EVIDENCE ON LABOR SUPPLY AND TAXES, AND IMPLICATIONS FOR TAX POLICY

Nada Eissa
Georgetown University and NBER
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Introduction

- What this paper does not do:
  - Estimate behavioral response to the tax cuts
  - Consider the revenue effects
  - Focus on high-income taxpayers

- What this paper does:
  1. Simulates impact of tax cuts on labor supply incentives, and hours of work.
  2. Discusses issues in empirical evaluation of taxes and labor supply
     - Complexity of the budget set
     - Identification problems
  3. Reviews existing evidence on labor supply and taxes
  4. Discusses welfare Effects of tax cuts

Summary of EGTRRA/JGTRRA

1. Tax Schedule and Marginal Rate Reductions
   - 10% bracket
   - 3 percentage point cut in 28%,31% &36% percent rates
   - 4.5 percentage point cut in 39.6% rate

2. Child Tax Credit
   - Made refundable (earnings>$10K)
   - Max Credit doubled to $1000

3. Marriage Penalty Relief
   - Joint-filer standard deduction/15% bracket increased from 167% to 200% of those for single-filers.
   - Max EITC region extended for joint filers.

4. Itemized Deduction/Personal Exemptions
   - Eliminated phaseout for higher-income taxpayers.

Impact of Tax Cuts on Incentives

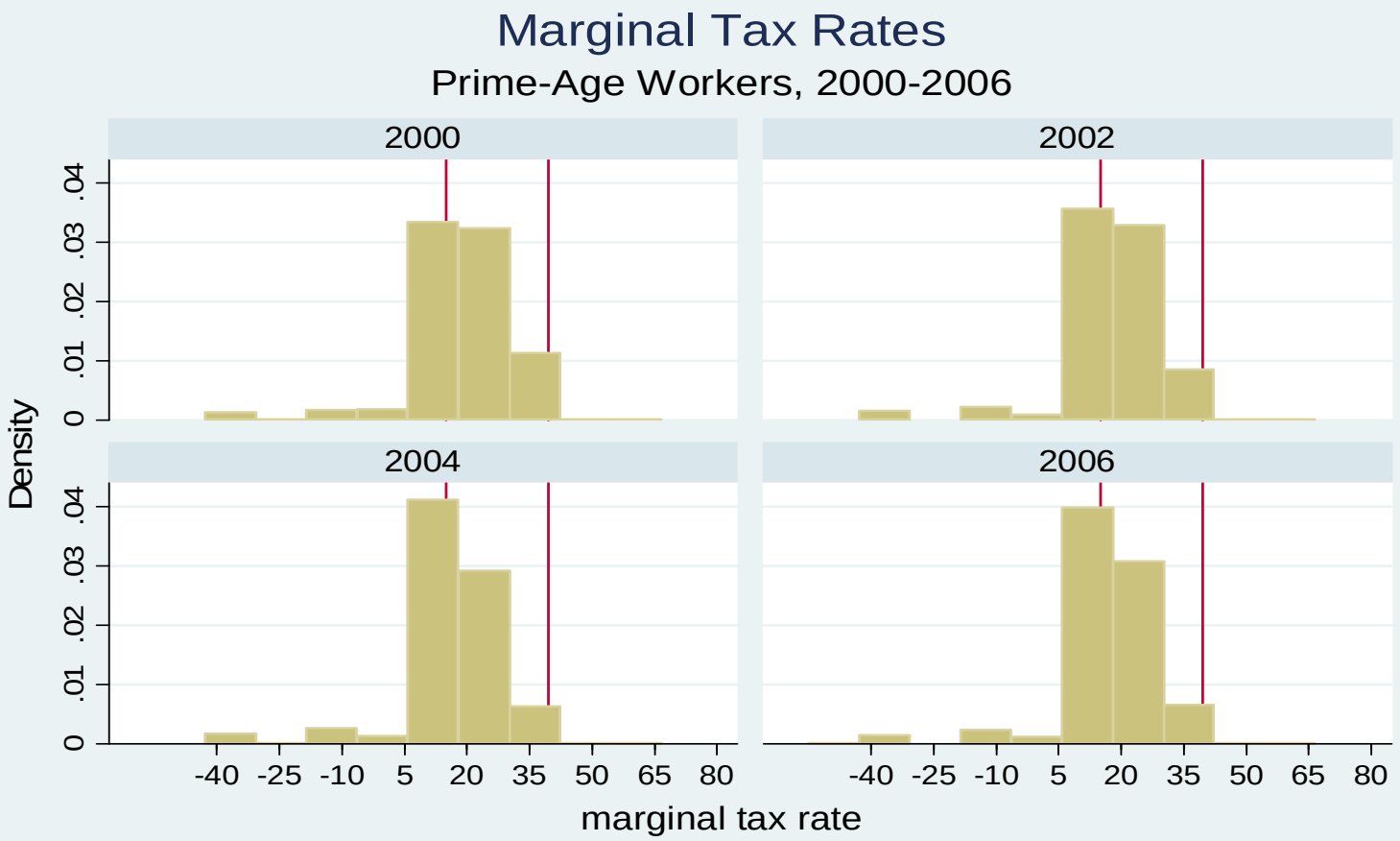
Table II

Marginal and Average Federal Income Tax Rates

Effect of EGTRRA and JGTRRA

	Marginal Tax Rate (2000 law)	Δ Marginal Rate (2004 law)	Average Tax Rate (2000 law)	Δ Average Rate (2004 law)
All	17.3 (15.5)	-2.6 (4.6)	9.4 (12.0)	-2.7 (1.6)
Secondary Earners	21.5 (12.4)	-33 (5.5)	10.9 (11.2)	-3.4 (1.5)
Household Heads	3.8 (27.8)	-3.3 (7.0)	-7 (15.8)	-2.6 (2.1)
Top 1%	38.6 (0.9)	-4.9 (1.4)	36.8 (4.9)	-4.3 (0.8)

Distribution of Marginal Tax Rates



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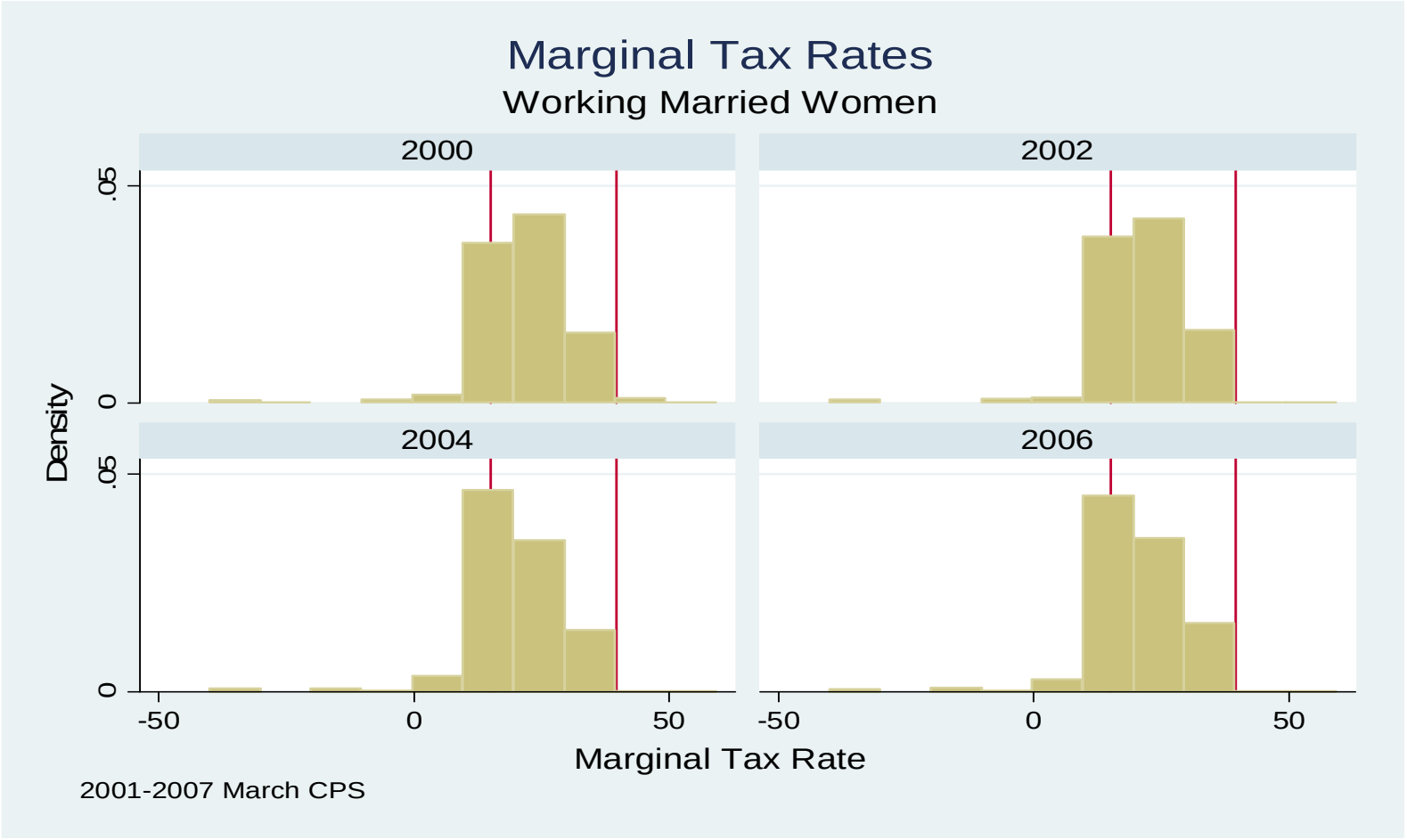

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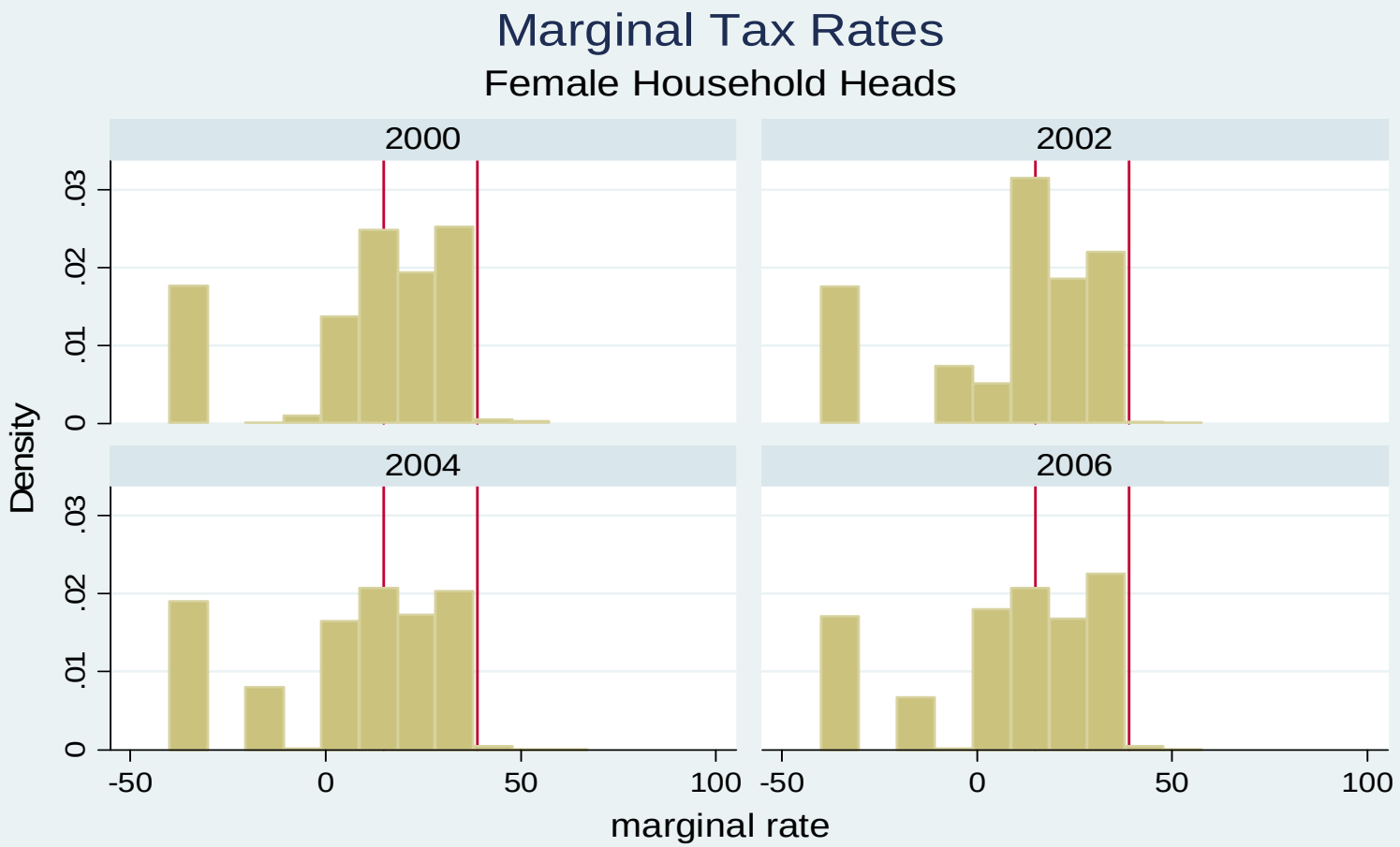
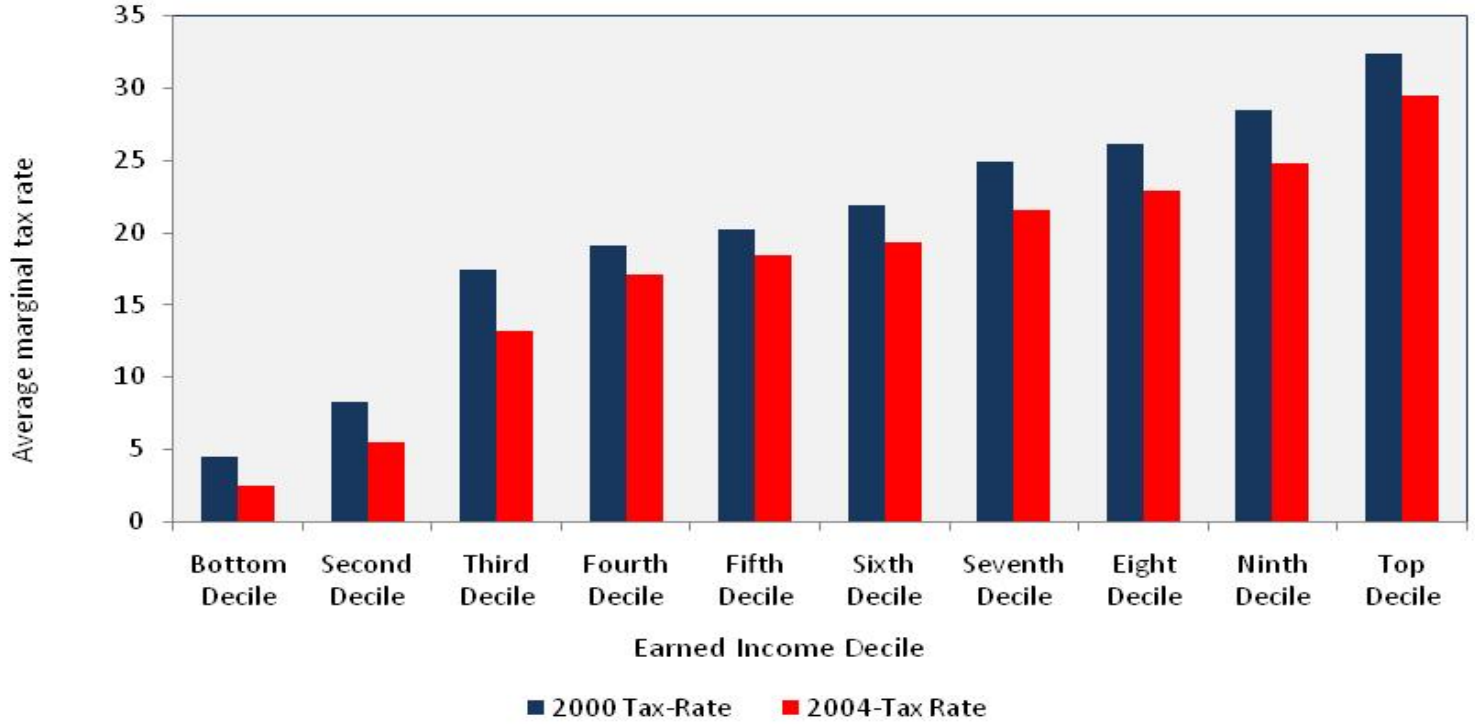


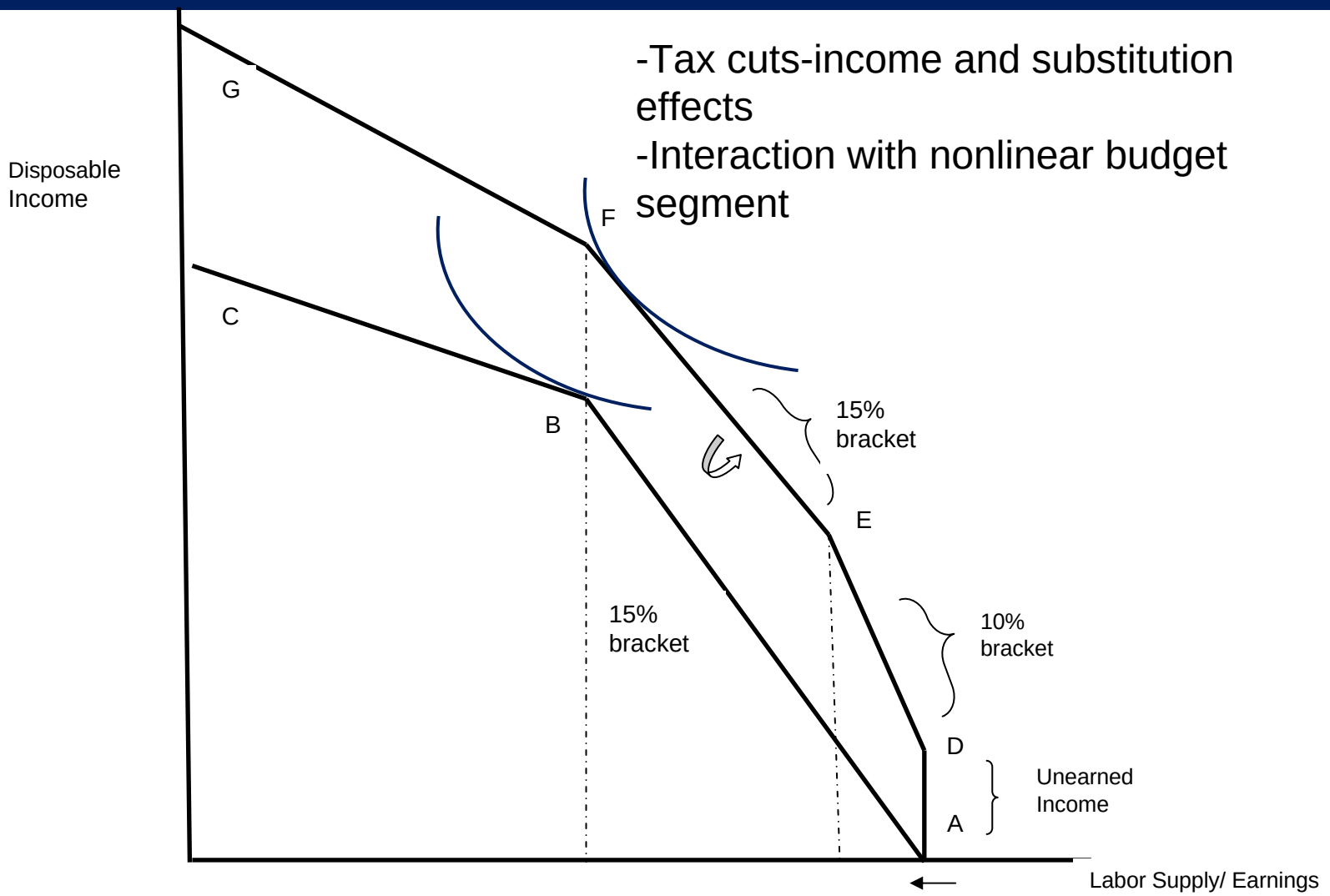
Distribution of Marginal Tax Cuts

Figure II
Impact on EGTRRA/JGTRRA on Marginal Federal Tax Rates
by Income Decile, 2000 CPS



All prime aged(23-59) individuals. 2004 tax rate is calculated for 2000 incomes inflated using CPI.
Average rate does not include payroll or state tax rate.

Impact on Budget Constraint



Hours of Work Effects

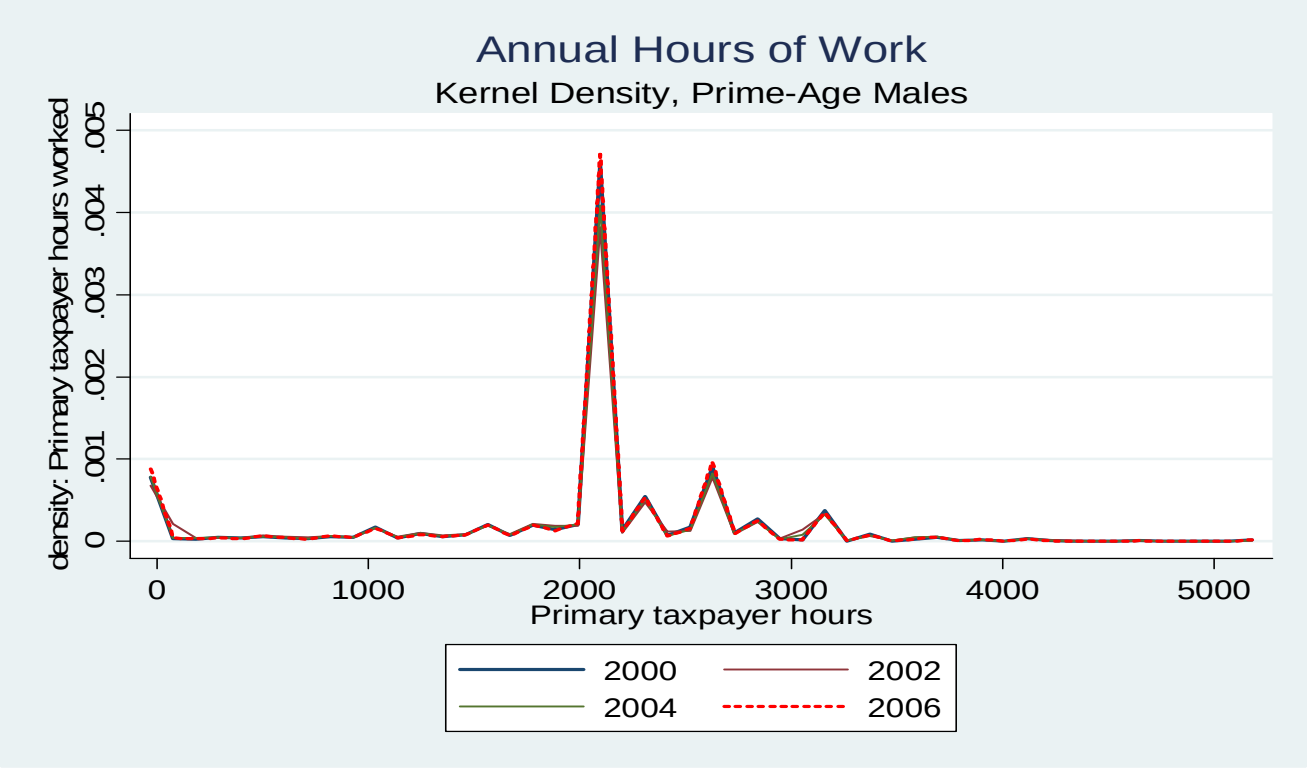
Table III

Predicted Impact of EGTRRA/JGTRRA on Hours Worked

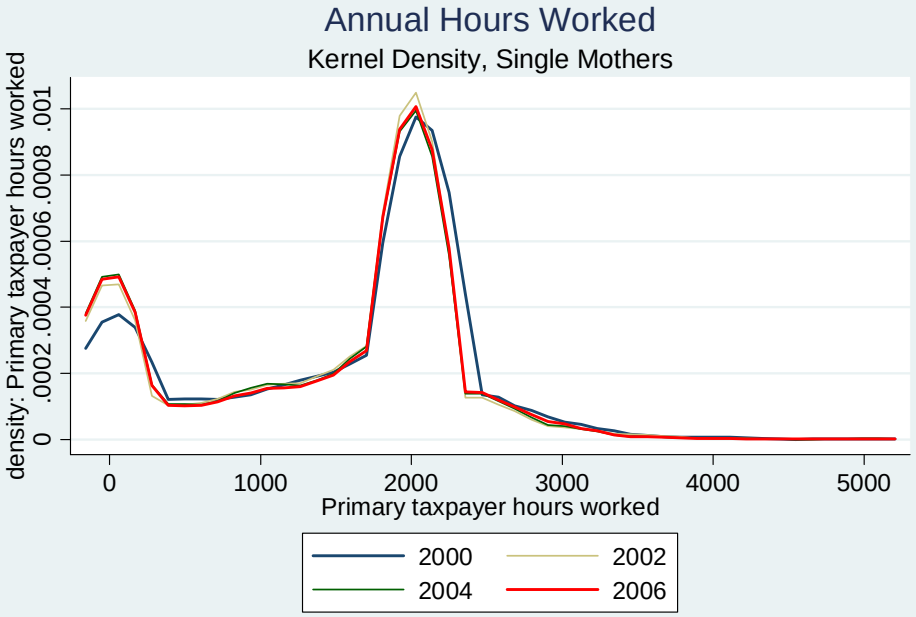
	% Δ Net Wage (wage elasticity)	Δ Hours Worked (%, level)	% Δ net income (income elasticity)	Δ Hours Worked (%, level)	Total Effect (hours, earned income)
All	+3.5% (0.2)	0.7% (14)	+2.6% (-0.1)	-0.3% (-5.2)	8.8 ($180)
Secondary Earners	+5.0% (0.65)	3.2% (55)	+3.4% (-0.25)	-0.9% (-11.5)	43.5 ($750)
Household Heads	+5.1% (0.2)	1.0% (19)	+2.6% (-0.1)	-.3% (-4.0)	15.0 ($175)

Data come from the 2001 March CPS. The sample includes all prime-age (23-59) individuals. Tax rates are calculated using the NBER TAXSIM model, and assume all married couples file jointly and all household heads take the standard deduction. The tax rates are calculated for 2000, and then again for 2004 (by inflating all income components using the CPI). Δ represents the difference between the actual rate and what it would have been under the 2004 tax law.

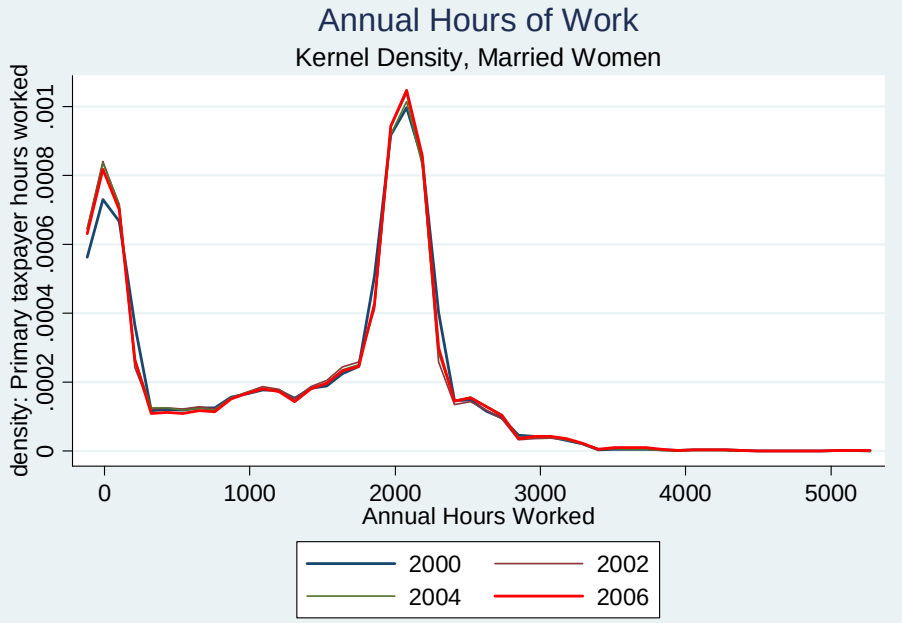
Distribution of Annual Hours, Prime-Age Males



Female Distribution of Annual Hours



2001-2007 March CPS, Prime-Age (23-59)



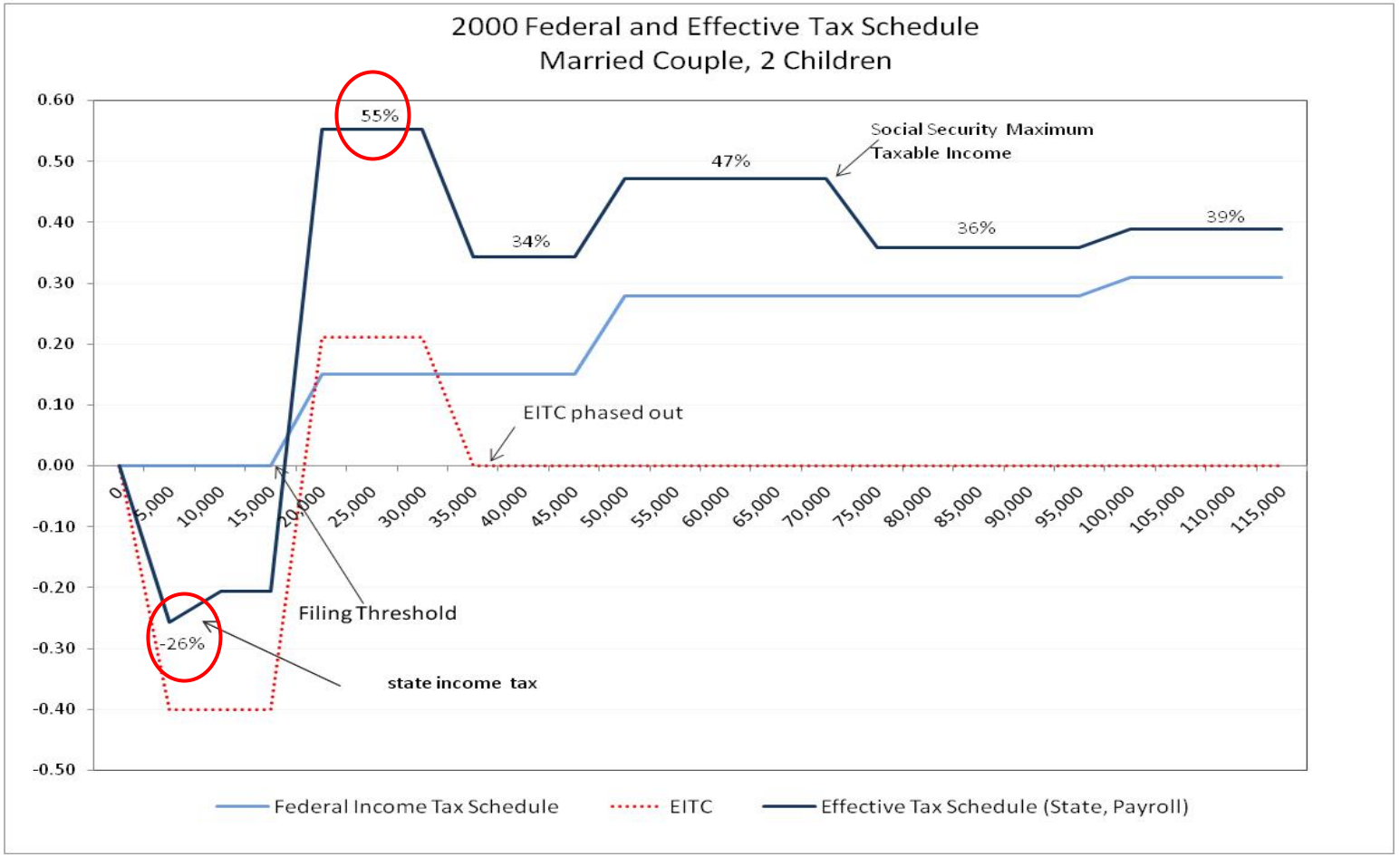
Issues in the Estimation of Labor Supply and Taxes

- Estimating the effects of taxes on labor supply is notoriously difficult
  - joint determination of labor supply and taxes with non-proportional tax schedules.
  - unobserved tastes for work.
  - measurement error in both the marginal tax rate and the wage.

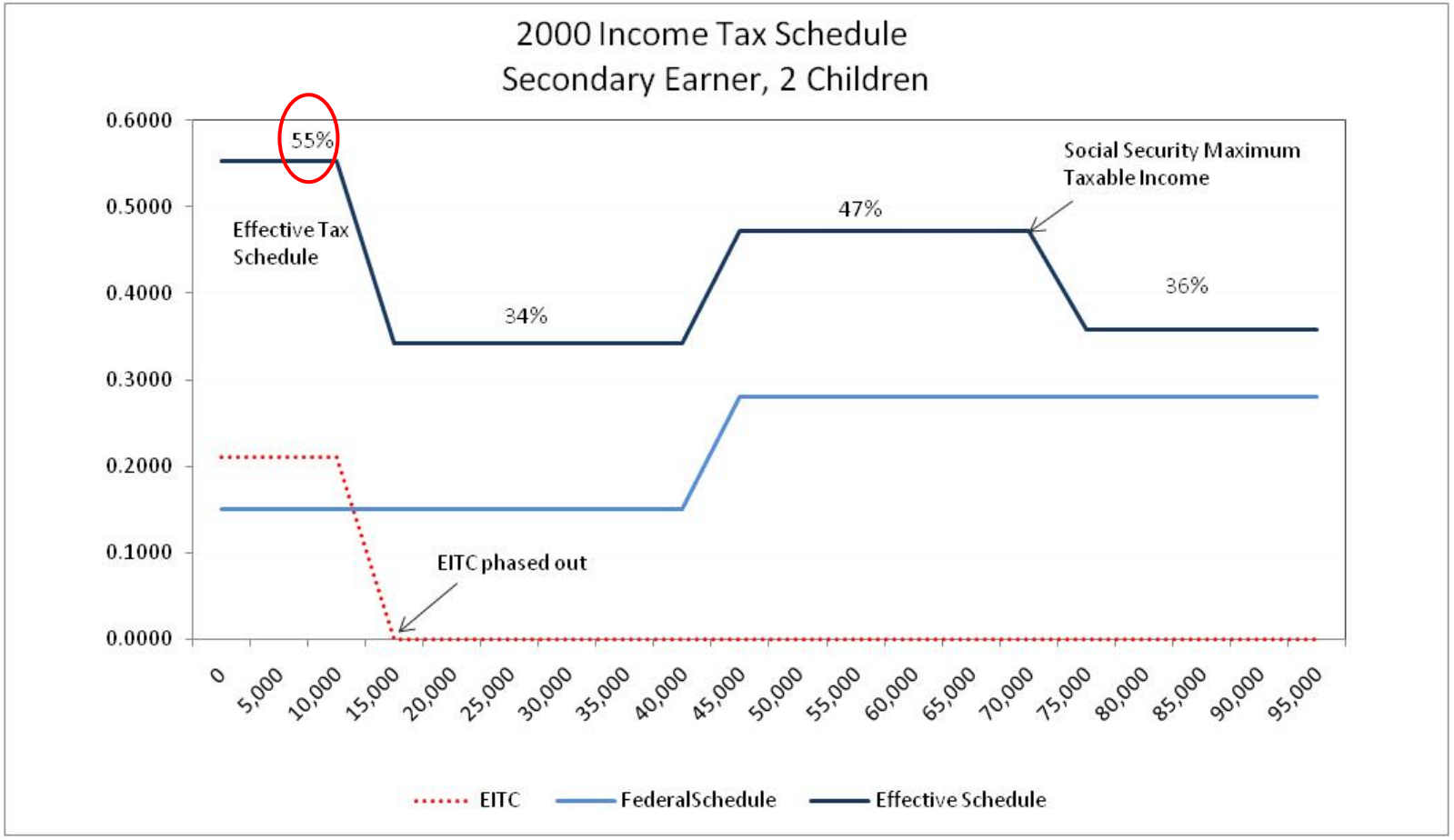
- Vast empirical literature and divergent set of estimates.
  - Extensively reviewed(Hausman 1985, Blundell and MaCurdy 1999).

- Focus on:
  - the budget set
  - Identification

Tax Schedule: Married Primary Earner



Tax Schedule: Secondary Earner

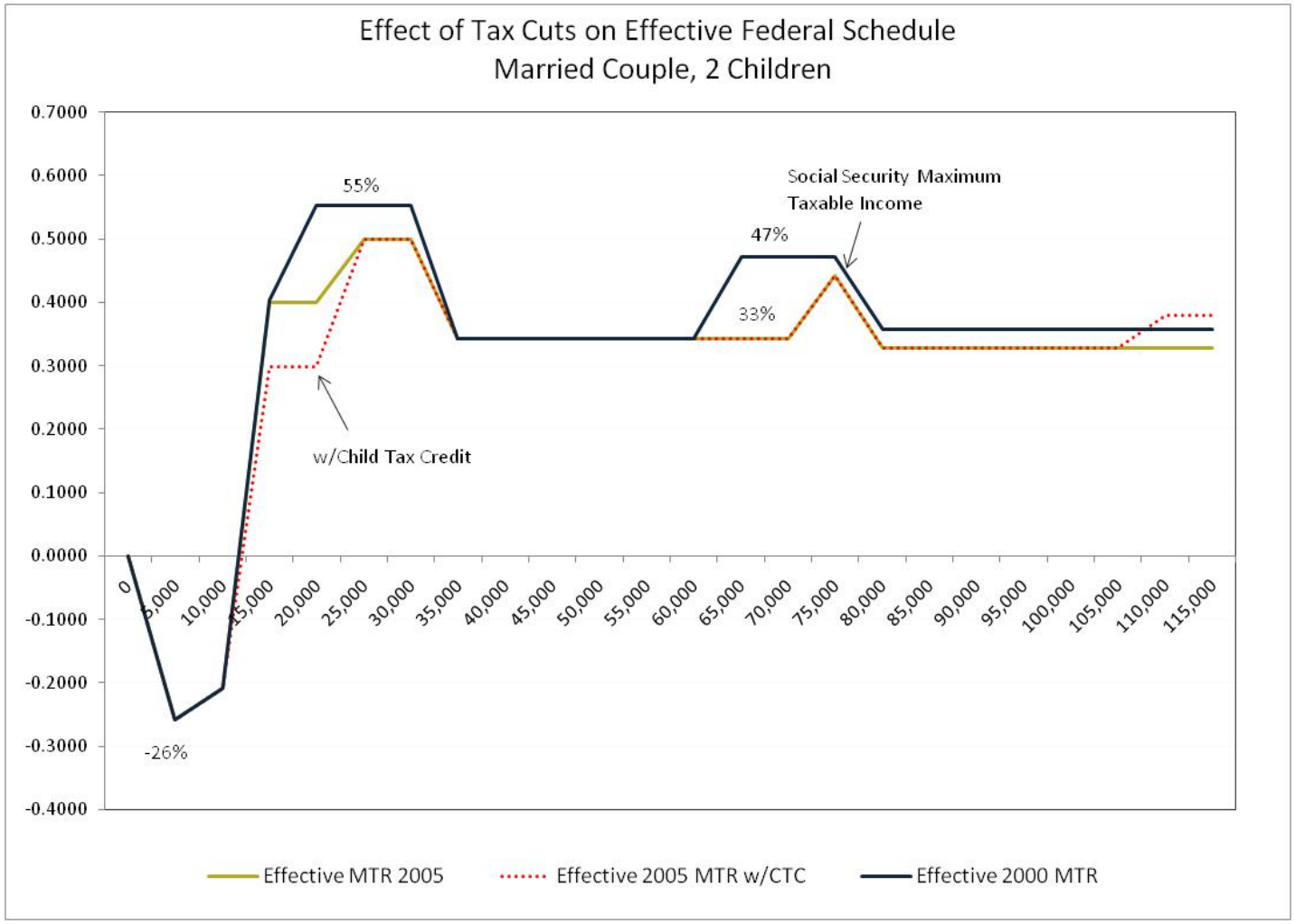


Complicated Budget Sets: Bizarre?

- “The patterns by age and [income] of marginal tax rates on earnings [..] can be summarized with one word- bizarre.” Kotlikoff and Rapson (2006).

- Do taxpayers perceive their tax schedule accurately?
  - No (De Bartolome 1995), Yes (Fujii and Hawley 1988), Maybe (Phillips 2001).
  - Schmedule: an inaccurately-perceived schedule (Liebman and Zeckhauser 2004)
    - Introduction of child credit in 1998
    - people confuse actual and marginal rates, use average tax rate as the marginal tax rate.

Tax Cuts did not simplify schedule



Identification of Tax Effects

- Fundamental problem: all taxpayers face the same schedule at any point in time (subject to filing status).
  - Different tax rates function of demographic characteristics that are themselves determinants of labor supply behavior.

- With nonlinear budget sets, tax changes can lead to unexpected and seemingly irrational labor supply responses to tax changes.

Methodological Approaches

1. Nonlinear Budget Set Approach
   - Hausman (1981), Triest (1990) MaCurdy Green and Paarsch (1990).
   - But, taxpayers ned knowledge of the exact budget constraint, binding restrictions on underlying preferences (Heckman 1992).

- Blomquist and Newey (BM 1997): nonparametric estimator that that includes the entire budget set in the regression.
  - not readily available elasticity of labor supply.

Methodological Approaches

2. Quasi-Experimental Approaches (Eissa 1995, EL 1996, Meyer and Rosenbaum 2001,Kubik 2004)
   - Grouping estimators: difference-in-differences
   - Non-neutral effects within group: IV estimators.

- But, lacks structure and identification assumptions (Blundell and MaCurdy- BM-, 1999)
  - useful starting point and appealing because of its simplicity and transparency.
- Recent work accounts for endogenous wages, nonlinearity of budget set (Blundell, Duncan and Meghir -BDM, 1998).
  - But applied to behavioral responses in UK (simpler tax structure).

IV. What Do We Know about Taxes and Labor Supply? Male Labor Supply

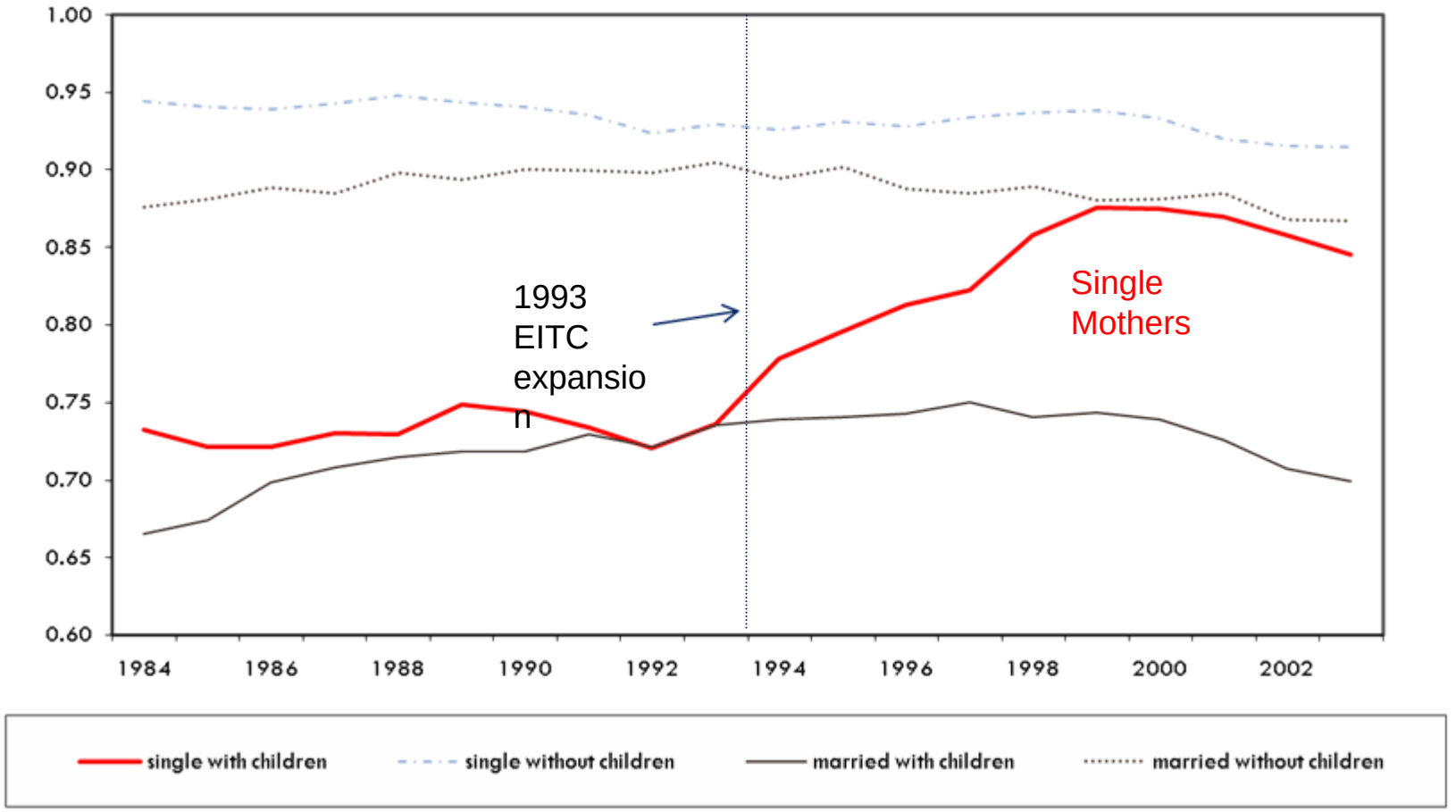
- Male hours of work not responsive (Triest 1990, MaCurdy *et. al*. 1990, Moffitt and Wilhelm 2000)
  - Exception: Hausman (1981).

- But:
  - Response of wage and salary income by high-income men to TRA86 (Moffitt and Wilhelm 2000).
  - Entrepreneurial activity and decision to become self-employed (Gentry and Hubbard 2005, Gordon and Cullen 2007).
  - Decline in labor force participation of less-skilled men. (Juhn, Murphy, Pierce –JMP; Juhn; Katz).

IV. What Do We Know about Taxes and Labor Supply? Female Labor Supply

- Earlier surveys of married women placed the range of elasticities between -0.2 and 2.3 (Hausman 1985).
  - Hausman (1981) estimates a net-wage elasticity of 1.
- Over time, successive studies have found smaller elasticities (Triest 1990, Eissa 1995, Eissa and Hoynes 2004, Liebman and Saez 2006)
- Distinction between hours worked and entry/exit important.
- Similar findings for female household heads (Hotz and Scholz 2003, Eissa and Hoynes 2006).

Female Labor Force Participation, 1984-2003



Why a Participation Effect and no Hours Effect?

1. Institutional restrictions or norms
2. measurement error in hours in the survey.
3. taxpayers may not be aware of the structure of the tax/EITC schedule.

Welfare Evaluation of Tax Reform

- Labor force participation responses matter for design of optimal transfer program (Saez, 2002).
  - optimal transfer program: negative tax rates at the bottom.

- EKK (2008) model participation and show marginal excess burden of tax depends on different tax wedges and elasticities along 2 margins of labor supply.

Efficiency Effects of Tax Cuts

TABLE II

Welfare effects from the changed taxation of single mothers

Hours-of-work elasticity equal to 0.1 and participation elasticity equal to 0.4

Tax reform	The welfare gain from tax reform				Reduction in tax burden	Welfare gain per $ spent
	Intensive (1)	Extensive (2)	Total (3)	"Traditional" (4)	(5)	(6)
1986 reform	0.98	4.48	5.47	4.92	7.39	3.84
1990 reform	0.04	2.06	2.09	0.20	4.15	2.02
1993 reform	-0.18	2.36	2.18	-0.90	7.39	1.42
2001 reform	0.28	0.64	0.92	1.39	2.55	1.57

Note: The welfare gain is measured in percentage of wage income and is calculated using equation (23) in the text. The total welfare gain is calculated as the sum of the intensive and extensive gains. The "traditional" welfare gain is calculated assuming that the total labor supply elasticity is entirely along the intensive margin. The reduction in tax burden measures the decrease in tax liabilities in percentage of wage income and before any behavioral responses. The welfare gain per dollar spent equals RTB/(RTB-EG) where EG is the efficiency gain and RTB is the reduction in tax burden. Data come from the March Current Population Survey.

Conclusions

1. Overall effects depend in large part of which margins of labor supply are evaluated.
   - effects of taxes on labor supply suggests hours worked by working taxpayers are not responsive to taxes, even for most married women.
   - Other margins of labor supply more responsive:
     - Participation decisions of females, less-educated men
     - reported wage and salary earnings of high-income men following TRA86 with no corresponding change in their hours of work (Moffitt and Wilhelm 2000).
     - self-employment and entrepreneurial activity (Gentry and Hubbard 2005)
2. Implication of participation decision for optimal tax-transfer programs, welfare evaluation of tax reform.
3. Impact of phase-ins and sunset of the tax cuts generates intertemporal responses.