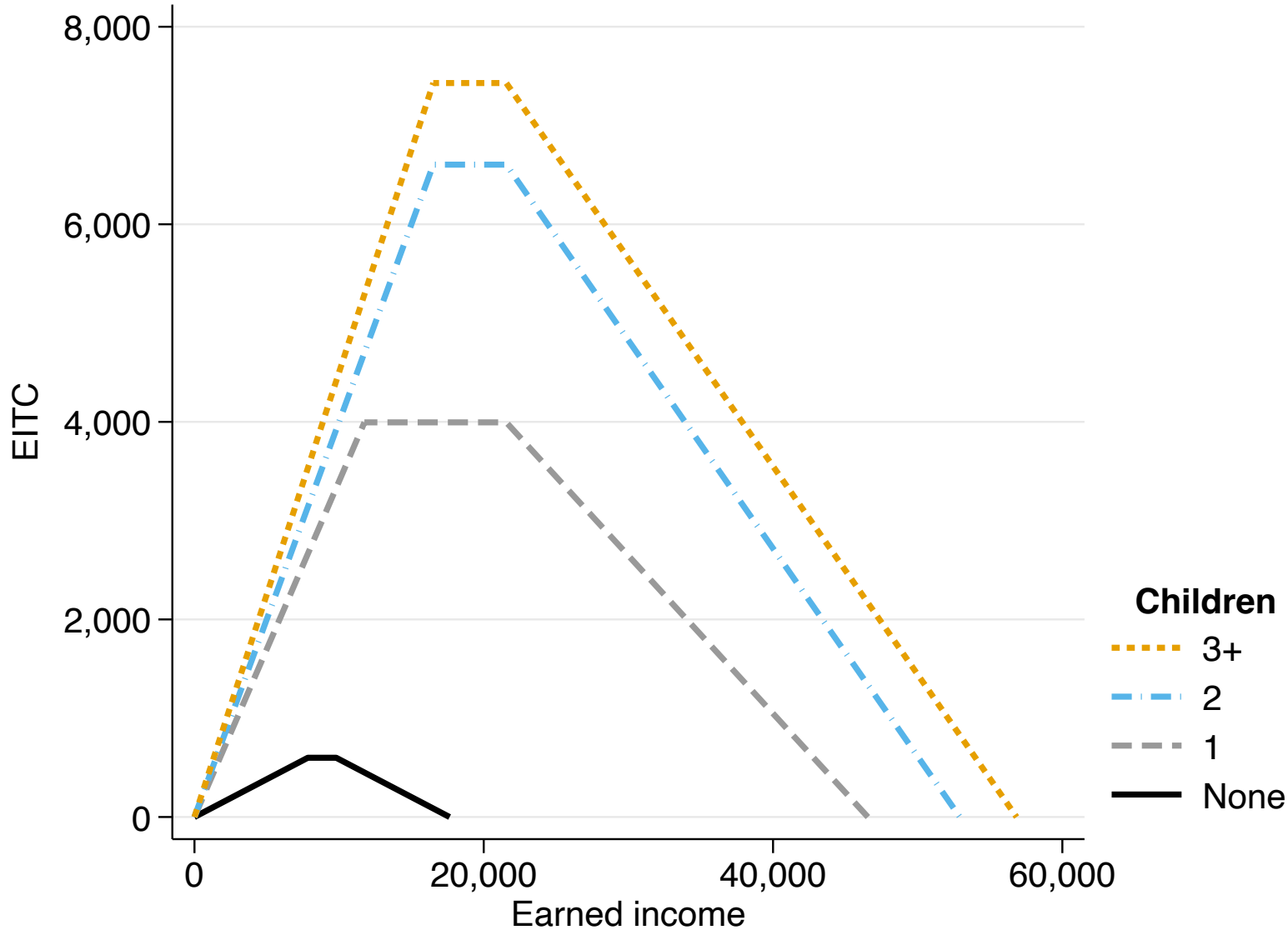
EITC Basics

- Refundable tax credit for low-earning households
- Benefit size depends on earnings and number of children
- Most benefits received as check during tax season after filing

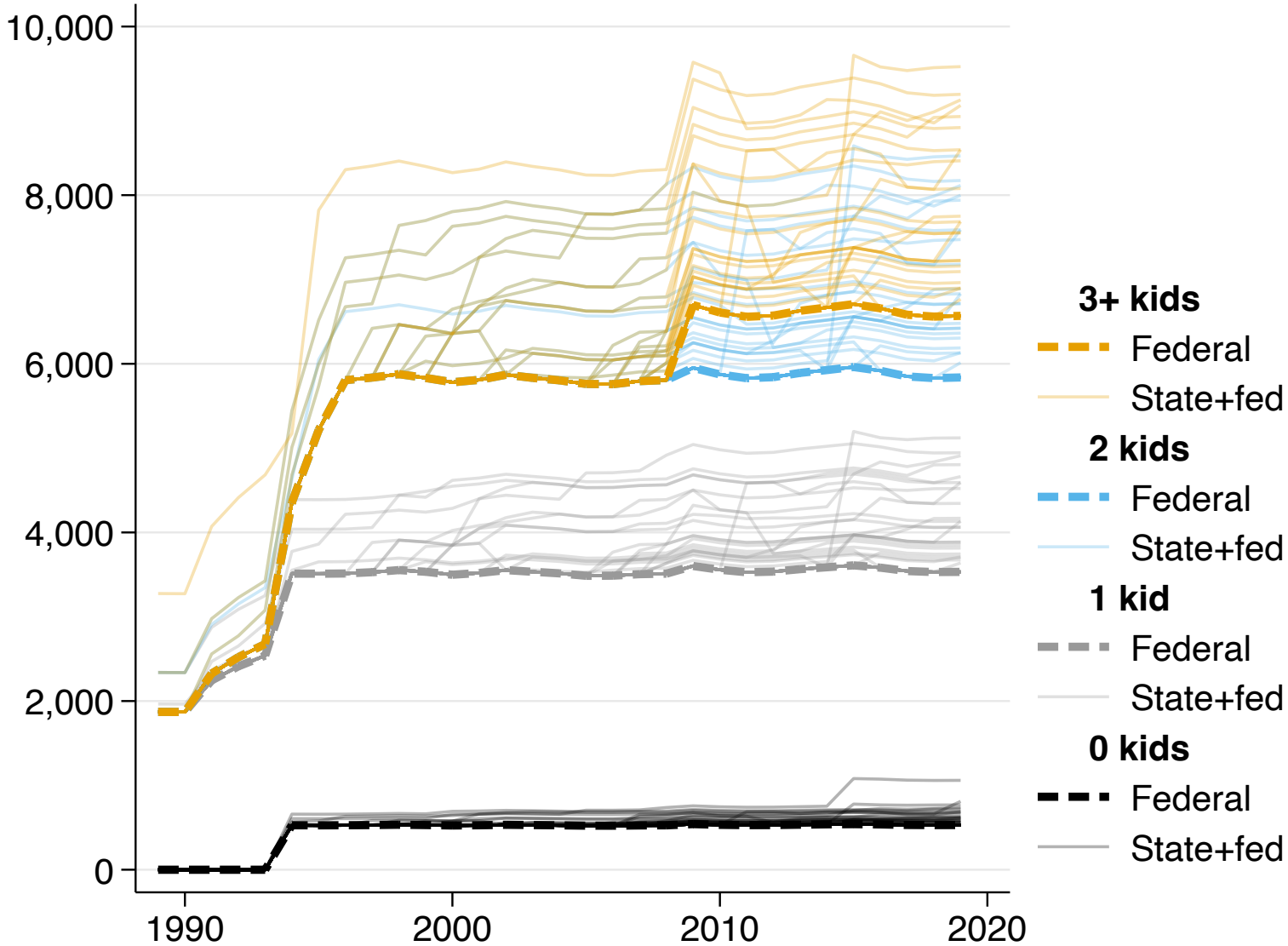
Example

Single mother of two (ages 3 and 7) who earns $19,200 in 2023 and files federal income taxes. She should get a $6,604 check during tax season 2024.

EITC schedule 2023, single filer



Maximum EITC benefits over time ($2020)



The EITC consensus

"There is an overwhelming consensus in the literature that the EITC raises single mothers' labor force participation" (Nichols and Rothstein, 2016)

IPUMS March CPS, 1989–2020, unmarried women 20–50 with high school degree or less

EITC and labor supply: Neoclassical theory

- Encourages employment purely through expectation of higher income
- Assumes detailed EITC program knowledge in target population; contradicted by survey data
- Implicitly suggests EITC brings workers “off the sidelines”

EITC and labor supply with search frictions

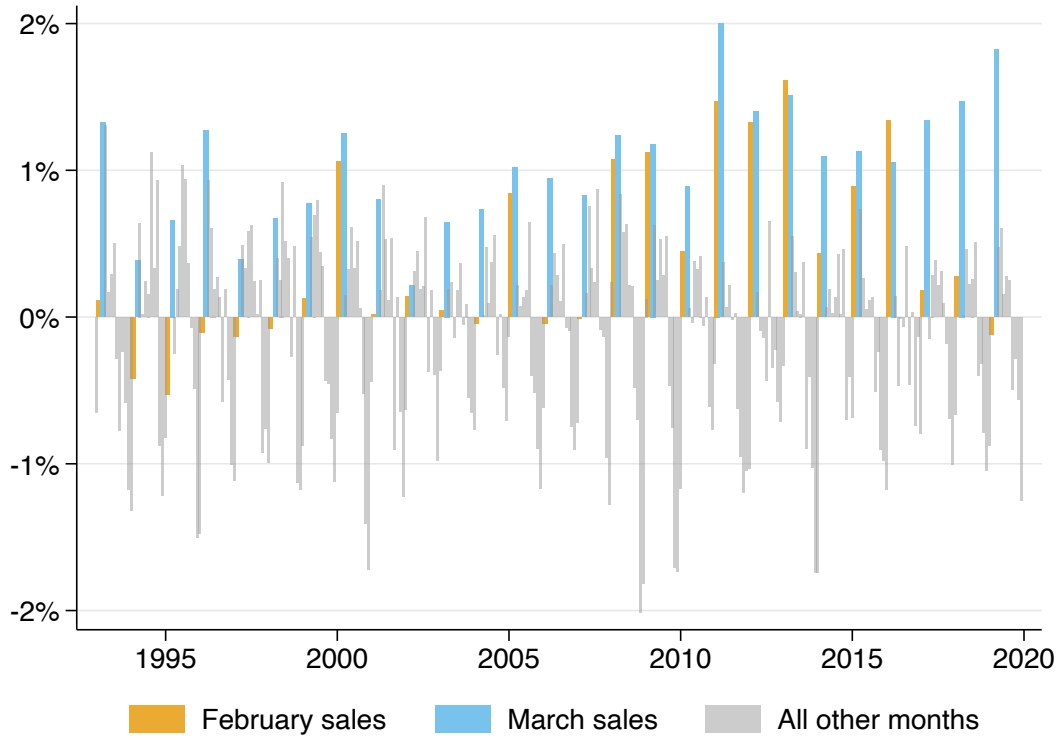
- Key monopsony fact: higher wages $\Rightarrow$ lower turnover
- EITC helps cushion against shocks workers face on the job (child care, transportation, health, etc)
- liquidity effect of EITC >> information channel of EITC

Quote from Chamber of Commerce–affiliated group

"…the credit helps workers to keep working and care for themselves at no cost to the business itself" (Institute for a Competitive Workforce, 2007)

Mechanism: EITC and cars

- Surveys: car purchase and maintenance a major use of EITC refunds
- 25% of recipients plan to spend on vehicles and 35% eventually do[1]
- Used car sales are highest in Feb.-Mar. due to tax refund checks



[1] Romich and Weisner (2000) Smeeding, Phillips and O'Connor (2000), Mammen and Lawrence (2006), Mendenhall et al. (2012)

Methodology

- Standard econometric approach: leverage variation over time and between households in EITC generosity
- To test mechanism, compare effects for areas with high/low access to public transportation
- Data and sample: CPS ASEC, 1989–2004. Unmarried women ages 20-50 with educational attainment of high school or less.

$$Y_{ijst} = \beta_0 + \beta_1 SimEITC_{g(i,j),t} \times Commute_j + \beta_2 X_{ist} + \gamma_{js} + \gamma_t + \varepsilon_{ijst} \quad (1)$$

Individual i, metro area j, state s, year t

Simulated instrument

- Motivation: Create variable capturing "actual" EITC received *without* using outcomes endogenous to EITC
- Use 1990 Census 5% sample to project future incomes and compute hypothetical EITCs
- *SimEITC* captures regional variation in EITC receipt as well as policy variation over time

▸ Figure: Regional variation in *SimEITC*

Effects of the EITC on labor supply outcomes by local commuting characteristics, annual

	(1)	(2)	(3)	(4)	(5)	(6)
	Annual employment			**Annual weeks worked**		
SimEITC	0.0793***	0.0793***	0.0717***	3.679***	3.677***	3.405***
	(0.00712)	(0.00731)	(0.00569)	(0.315)	(0.320)	(0.285)
SimEITC × high public	-0.0213**			-0.782*		
	(0.00663)			(0.314)		
SimEITC × low auto		-0.0234**			-0.828*	
		(0.00703)			(0.335)	
SimEITC × high auto			0.0130*			0.472
			(0.00518)			(0.285)
Observations	105,138	105,138	105,138	105,138	105,138	105,138
Standard errors in parentheses			* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$			

▸ Weekly outcomes

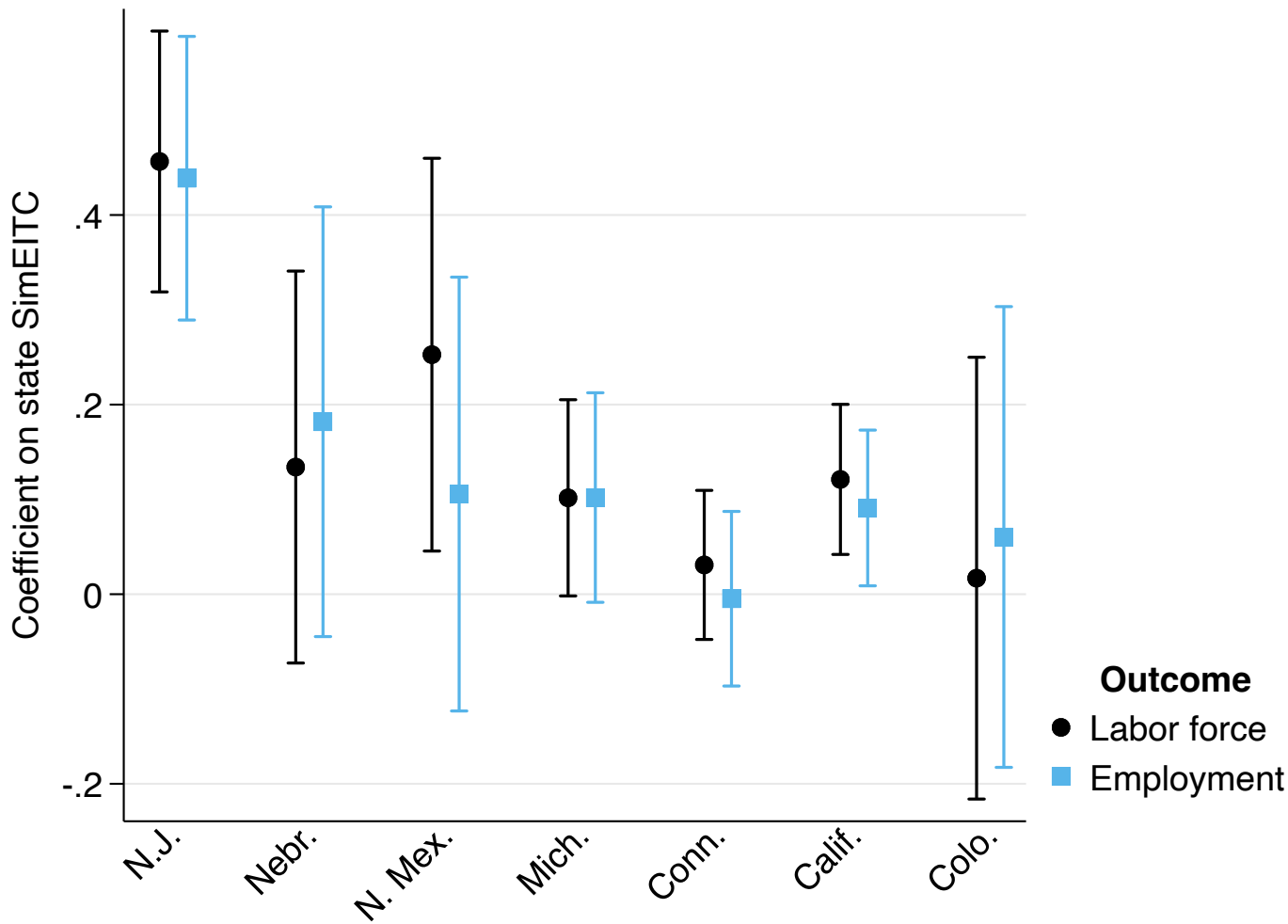
2009 expansion

	(1)	(2)	(3)	(4)	(5)	(6)
			Weekly employment			
Sample:	0+ kids	1+ kids	0+ kids	1+ kids	0+ kids	1+ kids
SimEITC	0.00545	0.00877	0.00216	0.0108	-0.00202	0.00576
	(0.00744)	(0.00868)	(0.00714)	(0.00861)	(0.00644)	(0.00879)
SimEITC × high public			-0.00517*	-0.00928		
			(0.00254)	(0.00589)		
SimEITC × high auto					0.00795**	0.0128*
					(0.00243)	(0.00573)
SimEITC + EITC × high auto					0.00593	0.0185
					(0.00685)	(0.00953)
Observations	1,011,748	457,026	1,011,748	457,026	1,011,748	457,026
Standard errors in parentheses			* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$			

▸ Labor force outcomes

State expansions

Strategy: Restrict analysis to individual states, using large state EITC implementations 2000+



Supplemental analysis: Reasons not looking for work

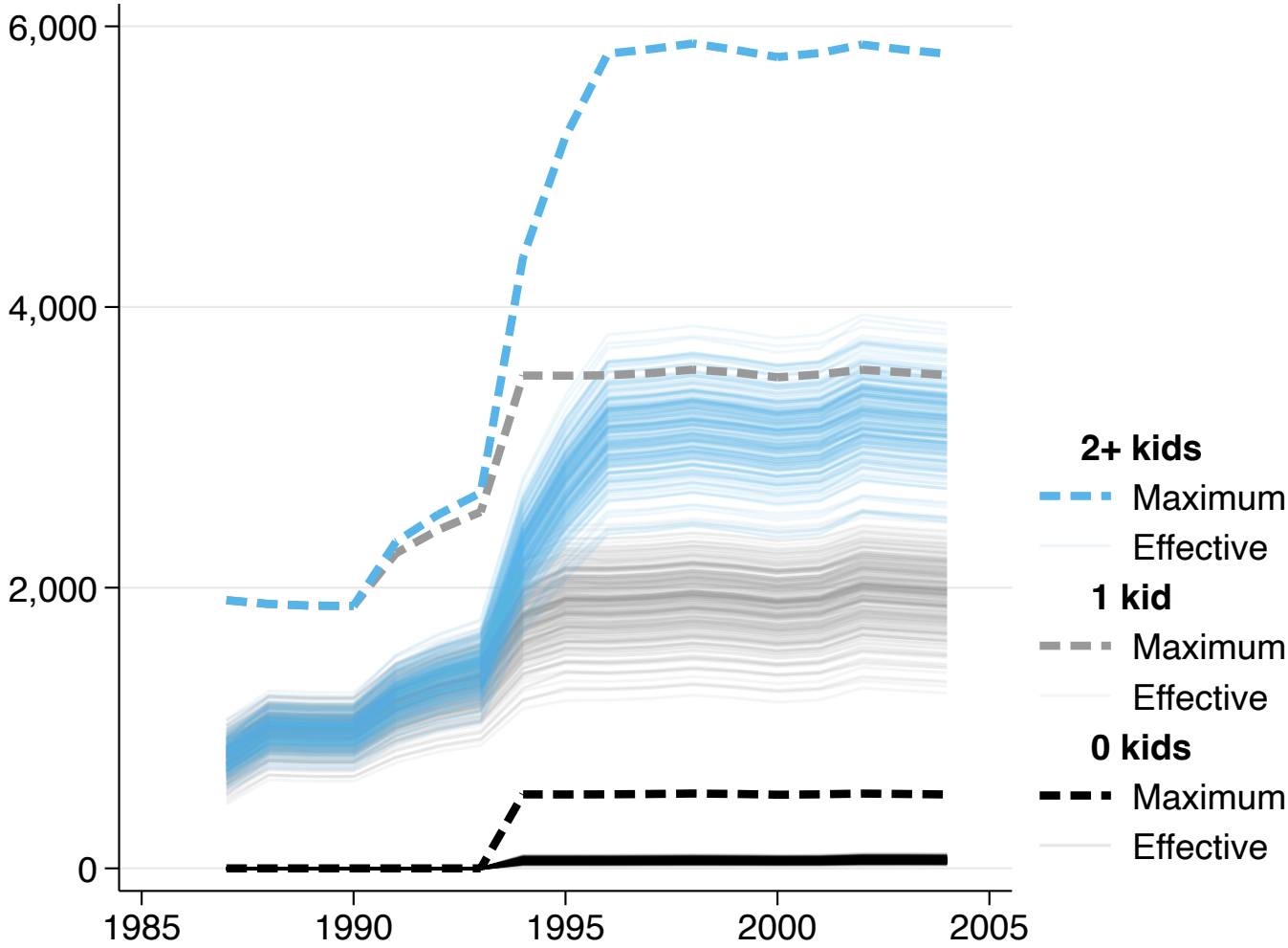
	(1)	(2)	(3)	(4)
	Transportation problems		Family responsibilities	
SimEITC	-0.00128*	-0.00157**	-0.0168***	-0.0169***
	(0.000504)	(0.000510)	(0.00182)	(0.00187)
SimEITC × public	-0.000861***		0.000944	
	(0.000170)		(0.000782)	
SimEITC × auto		0.000646**		-0.000111
		(0.000229)		(0.000622)
Observations	662,025	662,025	662,025	662,025
Standard errors in parentheses		* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$		

▸ Figures: Reasons not looking

Conclusions

- Understanding the EITC requires a conception of employment as precarious and costly rather than purely volitional
- Although the EITC achieves its stated aims, it may act through suboptimal mechanisms
- Important to consider regional heterogeneity when examining the impact of nationally uniform policies

Regional variation in *SimEITC*



▸ Return

Effects of the EITC on labor supply outcomes by local commuting characteristics, weekly

	(1)	(2)	(3)	(4)	(5)	(6)
	Weekly labor force			**Weekly employment**		
SimEITC	0.0730***	0.0732***	0.0673***	0.0659***	0.0661***	0.0607***
	(0.00666)	(0.00680)	(0.00633)	(0.00617)	(0.00626)	(0.00577)
SimEITC × high public	-0.0115			-0.0121*		
	(0.00670)			(0.00551)		
SimEITC × low auto		-0.0138			-0.0151**	
		(0.00734)			(0.00561)	
SimEITC × high auto			0.0112*			0.00976
			(0.00493)			(0.00534)
Observations	108,972	108,972	108,972	108,972	108,972	108,972
Standard errors in parentheses				* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$		

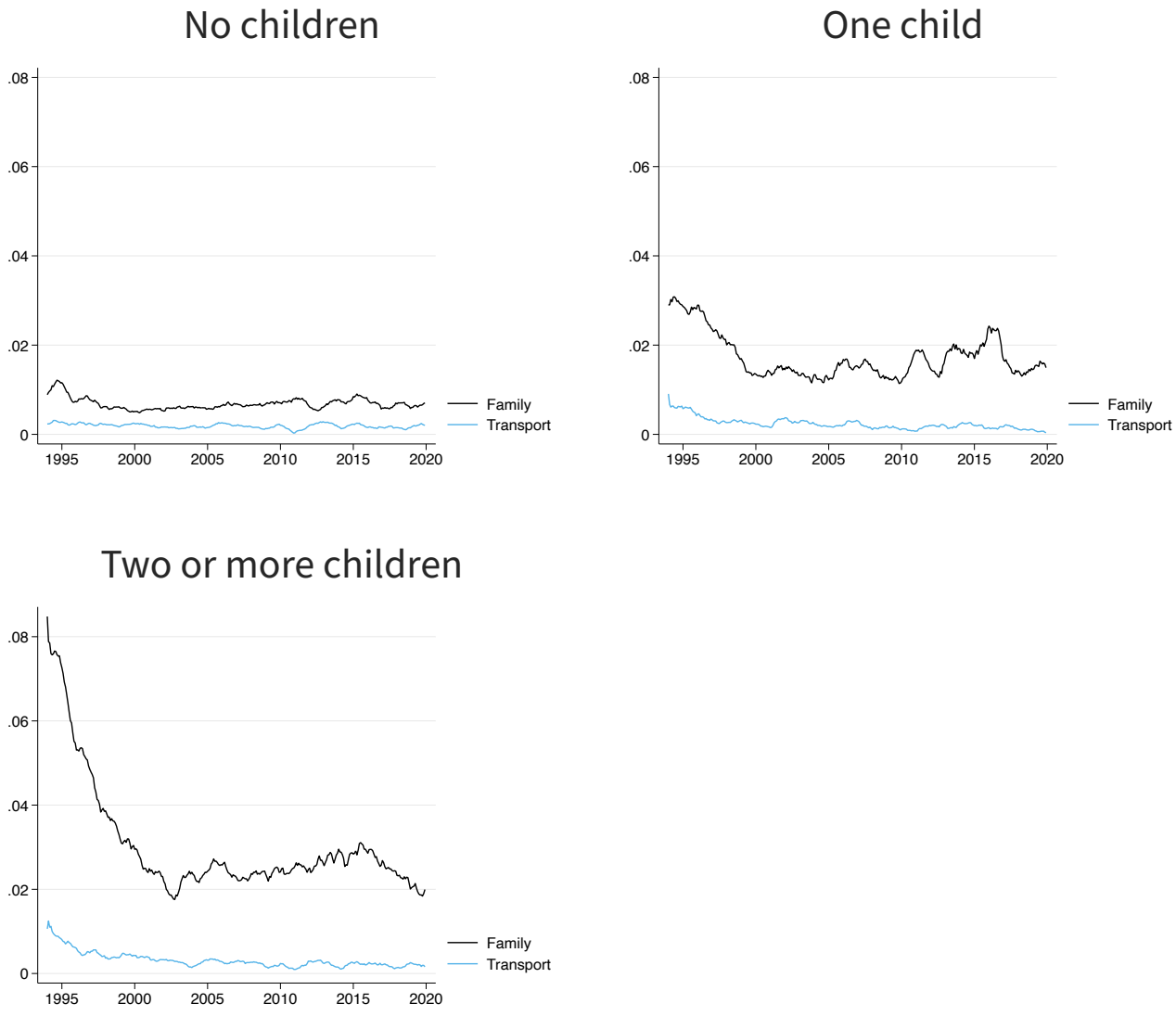
▸ Return

2009 expansion, labor force participation

	(1)	(2)	(3)	(4)	(5)	(6)
	Weekly labor force participation					
Sample:	0+ kids	1+ kids	0+ kids	1+ kids	0+ kids	1+ kids
SimEITC	0.00740	0.00636	0.00477	0.00869	0.000479	0.00322
	(0.00628)	(0.00878)	(0.00617)	(0.00879)	(0.00565)	(0.00887)
SimEITC × high public			-0.00413	-0.0104		
			(0.00244)	(0.00536)		
SimEITC × high auto					0.00736***	0.0133*
					(0.00219)	(0.00540)
Sum of coefficients						
SimEITC + EITC × high auto					0.00784	0.0165
					(0.00580)	(0.00953)
Observations	1,011,748	457,026	1,011,748	457,026	1,011,748	457,026
Standard errors in parentheses				* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$		

▸ Return

Reasons not looking for work



CPS 1994–2004, unmarried women 20–50 with at most a high school education

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