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EC230

Redistributing Income Through the Tax System: EITC and Labor Supply

Outline of Lecture:

1. Overview, trends and program details
2. Economics: Theory of labor supply and eitc
3. Empirical studies
    - Eissa and Liebman (1996)
    - Meyer and Rosenbaum (2001)
    - Rothstein (2007)
    - Eissa and Hoynes (2004)

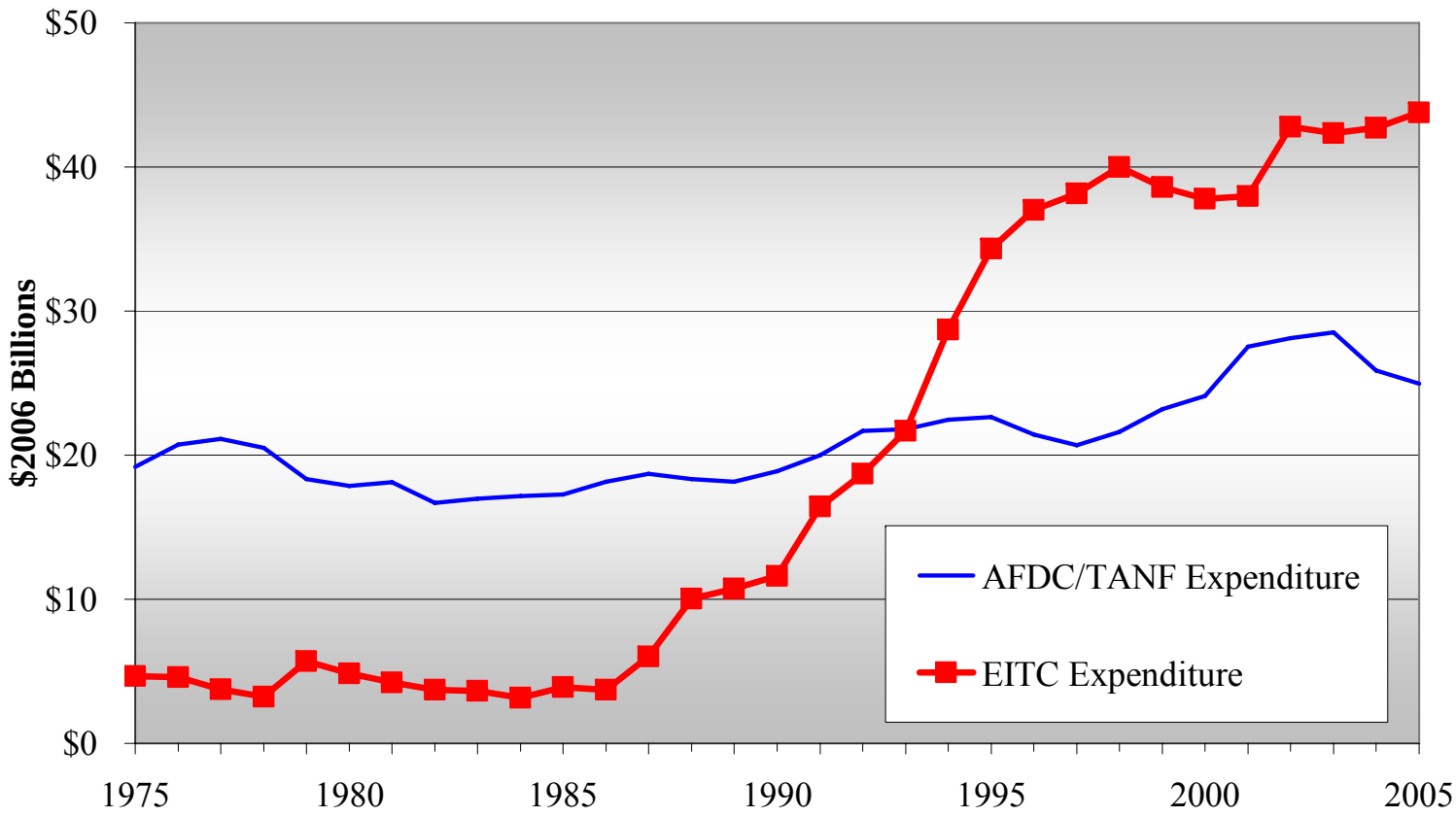
Introduction:

– EITC provides cash transfer to low income families with children.
– Transfer provided in the form of a tax credit
– Refundable tax credit
– EITC has been in place since 1975; originally intended to offset cost of payroll taxes for low income families.
– Through tax acts of 1986, 1990, 1993, it has expanded into the largest cash transfer program for poor families.
– Because of its size it is important to understand how the program impacts the poor.

1990s: Period of tremendous change in terms of government assistance and low income families:

- Reduction in support through "traditional welfare" (AFDC)
- Increase in support through "in work" benefits, tax credits (EITC)

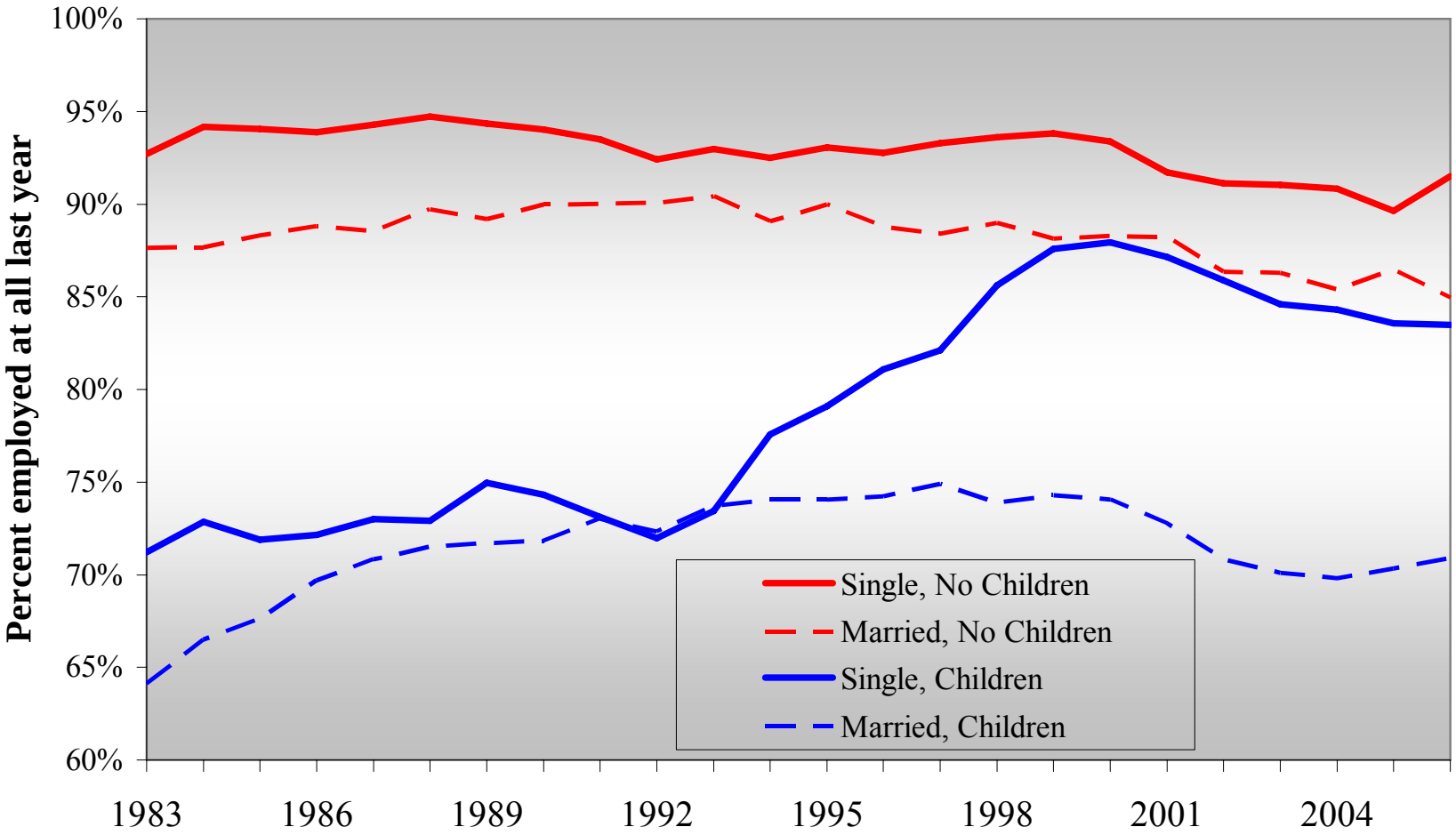
Figure II: Real Spending on the EITC (Billions of 2003 Dollars)



Costs of EITC compared to other programs for the poor.

	EITC	TANF	FS
Cost (billions)	$33.4	$24.5	$21.0
Families (millions)	19.6	2.1	7.4
Average Benefit	$142/mo	$351/mo	$174/mo

Annual Employment Rates for Women
By Marital Status and Presence of Children, 1983-2006



Source: Eissa and Hoynes, Tax Policy and the Economy, 2006.

EITC Eligibility:

- at least 1 child < 18 in the family
- available to both single parents and two-parent families
- positive earned income
- earned income and adjustable gross income (AGI) below maximum amount

EITC Benefits (Credit Amount)

- phase-in (or subsidy) region:

  Credit $= \tau_s * E$ $\quad$ 0<E<E0

- flat region:

  Credit = $C\max$ $\quad$ E0<E<E1

- phase-out region:

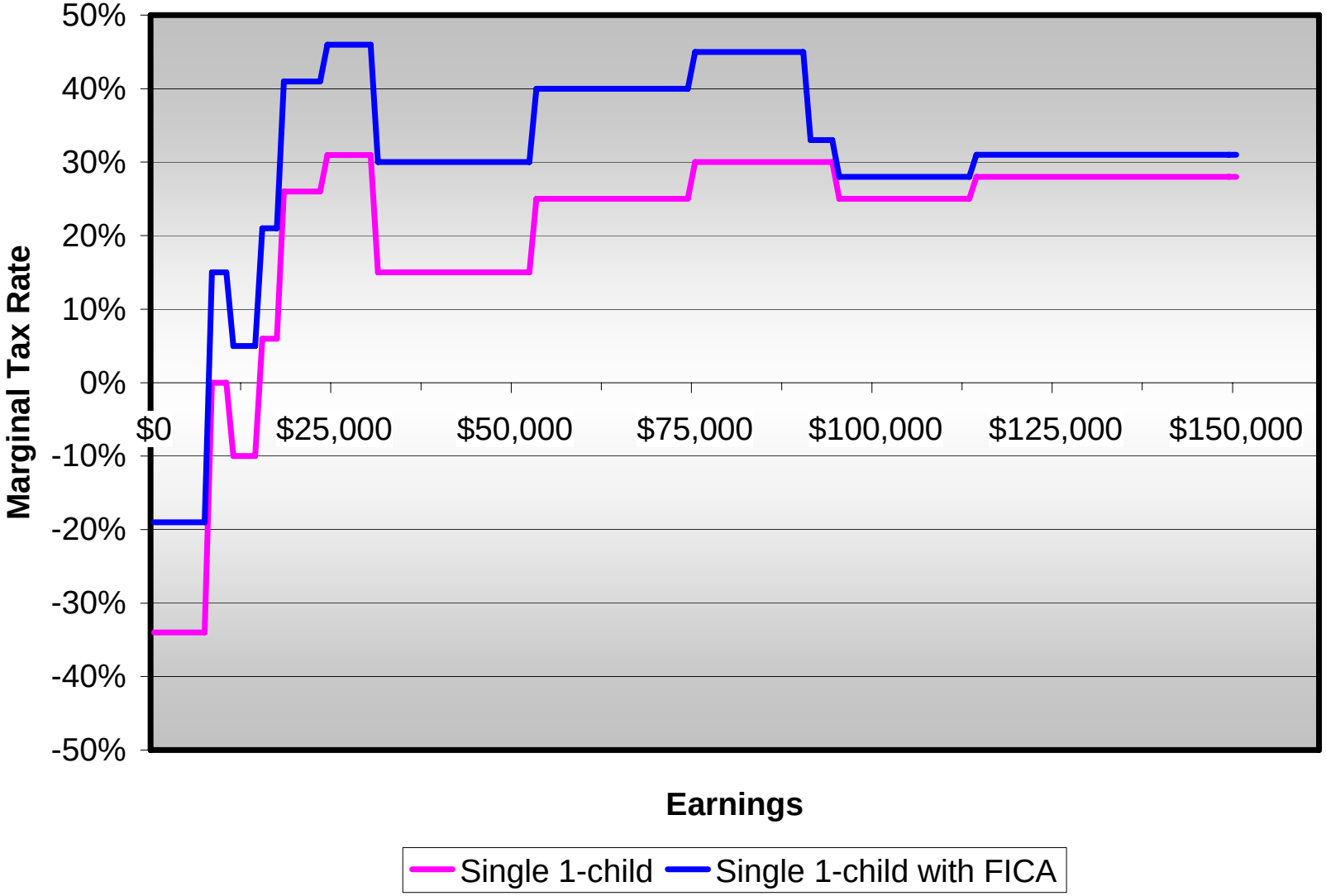
  C = Cmax $- \tau_P * (E - E1)$ $\quad$ E1<E<Emax

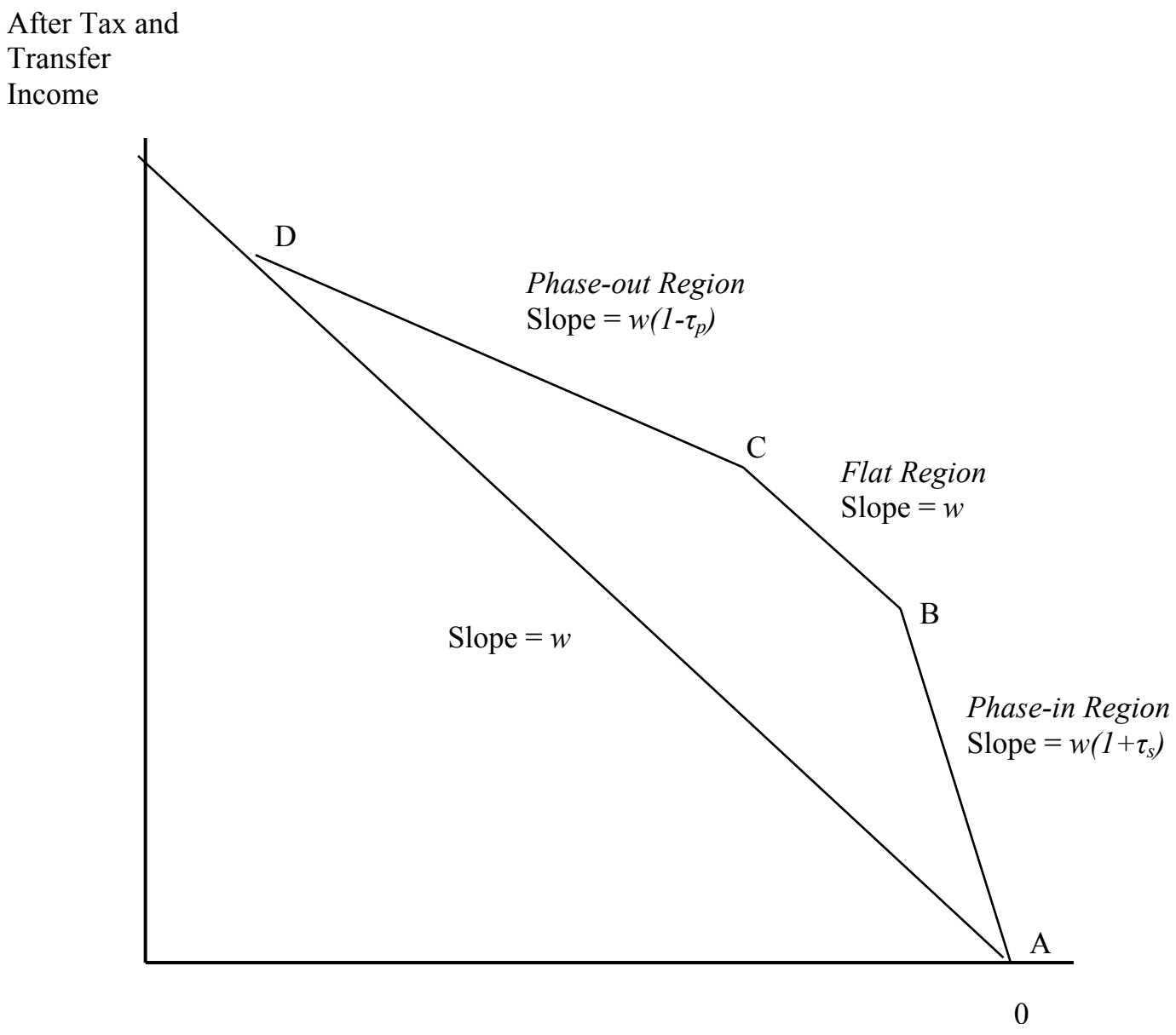
τ_S = subsidy or phase-in rate (varies by #kids)

τ_P = phase-out rate (varies by #kids)

Cmax = Maximum credit (varies by #kids)

Marginal tax rates landscape and EITC, 1 child, no amt, 2004



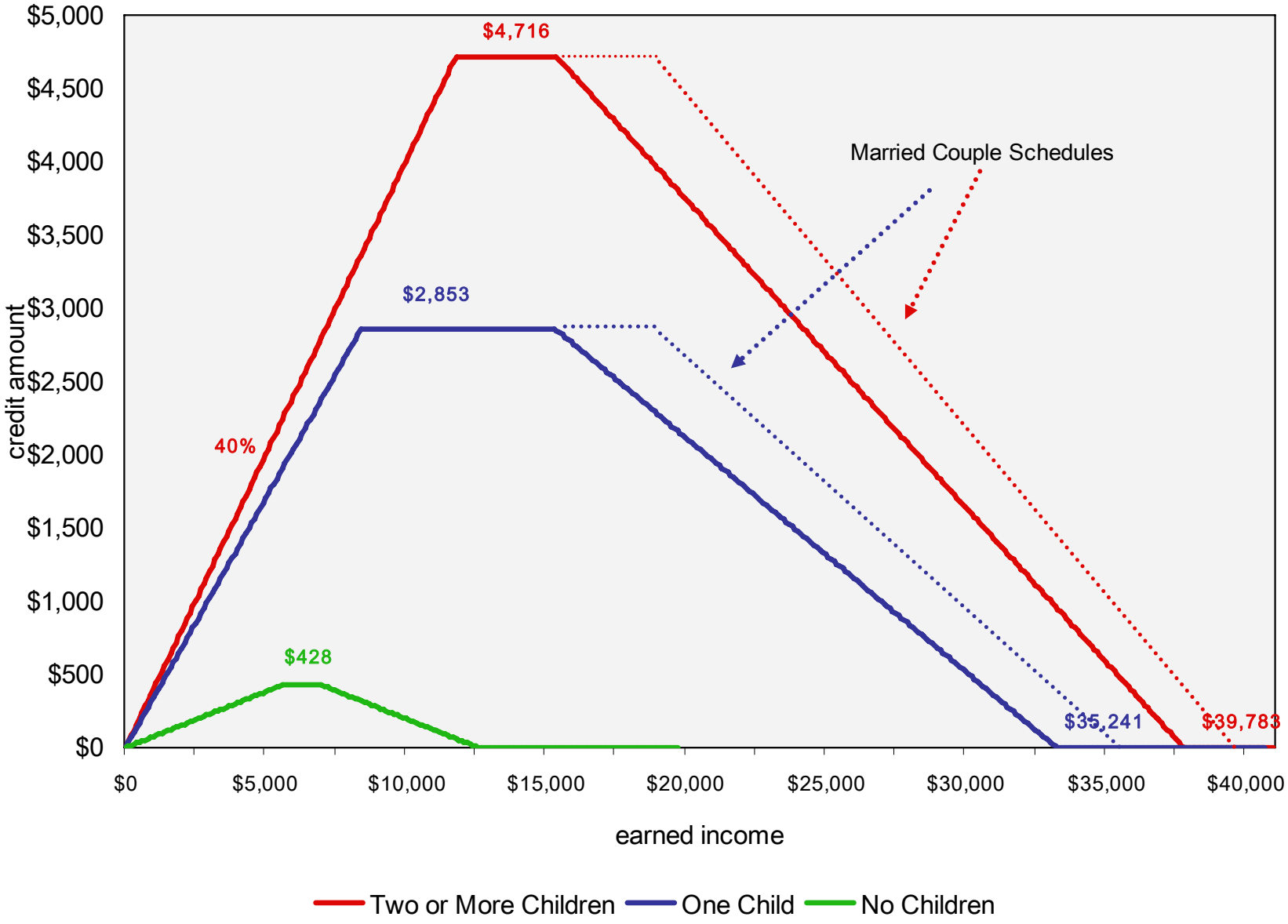

After Tax and
Transfer
Income
D
Phase-out Region
Slope = $w(1-\tau_p)$
C
Flat Region
Slope = w
B
Slope = w
Phase-in Region
Slope = $w(1+\tau_s)$
A
0

Expected Impact of EITC on Labor Supply

Labor Force Participation

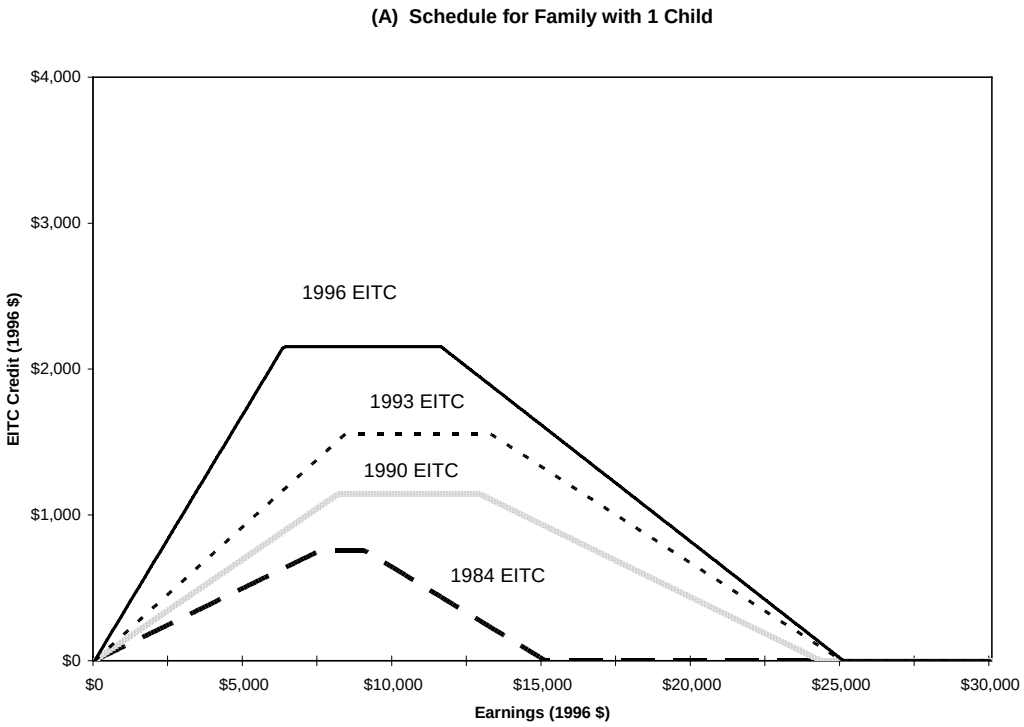
Hours Worked:

- Phase-In
- Flat
- Phase-out
- Above Phase-out

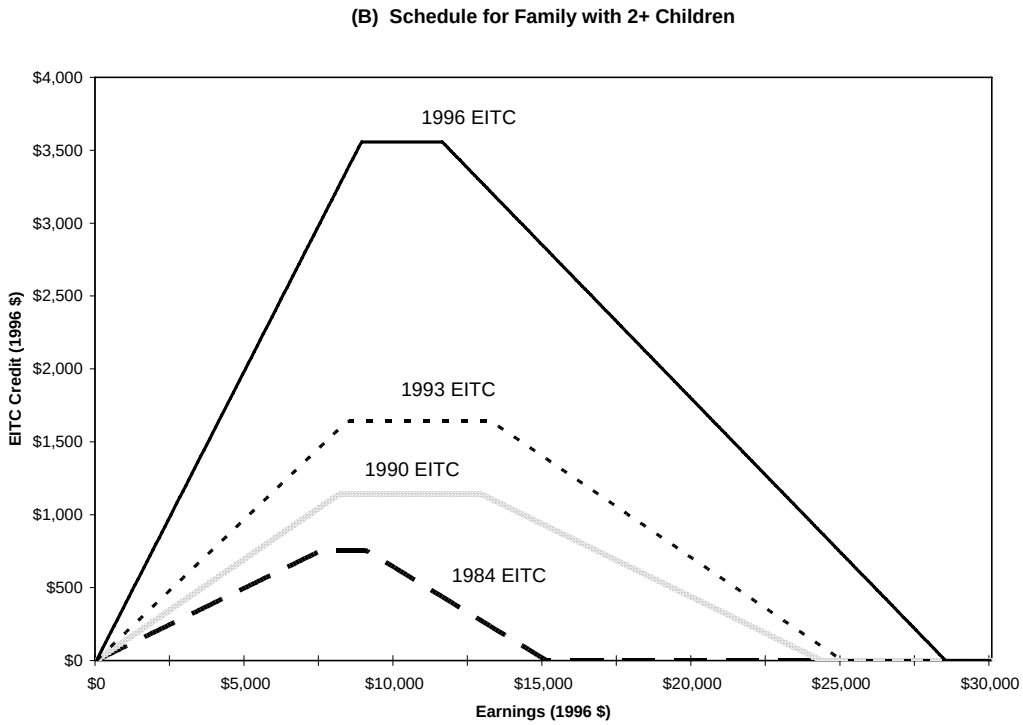

$5,000
$4,500
$4,000
$3,500
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
credit amount
$4,716
$2,853
$428
40%
Married Couple Schedules
$35,241
$39,783
$0
$5,000
$10,000
$15,000
$20,000
$25,000
$30,000
$35,000
$40,000
earned income
Two or More Children
One Child
No Children

Illustrating differences in expansions by family size (1996 dollars)

Families with 1 child:



Families with 2+children:



Issues to think about in tradeoffs between AFDC and EITC:

Efficiency

- labor supply distortions?
- Family structure distortions?
- Administrative costs?
- Outreach?

Equity issues?

- Who is getting aid?

Stigma/takeup?

The EITC and Labor Supply: Main Empirical Studies

Single parents: Eissa and Liebman 1996
Meyer and Rosenbaum 2001
Rothstein (2007)

Married Couples: Eissa and Hoynes 2004

Challenges to estimating the impact of EITC on labor supply:
– national program; no within state variation
– inside tax system; take-up issue
– are families without children a valid control group?

Variation to take advantage of:
– tax law changes created discrete changes in credit in certain years
– tax law changes differentially impacted one vs. two+ child families
– EITC expansions impacted differentially across earnings groups

Literature mostly focuses on impact of EITC on the labor supply of single women with children.

Eissa and Liebman QJE 1996

– Early difference-in-difference paper; first paper to examine behavioral impact of the EITC.

– Examine 1987 expansion of the EITC

phase-in rate 11% → 14%

maximum credit $550 → $851

Quasi-experimental approach

– Compare labor market outcomes (hours, employment) of those affected (single mothers) to those unaffected (single women without children). Difference is EITC

-- Data CPS 1985-1987 (before); 1989-1990 (after)

Estimation

$$y_{it} = \alpha + \beta X_{it} + \gamma_0 ELIG_i + \gamma_1 POST86_t + \gamma_2 ELIG_i * POST86_t + \varepsilon_{it}$$

y= outcome variable (labor force participation; hours worked)

Z= demographic variables

ELIG=1 if woman has child; 0 otherwise

POST86=1 if year>=1986; 0 otherwise

The full specification combines periods and compares changes in outcome of treated (with kids) to controls (w/o kids). X added to control for any observable differences between the groups.

$\gamma 1$ controls for shocks that affect both groups
$\gamma 0$ controls for the permanent differences between groups
$\gamma 2$ is the treatment effect. (Expected sign??)

Identifying Assumptions:
1) no contemporaneous shocks to treatment and control groups over the period
2) no underlying trends in two groups over the period.

Treatment groups:
Single women with children in <12 or <=12 years of education
Single women with children predicted to be elig for EITC

Control groups:
Single women w/o children with low education (or low pred earnings)
Single women with children and high education (or high pred earnings)

Results:

-- Unconditional DD (Table II)

-- Some attention to pre-treatment trends (see Figure II). Need to adjust scale to examine this better.

-- Main results (Table III)

Participation increased by 1.9 to 2.8 percentage points

Sensitivity checks:

-- (nice idea) Figure III: Estimate model with full set of year dummies and interactions of year dummies with treatment group dummy. Fig III plots the child*year dummies. Show turning point in 1986. Reverse trend.

– Could it be another factor affecting women with children? Labor market? AFDC? Little impact of adding this to model.

-- No effect beyond in >high school sample or with predicted income above phase out (Table IV)

Hours worked:

-- estimate conditional hours equation (dynamically selected sample? At what level of hours do new entrants have?)

-- Less robust impact on hours (or positive) (Table V)

TABLE III

PROBIT RESULTS: CHILDREN VERSUS NO CHILDREN ALL UNMARRIED WOMEN

	Sample: all unmarried women					
Variables	Without covariates (1)	Demographic characteristics (2)	Unemployment and AFDC (3)	State dummies (4)	Second child dummy (5)	Separate year interactions (6)
Coefficient estimates						
Other income (1000s)	—	−0.035 (.001)	−0.034 (.001)	−0.034 (.001)	−0.034 (.001)	−0.039 (.001)
Number of preschool children	—	−0.395 (.016)	−0.279 (.018)	−0.281 (.018)	−0.278 (.018)	−0.279 (.018)
Nonwhite	—	−0.422 (.016)	−0.521 (.030)	−0.520 (.031)	−0.518 (.031)	−0.518 (.031)
Age	—	−0.237 (.059)	−0.209 (.060)	−0.195 (.060)	−0.194 (.060)	−0.193 (.060)
Age squared	—	0.007 (.002)	0.006 (.002)	0.006 (.002)	0.006 (.002)	0.006 (.002)
Education	—	−0.020 (.014)	−0.029 (.014)	−0.029 (.014)	−0.029 (.014)	−0.029 (.014)
Education squared	—	0.010 (.001)	0.010 (.001)	0.010 (.001)	0.010 (.001)	0.010 (.001)
Second child	—	—	—	—	−0.118 (.040)	−0.117 (.040)
State Unemployment rate	—	—	−0.096 (.007)	−0.063 (.012)	−0.064 (.012)	−0.064 (.012)
State Unemployment rate kids × kids	—	—	0.028 (.010)	0.029 (.010)	0.029 (.010)	0.030 (.010)
Maximum monthly AFDC benefit	—	—	−0.001 (.000)	−0.001 (.000)	−0.001 (.001)	−0.001 (.000)
Kids (γ_0)	−1.053 (.020)	−0.250 (.029)	−1.403 (.106)	−1.438 (.108)	−1.458 (.110)	−1.462 (.110)
Post86 (γ_1)	−0.001 (.028)	0.019 (.031)	−0.152 (.067)	−0.104 (.069)	−0.094 (.069)	
Kids × Post86 (γ_2)	*0.069 (.027)*	*0.074 (.030)*	*0.103 (.037)*	*0.113 (.037)*	*0.087 (.043)*	—
Kids × 1988						*0.033 (.057)*
Kids × 1989						*0.116 (.058)*
Kids × 1990						*0.112 (.057)*
Second child × post86					0.051 (.043)	—
Log likelihood	−20759	−17105	−16793	−16633	−16629	−16626
Predicted participation response for treatment group		*.019 (.008)*	*.026 (.010)*	*.028 (.009)*	*.022 (.009)*	*.008, .029, .028 (.014), (.015), (.015)*

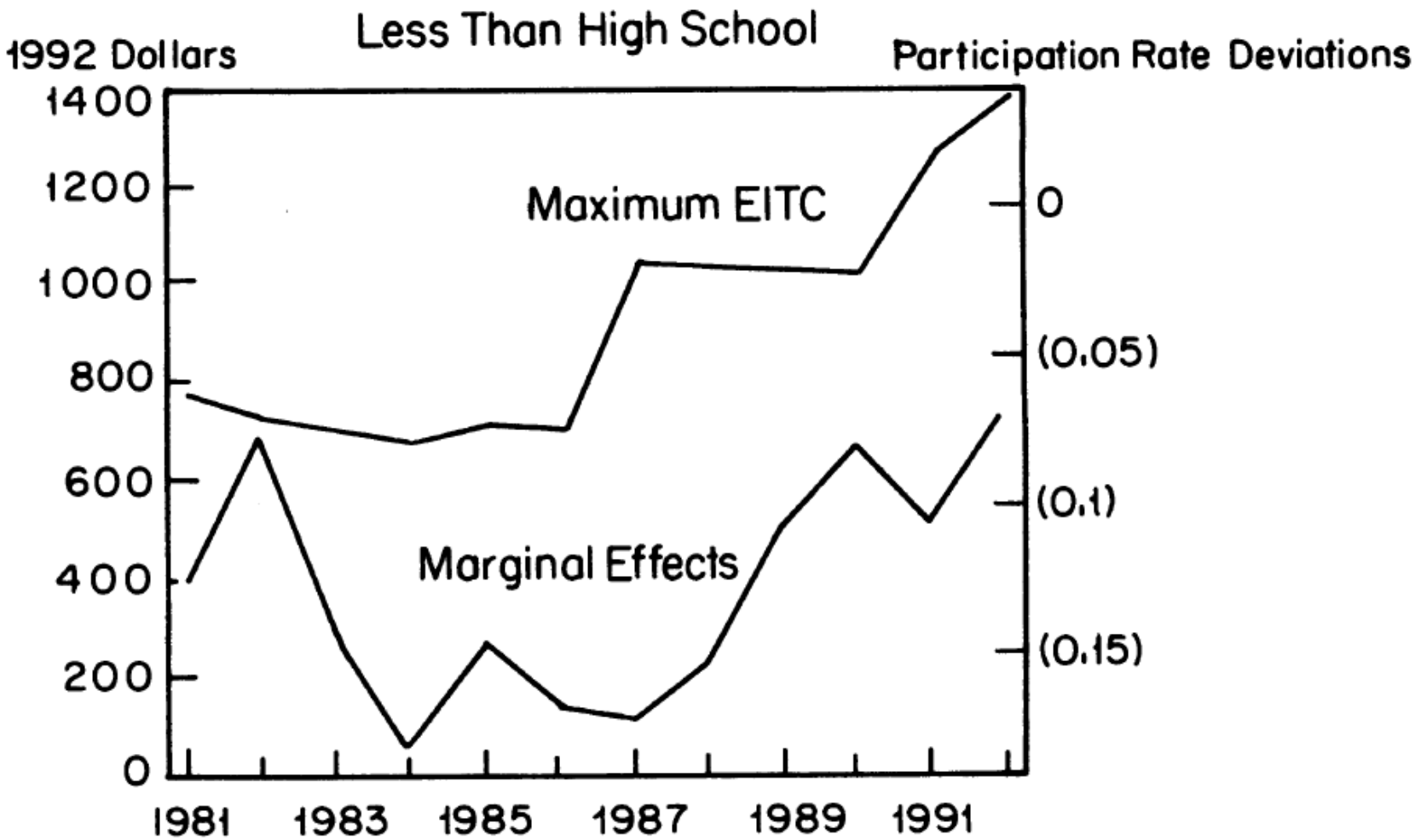


FIGURE III
Maximum EITC and Marginal Effects from KID × YEAR Dummies

Meyer and Rosenbaum
"Welfare, the EITC and the Employment of Single Mothers", QJE 2001

Contributions of the paper:
– Typically, studies consider the impact of one program on labor supply. This study models the impacts of a comprehensive array of programs.
-- They introduce a way to combine the financial incentives of many different programs that change the returns to work. They do this without assuming that wages are exogenous.
– The study focuses on a very important period that has seen remarkable gains in employment of single women with children AND is a period of massive changes in public assistance programs.
– Presented as a psuedo-structural model with focus on using exogenous variation (policy changes) to identify key parameters.

The facts:

– annual labor force participation rates of single women with children rose over 9 percentage points between 1984-1996. They rose even more for low educated single women with children.

– These gains were not present for other "similar" groups. (See Meyer and Rosenbaum National Tax Journal 2000, where the authors conduct a difference-in-difference analysis and consider a whole host of control groups.)

Economic model of work decision:

$$\Pr[work] = \Pr[U(Y_w, L_w, P_w, X) > U(Y_{nw}, L_{nw}, P_{nw}, X)]$$

U = utility function
Y = income (in work w, and no-work nw states)
L = leisure (in both states)
P = participation in welfare (capturing cost of participation)
X = demographics

– The non-working choice has no uncertainty; income and leisure are known; take-up of all benefits is assumed to be 100%.
– The working state has uncertainty about wage rate and hours worked. Wages and hours are drawn from the empirical distribution of workers (no selection). No information about differences in wage opportunities (by education, etc) is specified. The 100% take-up rate is maintained for workers (all eligible workers participate).

Keep in mind: this model and all of the estimation is applied to a sample of women with and without children. Think about similarities to a DD model.

– Functional form: Assume utility linear with additive normal error term

$$U(Y,L,P,X) = \alpha Y + \beta L + \rho P + \gamma X + \varepsilon$$

– Taking the difference in utility, the probability of work is:

$$\Pr[work] = \Pr[\alpha E[Y_w] + \beta E[L_w] - \rho E[P_w] + \gamma_w X + \varepsilon_w >$$
$$\alpha Y_{nw} + \beta L_{nw} - \rho P_{nw} + \gamma_{nw} X + \varepsilon_{nw}]$$
$$= \Pr[\alpha(E[Y_w] - Y_{nw}) + \beta(E[L_w] - L_{nw}) - \rho(E[P_w] - P_{nw}) + \gamma X > \varepsilon^{\sim}]$$
$$= \Phi[\alpha(E[Y_w] - Y_{nw}) + \beta(E[L_w] - L_{nw}) - \rho(E[P_w] - P_{nw}) + \gamma X]$$

– Issues: Structural? Utility function implies leisure and income are perfect substitutes.

Uncertainty in work choice:

– Uncertainty in wages and hours worked. They assume all persons face the same bivariate wage/hours distribution. Then they take expectations of U(work) with respect to some empirical distribution of wages/hours.

– Mechanically, they take a sample of women with annual earnings of >=$500 and 10 hourly wage groups x 5 annual hours groups. Create expected earnings using

$$E[E_w] = \sum_{i=1}^{10} \sum_{j=1}^{5} \overline{w}_i \overline{h}_j P_{ij}$$

Where w and h are midpoints in each range. P is the percent of persons in that wage/hour cell.(empirical distribution)

– Note that this expectation is identical for all women in all years. Does not rely on ANY demographics (any cross-sectional variation) for identification of program effects.

– Issues: selection bias? Can new workers get the same wage/hours distribution as workers?

Ultimate estimating model

– Allow for differing coefficients on (i) different forms of income (stigma?), (ii) different coefficients on income if working or not working.

– Given linear U, taking expectations, and same distribution of wages/hours, 100% takeup –> earnings, leisure, and participation if no work is absorbed into the constant term.

-- Assume women with children all participate in welfare if eligible; women w/o children never do.

– This generates the following model they estimate:

$$\Pr(work) = \Phi\{\alpha_1 E[taxes_w] + \alpha_2 E[AFDCFS_w] + \alpha_3 E[Medicaid_w] + \rho E[P_w] - \alpha_4 AFDCFS_{nw} - \alpha_5 Medicaid_{nw} + \gamma X\}$$

– Expected signs of coefficients

Positive: α2, α3, α4, α5

Negative: α1, ρ

-- Note that each of the tax and benefit variables are averages across the wage/hours possibilities. They also vary by state, number of children, etc.

Tax/Transfer programs modeled in budget constraint:
(–) Federal tax liability (EITC, other income): Tax acts in 90, 93
(–) State tax liability (EITC, other income)
(–) AFDC & Food Stamp benefits
(+) Welfare reform variables (state waivers)
(+) Medicaid expansions
(–) Training[Education] in AFDC program ($/recipient)
(+) Training[Job Search] om AFDC Program ($/recipient)
(+) Child care assistance on AFDC

Data:
Two CPS data sets 1984-1996
– March (Annual Demographic Survey)
provides data on the previous calendar year (any work, weeks, hours/week, earnings, income)
– Merged Outgoing Rotation Groups (MORG)
provides data on the previous week (any work, hours, earnings)

Variation/Identification
– Variation in key RHS variables come through policy variation: **State, number and ages of children, year**

Results:

(A) Unconditional Difference-in-Difference (Table II)
– Compare single women with and without children
– Can not identify the source of the changes in employment
– Employment of those with children increased relative to those without children.
– What about stratifying by education level?

(B) Conditional Difference-in-Difference (Table III)
– Add controls for race, age, education, number of children, unearned income, urate*child, state,
– Main effects: year, year*anychild
– Increases for single women with children relative to those without children, especially since 1991.

(C) “Structural” model (Table IV)
– Same controls as conditional DD, add policy variables
– if all income is the same (in utility), then coef should be equal. (Given that takeup is <100% especially for workers, this amounts to scaling up the coef on welfare benefits if work and stigma if work. This is consistent with the results.)
– Taxes and welfare have large (marginal) effects; Medicaid little
– Smaller effects when limited to women with children
– How different is this from a difference-in-difference?
-- larger effects for lower education groups

Contributions of Policies (Table VI)
– Decompose observed 1984-1996 and 1992-1996
– 84-96 increase: 62% EITC & Taxes, 25% AFDCBen, 15% Waivers,
– 92-96 increase: 27% EITC & Taxes, 17% AFDCBen, 15% waivers

Table IV

	ORG, worked last week = 1			
	Years of education			
	All	< 12	12	> 12
Explanatory variable	(1)	(2)	(3)	(4)
Income taxes if work	−0.0273	−0.0417	−0.0334	−0.0182
in $1000s/year	(0.0034)	(0.0080)	(0.0057)	(0.0051)
Welfare maximum benefit	−0.0340	−0.0425	−0.0357	−0.0218
in $1000s/year	(0.0024)	(0.0056)	(0.0040)	(0.0036)
Welfare benefit if work	0.0772	0.0654	0.0916	0.0539
in $1000s/year	(0.0073)	(0.0171)	(0.0121)	(0.0109)
Probability of AFDC receipt	−0.1985	−0.2926	−0.2547	−0.1087
if work	(0.0239)	(0.0522)	(0.0398)	(0.0363)
Medicaid if work	−0.0096	−0.0040	0.0013	−0.0167
in $1000s/year	(0.0033)	(0.0066)	(0.0056)	(0.0055)
Waiver—any time limit	0.0136	0.0408	0.0192	−0.0065
(Indicator variable)	(0.0071)	(0.0160)	(0.0119)	(0.0102)
Waiver—any terminations	0.0222	0.0355	0.0354	0.0124
(Indicator variable)	(0.0110)	(0.0260)	(0.0181)	(0.0158)
Training—education	−0.0805	−0.0824	−0.0715	−0.0563
in $1000s/year	(0.0190)	(0.0430)	(0.0311)	(0.0283)
Training—job search/other	0.0446	0.0472	0.0607	0.0260
in $1000s/year	(0.0117)	(0.0272)	(0.0190)	(0.0175)
Child care	0.0227	0.0272	0.0190	0.0226
in $1000s/year	(0.0065)	(0.0148)	(0.0104)	(0.0104)
State unemployment rate	−0.0100	−0.0098	−0.0101	−0.0105
in percentage points	(0.0007)	(0.0020)	(0.0013)	(0.0010)
Any children * state unemp rate	−0.0001	0.0009	−0.0010	0.0008
in percentage points	(0.0009)	(0.0021)	(0.0014)	(0.0013)
Number of observations	373,662	51,146	134,432	188,084

TABLE VI

CONTRIBUTION OF POLICY CHANGES TO THE CHANGES IN THE RELATIVE EMPLOYMENT OF SINGLE MOTHERS VERSUS SINGLE WOMEN WITHOUT CHILDREN, 1984–1996 AND 1992–1996

	1984–1996				1992–1996			
	ORG		March CPS		ORG		March CPS	
Explanatory variable	Δ in emp	% of total	Δ in emp	% of total	Δ in emp	% of total	Δ in emp	% of total
Income taxes if work	0.0438	62.2%	0.0720	61.4%	0.0186	26.8%	0.0305	35.1%
Welfare maximum benefit	0.0179	25.4%	0.0156	13.3%	0.0114	16.5%	0.0099	11.4%
Welfare benefit if work	0.0005	0.7%	0.0003	0.3%	−0.0045	−6.5%	−0.0033	−3.8%
Probability of AFDC receipt if work	−0.0002	−0.3%	−0.0002	−0.1%	0.0020	2.9%	0.0017	2.0%
Medicaid if work	−0.0070	−9.9%	−0.0032	−2.8%	−0.0023	−3.3%	−0.0011	−1.2%
Total welfare benefits & Medicaid	0.0112	15.9%	0.0125	10.6%	0.0066	9.6%	0.0073	8.4%
Waiver—any time limit	0.0054	7.6%	0.0075	6.4%	0.0052	7.6%	0.0073	8.5%
Waiver—any terminations	0.0046	6.5%	0.0099	8.4%	0.0046	6.6%	0.0099	11.4%
Total welfare waivers	0.0099	14.1%	0.0174	14.8%	0.0098	14.2%	0.0172	19.8%
Training—education	−0.0101	−14.4%	−0.0096	−8.2%	−0.0021	−3.0%	−0.0020	−2.3%
Training—job search/other	0.0065	9.2%	0.0077	6.5%	0.0047	6.8%	0.0056	6.4%
Child care	0.0068	9.7%	0.0069	5.9%	0.0011	1.8%	0.0013	1.5%
Total training & child care	0.0032	4.6%	0.0050	4.3%	0.0039	5.7%	0.0039	5.6%
Demographics	−0.0073	−10.4%	−0.0068	−5.8%	0.0107	15.5%	0.0112	12.9%
Other	0.0096	13.7%	0.0172	14.7%	0.0196	28.3%	0.0158	18.2%
Total	0.0705	100.0%	0.1174	100.0%	0.0691	100.0%	0.0869	100.0%

Things to think about:
– linear utility
– 100% takeup of welfare
– single wage/hour distribution
– Similar to DD (?)
-- why not include controls for kids * year? There is still identification in the trends across these two family types. I suspect that this is a large part of the variation in the tax and transfer variables. When they limit the analysis to mothers only (Table V) the results are smaller and in some cases lose significance.

Teaching the Tax Code: Earnings Responses to an Experiment with EITC Claimants
by Raj Chetty and Emmanuel Saez

-- starting point of the paper is the observation that there seems to be more sensitivity on extensive margin than on the intensive margin.

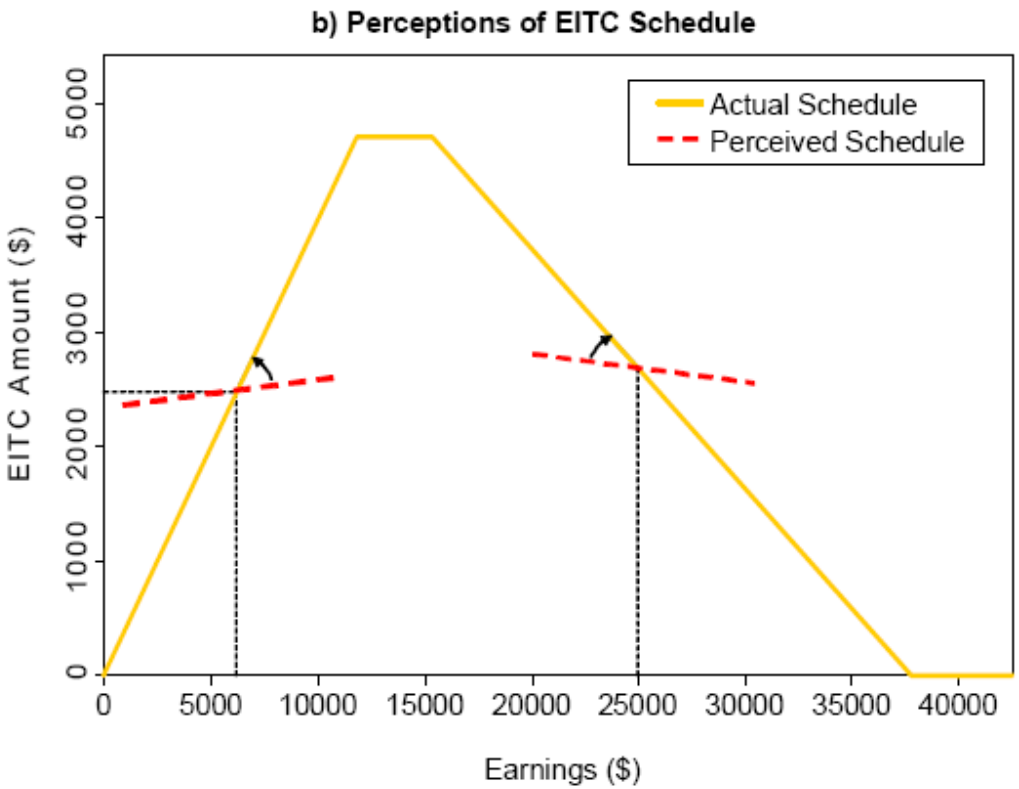
-- this is certainly well illustrated in the eitc literature.

-- (However the literature really DOES NOT address the issue that when a policy affects the extensive margin, then a conditional analysis of the intensive margin could suffer from dynamic sample selection.)

-- their hypothesis is that this is due to a lack of information (lack of salience in tax)

They set up an experiment at H&R Block
Tax preparers randomly treat clients by telling them about the EITC and where they are in the schedule.
They then follow them to the next year.

Raj and Emmanuel's take on prior beliefs:



For these prior beliefs, the predictions are clear:

1. Phase-in: hours/earnings should increase
2. Flat: no change
3. Phase-out: hours/earnings should decrease

And that is what they found (for compliers)

FIGURE IV
Year 2 Earnings Distributions: Complying Tax Professionals

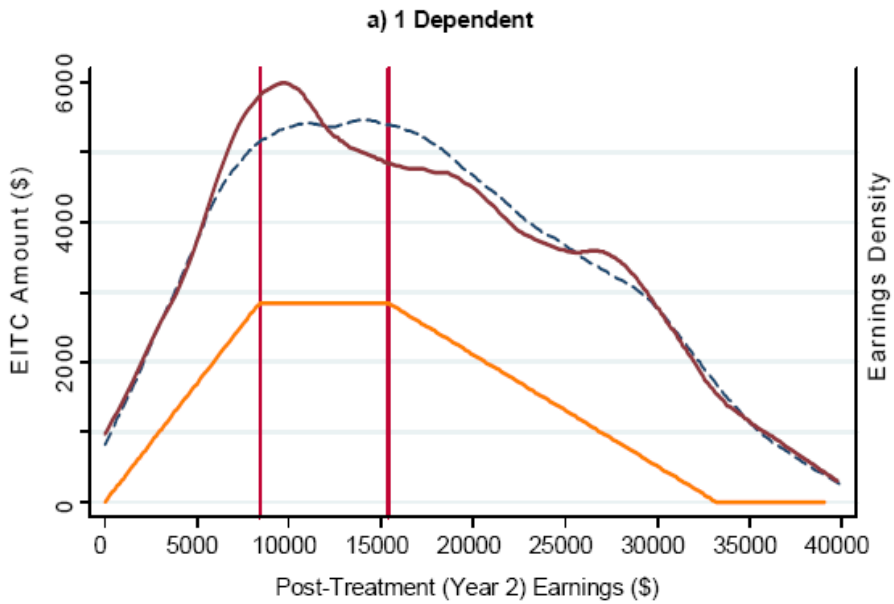


TABLE III
Treatment Effects on EITC Amounts and Earnings Distribution

Dependent Variable:	Δ EITC Amt. ($)	Δ EITC Amt. ($) w/ Controls	Middle Inc. (%)	Middle Inc. (%) w/ Controls	Low Inc. (%) w/ Controls	High Inc. (%) w/ Controls	Δ Earnings ($) w/ Controls
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Full Sample	24.02	17.17	0.100	0.37	-0.61	0.24	29.35
[N=30,303]	(14.77)	(14.06)	(0.54)	(0.48)	(0.34)	(0.45)	(83.46)
	[1.63]	[1.22]	[0.19]	[0.77]	[-1.81]	[0.54]	[0.35]
(2) Complying Tax Professionals	67.26	58.05	2.90	2.57	-1.46	-1.11	-172.94
[N=15,395]	(21.09)	(20.46)	(1.04)	(0.87)	(0.49)	(0.75)	(123.66)
	[3.19]	[2.84]	[2.78]	[2.96]	[-3.02]	[-1.47]	[-1.40]
(3) Non-Complying Tax Professionals	-27.96	-32.28	-3.11	-2.15	0.45	1.71	247.26
[N=14,534]	(21.83)	(20.40)	(1.07)	(0.90)	(0.52)	(0.77)	(119.87)
	[-1.28]	[-1.58]	[-2.91]	[-2.38]	[0.85]	[2.23]	[2.06]

while I think the paper is really cool, I am not sure what it is testing?

Maybe: this treatment can change behavior.
But that is not very interesting.
But we ultimately want to put some interpretation on the results?
They want us to think that this reflects moving toward more “optimal” behavior by changing beliefs about taxes. But I am not so sure. This prediction hinges on knowing that the prior beliefs are. This is unknown.

Other cool things happening with the EITC:

-- Powerful first stage: increase in employment and expansion of EITC means income increases

-- Can we use this to examine impact of income on children's outcomes, other family well being measures (helpful since income is endog and it is hard to find instruments for these changes)

-- Explored in the literature: birth weight, test scores (Dahl and Lochner)

Eissa and Hoynes 2004, Journal of Public Economics

Examines impact of EITC on labor force participation of married couples. Incentives different than for single women.

Economics

– Using the secondary earner model, the predictions for the married men are the same as single persons (employment increases and ambiguous effects on hours)

– Predictions for secondary earners will, in general, depend on the earnings of their husband. Consider the predictions for the woman as a function of the earnings of the primary earner:

Earnings of husband	Effect on nonlabor income of woman	Effect on first hour net of tax wage for woman	Predictions for Pr(work) and hours
Nonworker	none	increase	P(work) + Hours ??
E in phase-in	increase	increase	P(work) ?? Hours ??
E in flat	increase	none	P(work) – Hours –
E in phase-out	increase	decrease	P(work) – Hours –

– Qualitative prediction is that the EITC will lead to a reduction in employment and hours of secondary earners.

Data: CPS 1984-1997, covers 3 expansions in EITC
sample of married couples with educ<12 years, ages 25-54

2 Estimation Strategies:

(1) Quasi-Experimental

OBRA93: compare change in labor market outcome for treated (married couples with kids) to controls (married couples without kids)

- largest ever expansion in credit
- created large relative increase for families with 2 or more children

Identification:

- kids exogenous (random treatment assignment)
- no interaction b/w group and time other than credit expansion

(2) Reduced Form

– We were concerned about whether married couples with children were on same trends as married couples without children. So we present an alternative identification strategy using ONLY the sample of married couples with children.

Take advantage of additional variation:

-- time series: expansion in EITC due to TRA86, OBRA90, OBRA93

-- cross-section: effects should be greatest for those with larger families, lower wages, women married to low earning men

Tax Simulation Routine: EITC, other federal taxes, payroll taxes

Assumptions:

- secondary earner model holds –> income, wage, and tax calculations for the woman take into account the earnings of the man
- exogeneity of gross wages

Estimate probit model for probability of work

$$\Pr(P_{it} = 1) = \alpha + \gamma y_{it}^{n} + \beta w_{it}(1 - t_{it}^{a}) + \delta Z_{it} + state + time + \varepsilon_{it}$$

y = net of tax non-labor income (includes husband's earnings)
w(1-t) = average net of tax wage (also includes husband's earnings)
average tax rate, from 0–> pt or ft status

Findings:
– qualitatively similar results for both methods
– small insignificant positive effect on husband's employment
– modest and significant negative effect on wife's employment.

Rothstein "The Unintended Consequences of Encouraging Work: Is the EITC As Good as an NIT?"

Evidence from Eissa & Liebman, Meyer and Rosenbaum and others consistently shows that the EITC has led to increases in employment among single mothers with children.

If so, could these increases in employment lead to a reduction in wages? If so this could reduce the benefits of the EITC among those eligible and reduce wages for ineligible workers competing in the same markets as eligible workers.

EITC vs NIT:
-- NIT has guaranteed income, transfer if no earnings
-- EITC is only available to workers

Besides evaluating the tax incidence of the EITC, the paper provides semiparameteric estimates of impact of EITC across wage distribution AND contributes more generally to the empirical tax incidence literature.

Identifies through 1993 policy expansion (largest to date). Focus on women.

CPS MORG, observations on hourly wages and hours worked last week

Pre-reform 1992/1993

Post-reform 9/95-8/97

TAXSIM and March CPS used to simulate ATR and MTR for groups

-- MTR at current earnings

-- ATR calculated comparing taxes at current earnings & zero earnings

-- calculate mean MTR and ATR by skill level (wage level) and demographics (marital state x number of children 0,1,2+)

Use DFL reweighting method to make post reform sample look "similar" to pre sample.

Figure 3.
Change in mean ATR among families with working women, by skill and group

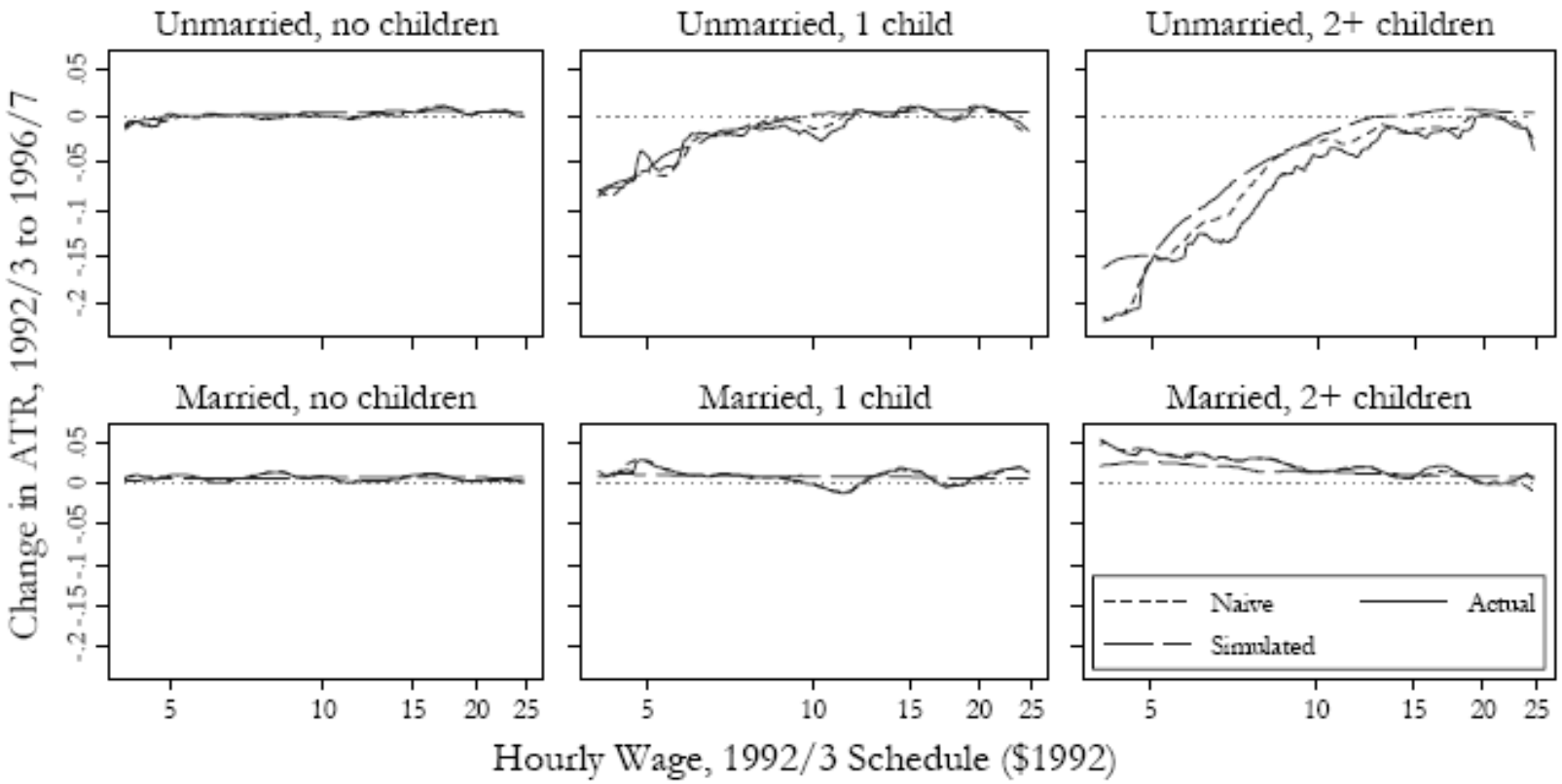
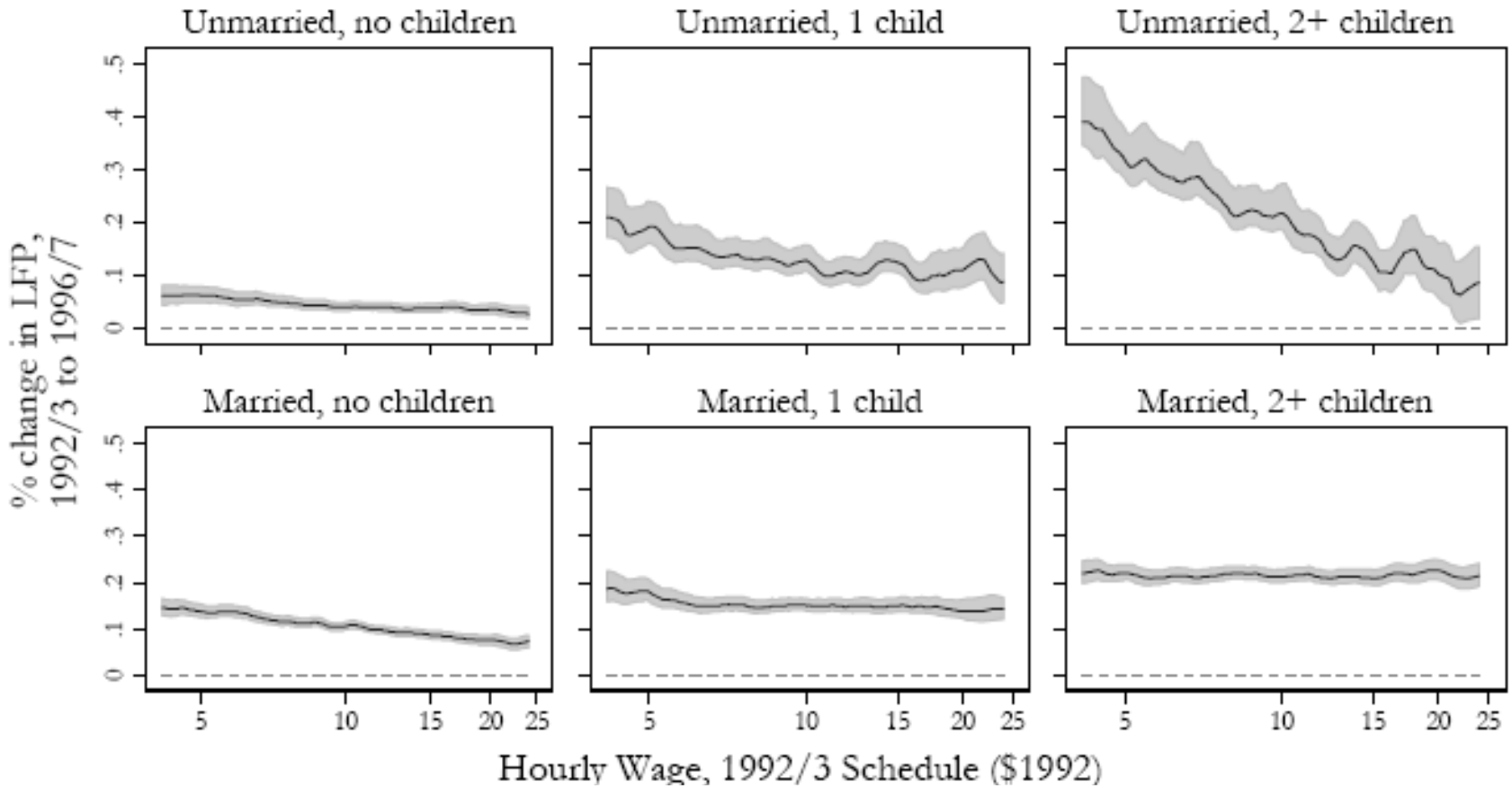
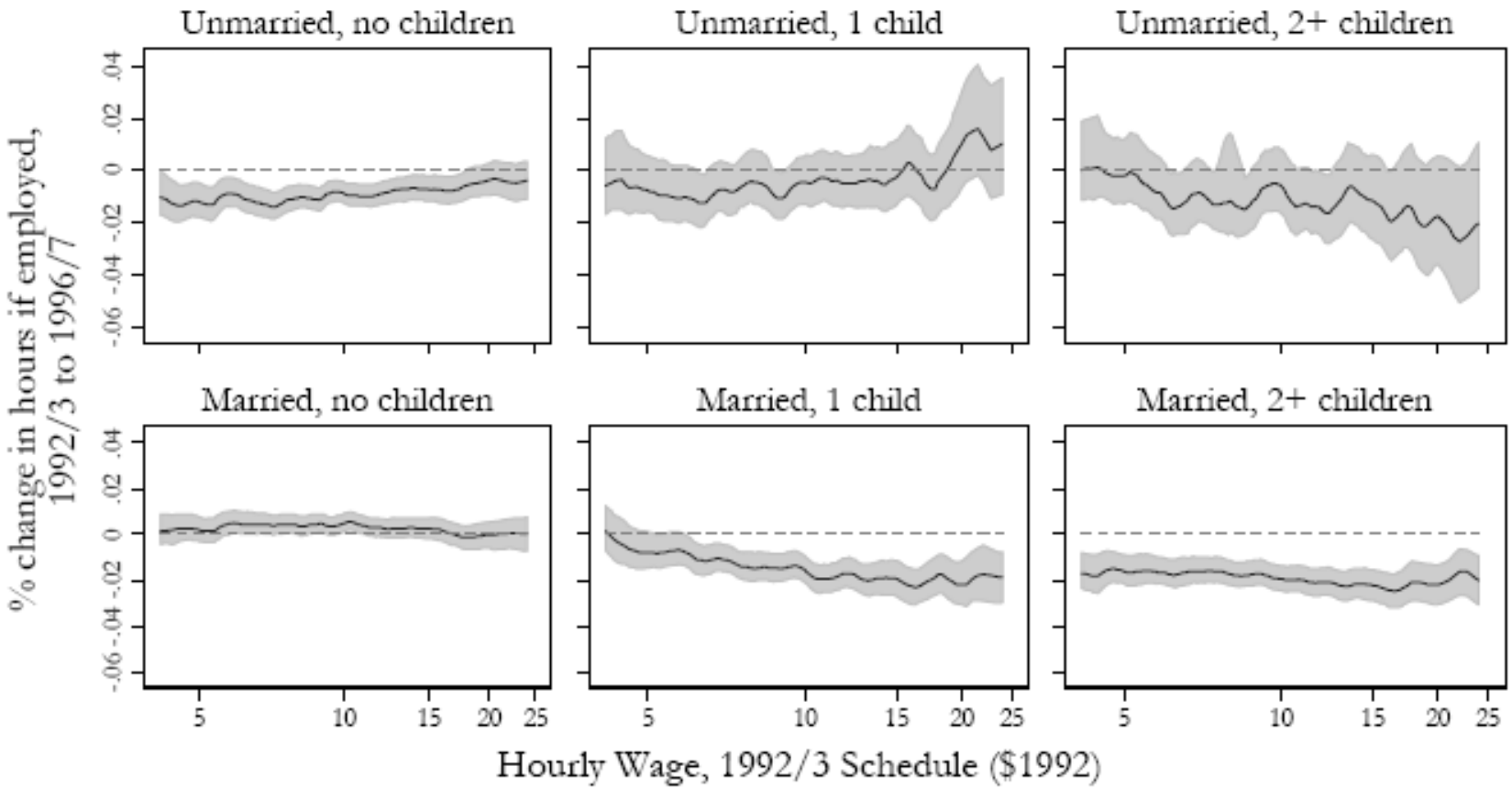


Figure 4.
Change in labor force participation, women, by skill and group



LARGE EXTENSIVE MARGIN EFFECTS

Figure 6.
Change in usual hours if employed,
women, by skill and group



Little intensive margin effects

Figure 8.
Change in log wages, women, by skill and group