

Using Evidence to Improve the Tax System: Lessons from the Mirrlees Review

BMO Lecture

Simon Fraser University

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Using Evidence to Improve the Tax System

- Take the *Mirrlees Review* as an example
 - an integrated picture of tax design and reform, published in 2011
<http://www.ifs.org.uk/mirrleesReview>
- Comprehensive review of tax reform, drawing on:
 - new evidence, new theory, a new economic environment
- View the tax system as a whole
 - earnings and direct tax; savings, capital and corporate taxation, ..
- For developed open economies
 - the UK as the running experiment

Drawing on an increased empirical evidence base:

- Labour supply responses for individuals and families
 - at the intensive and extensive margins
 - by age and demographic structure
- Taxable income elasticities
 - top of the income distribution using tax return information
- Consumer responses to indirect taxation
 - interaction with labour supply and variation of price elasticities
- Intertemporal responses
 - human capital investments and earnings, consumption, savings and pensions
- ..and our ability to (micro-)simulate marginal and average rates
 - simulate proposals for reform

The Mirrlees Review

Reforming the Tax System for the 21st Century

Chairman: Sir James Mirrlees

Tim Besley (LSE & IFS)

Richard Blundell (IFS & UCL)

Malcolm Gammie QC (One Essex Court)

James Poterba (MIT & NBER)

- In this talk I use results from three other recent studies:
 - *Labour Supply and the Extensive Margin; AER 2011*
 - *Empirical Evidence and Tax Reform; CJE 2012*
 - *Labour Supply, Human Capital and Welfare Reform; NBER 2013*
- To what extent do dynamic 'longer-run' issues change our view of earnings tax reform?

Principles

- **System:**
 - Consider the tax system as a whole
 - marginal tax rate is sum of all additional taxes paid when income increases by \$1.
 - Particular taxes need not be green or progressive for the whole system to be green and progressive.
- **Neutrality:**
 - Don't discriminate (unnecessarily) between similar activities.
- **Progressivity:**
 - More tax from the better off.

We start from a structure of taxes and benefits that..

- Does not work as a system
 - Lack of joining up between welfare benefits, personal taxes and corporate taxes
- Is not neutral where it should be
 - Inconsistent savings taxes and a corporate tax system that favours debt over equity
- Is not well designed where it should deviate from neutrality
 - A mass of different tax rates on carbon and failure to price congestion properly
- Does not achieve progressivity efficiently
 - VAT zero and reduced rating a poor way to redistribute, and taxes and benefits damage work incentives more than necessary

The broad proposals

- Treat the system as a whole
 - A single integrated welfare benefit
 - Less aggressive means-testing
 - Aligning tax rates across employment and profits
- Move towards neutrality
 - Widening the VAT base
 - Not taxing the normal return to capital
- Whilst proposing sensible deviations from neutrality
 - Imposing a consistent tax on GHG emissions and on congestion
 - Imposing zero rate of VAT on childcare
 - Special treatment for pensions
- Achieve progressivity through the direct tax and benefit system
 - Recognising constraints imposed by responses to incentives

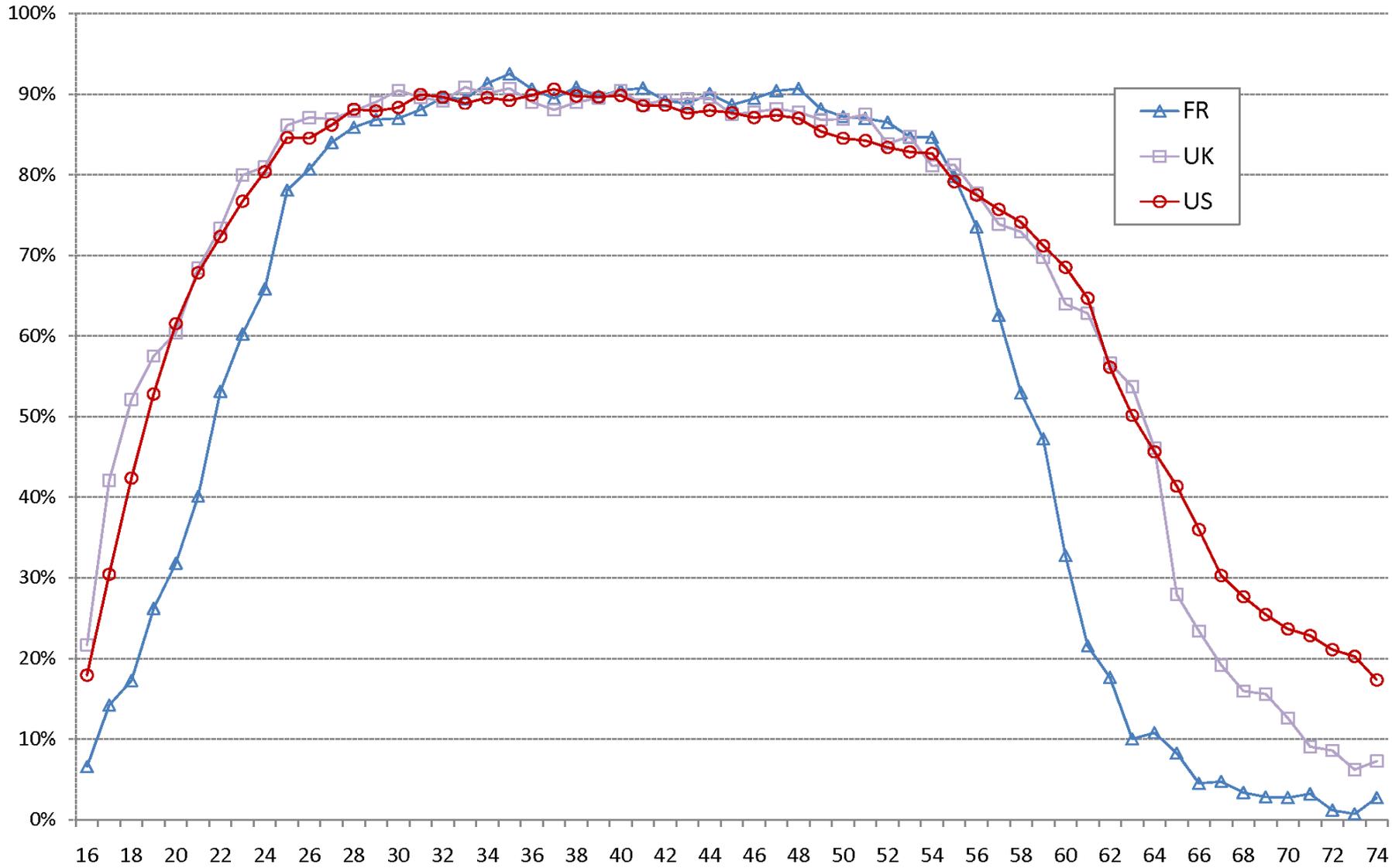
Using Evidence to Improve the Tax System

- How should we assemble the empirical foundations for tax policy design?
- What have we learned ... so far?
- Consider the role of evidence under five headings:
 1. Key margins of adjustment to reform
 2. Measurement of effective incentives
 3. The importance of information and complexity
 4. Evidence on the size of responses
 5. Implications for policy design
- Use these to build an empirically based agenda for reform
 - > an efficient redesign of tax policy....

1. Key margins of adjustment to reform

- A 'descriptive' analysis of the key aspects of observed behaviour
 - the key facts!
- Where is it that individuals, families and firms are most likely to respond?
 - focus here on earnings taxation and the impact on labour supply and human capital
 - e.g. the margins of labour market adjustment.

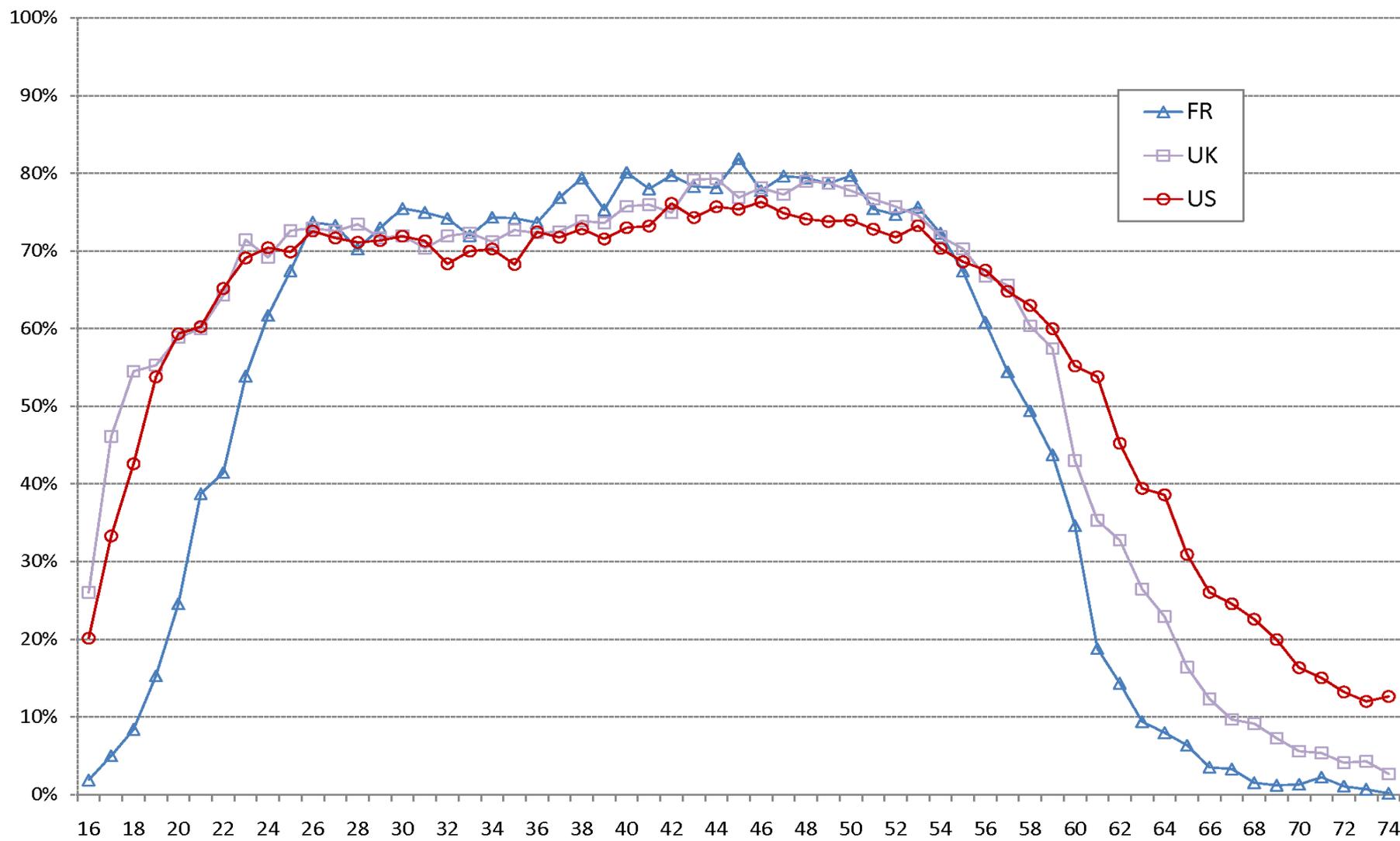
Employment for men by age – FR, UK and US 2007



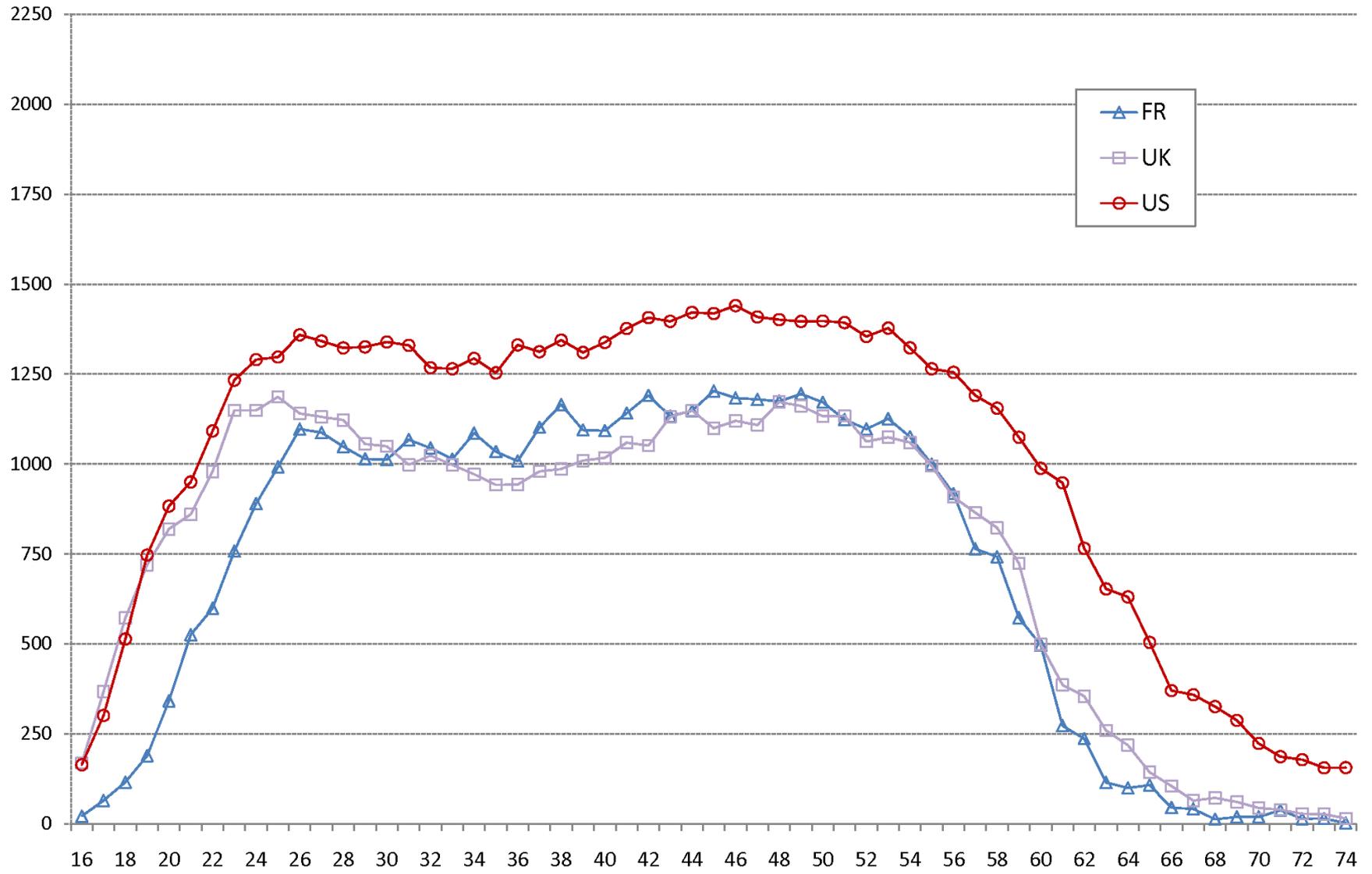
Blundell, Bozio and Laroque (2011)

and for women

Female Employment by age – US, FR and UK 2007

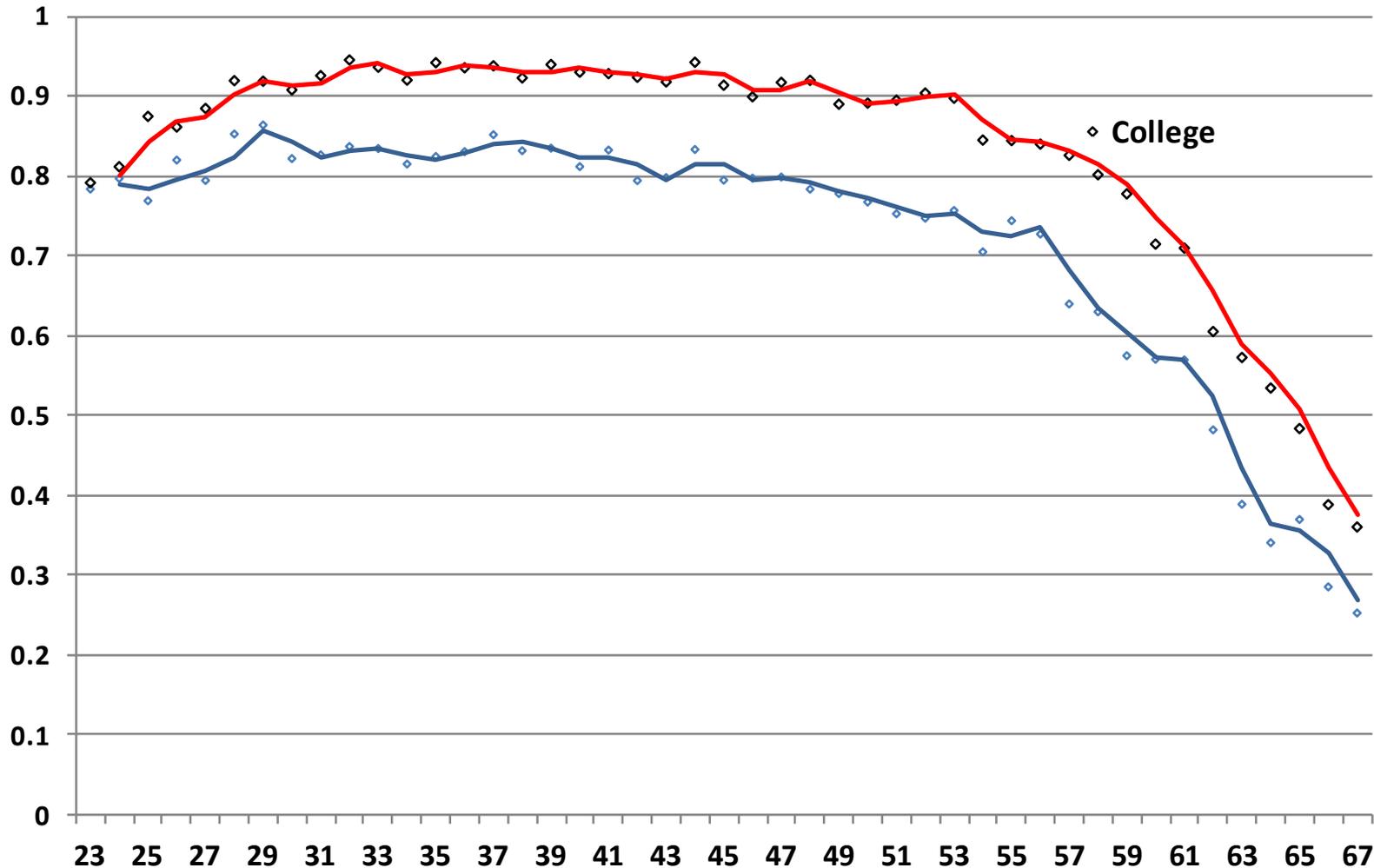


Female Total Hours by age – US, FR and UK 2007

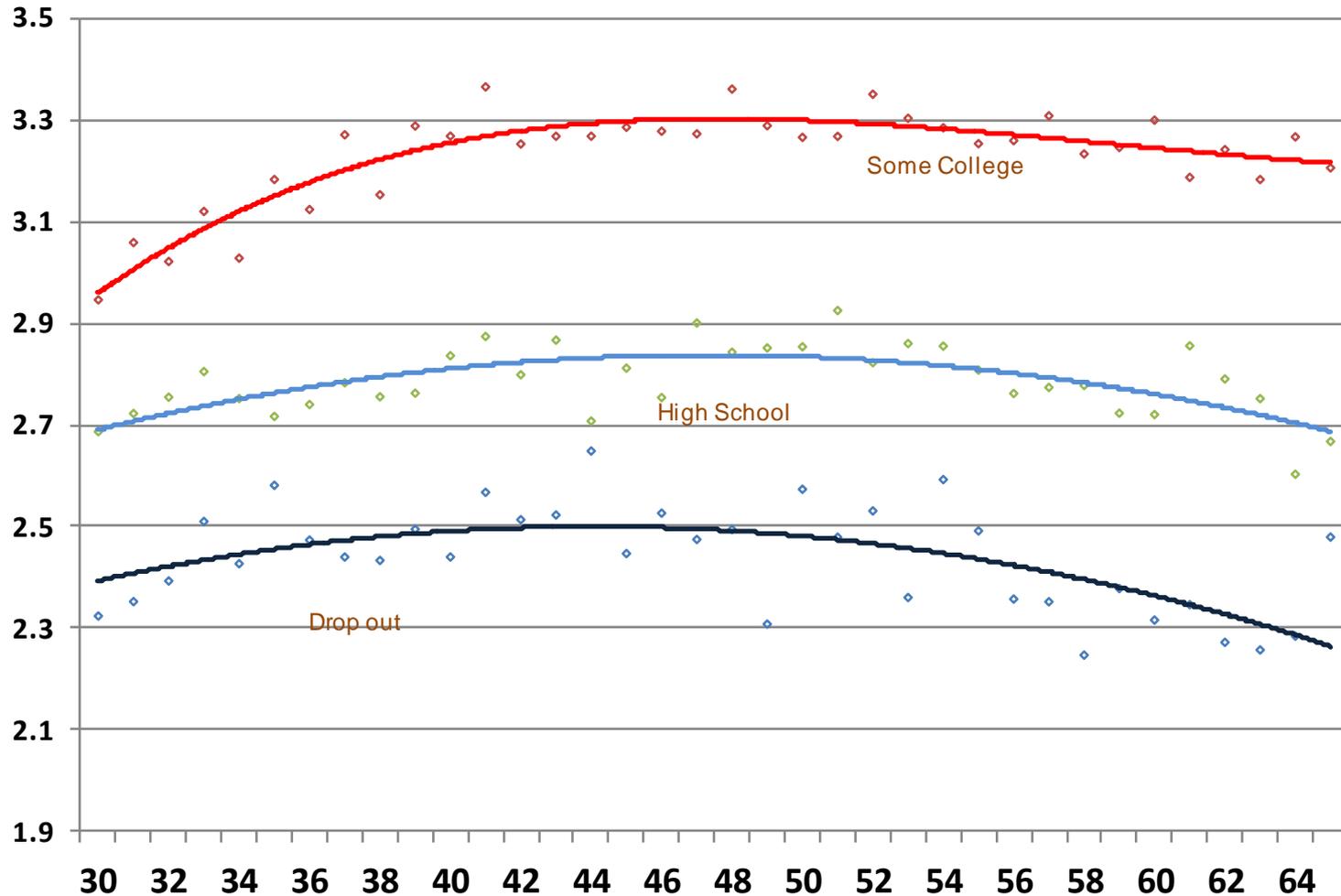


Blundell, Bozio and Laroque (2011)

Employment for men by education and age –US 2007



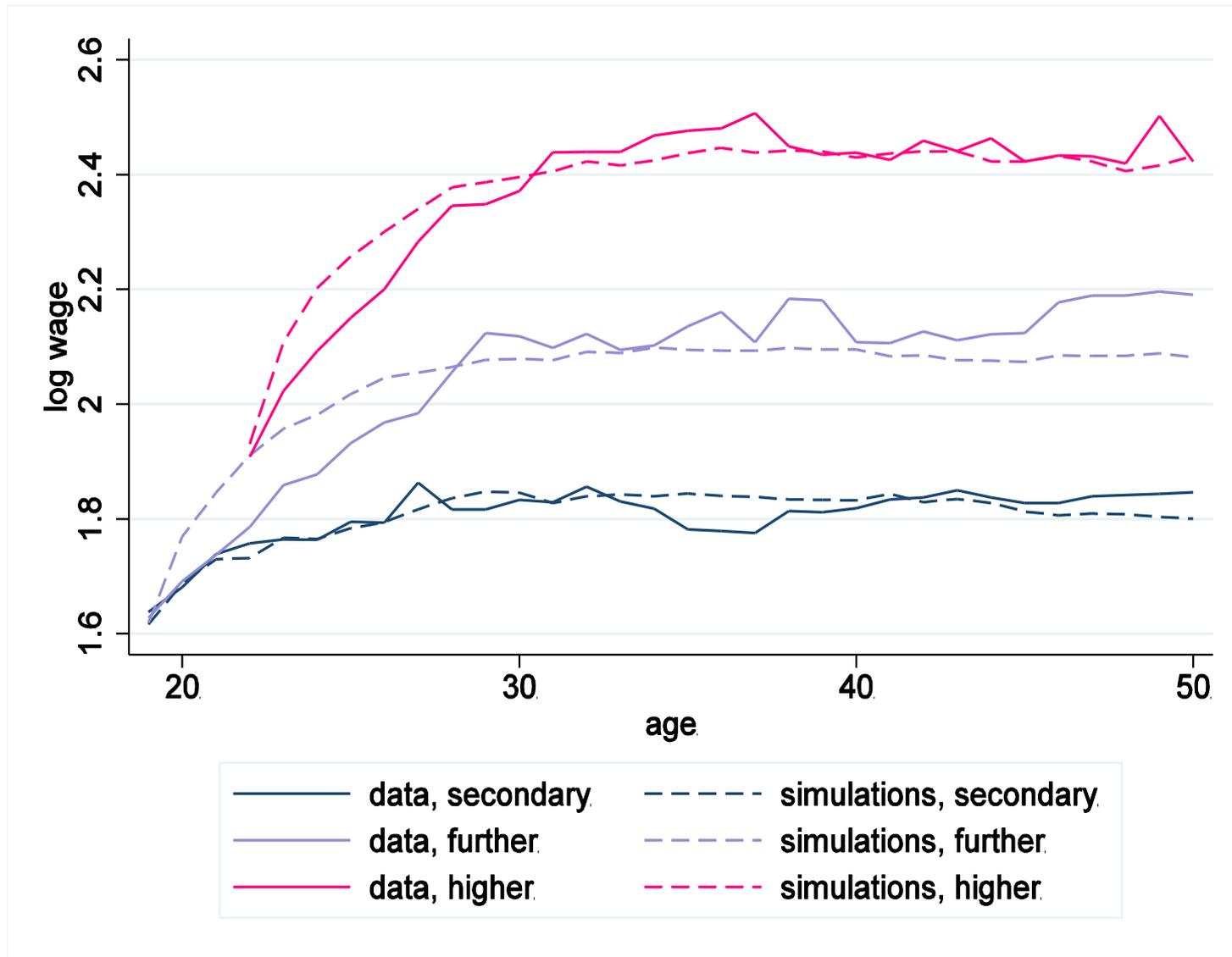
Wages by education and age – US Men



Notes: PSID, 1996-2010, mean log wage by age, cohort effects removed

Source: Blundell, Pistaferri and Saporta (2013)

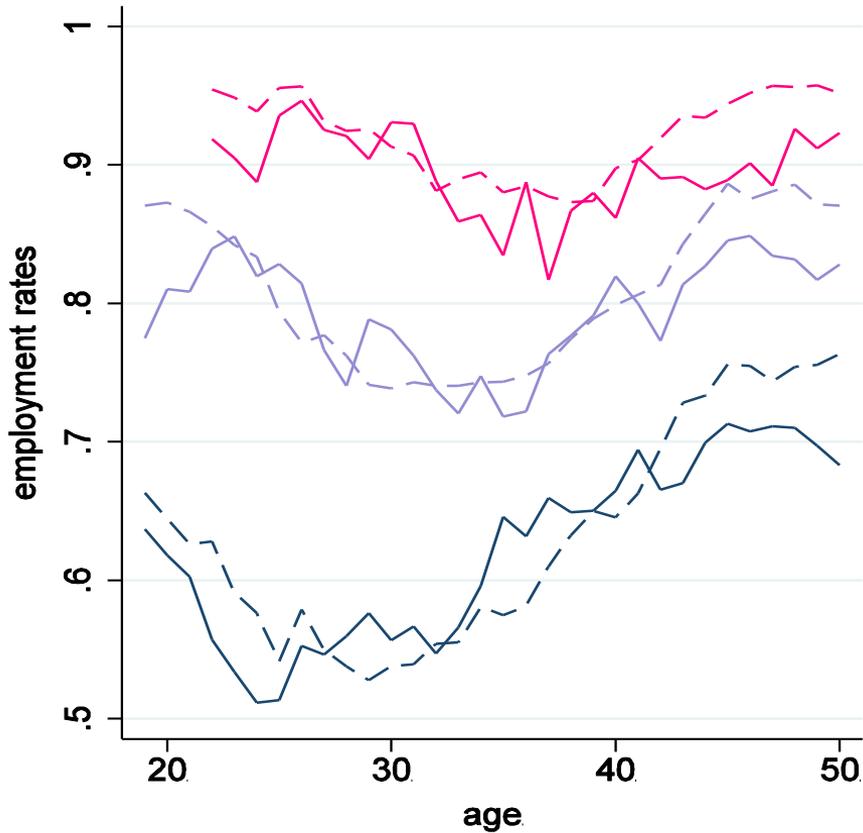
Wages by education and age – UK Women, BHPS



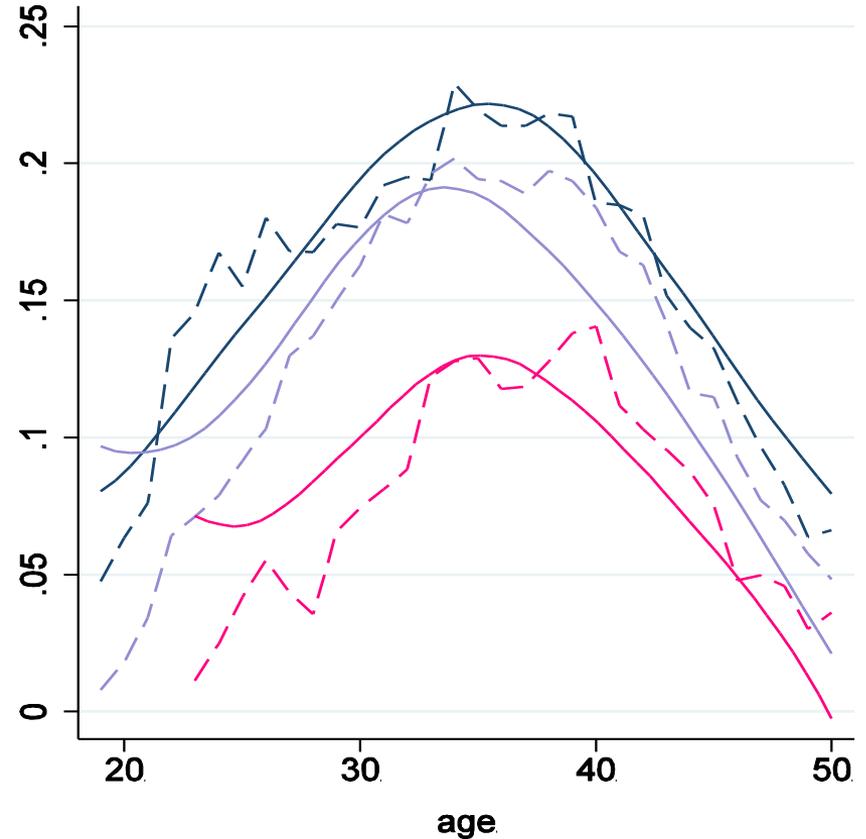
Source: Blundell, Dias, Meghir and Shaw (2013)

Women's employment - UK

All employment

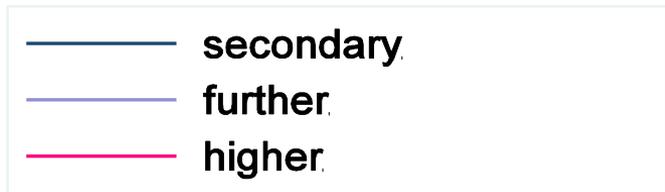
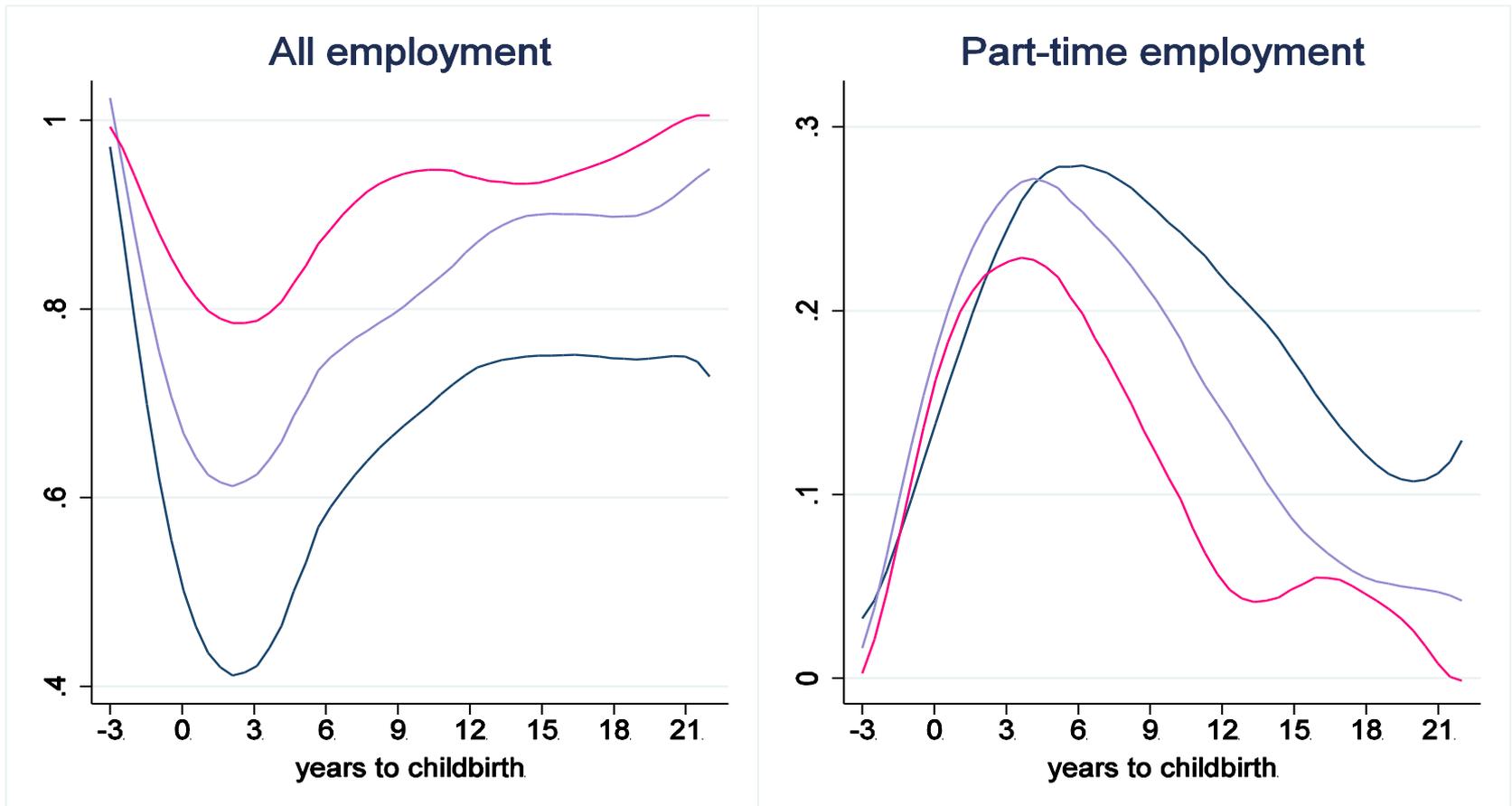


Part-time employment



— data, secondary	- - - simulations, secondary
— data, further	- - - simulations, further
— data, higher	- - - simulations, higher

Women's employment after childbirth - UK



Source: Blundell, Dias, Meghir and Shaw (2013)

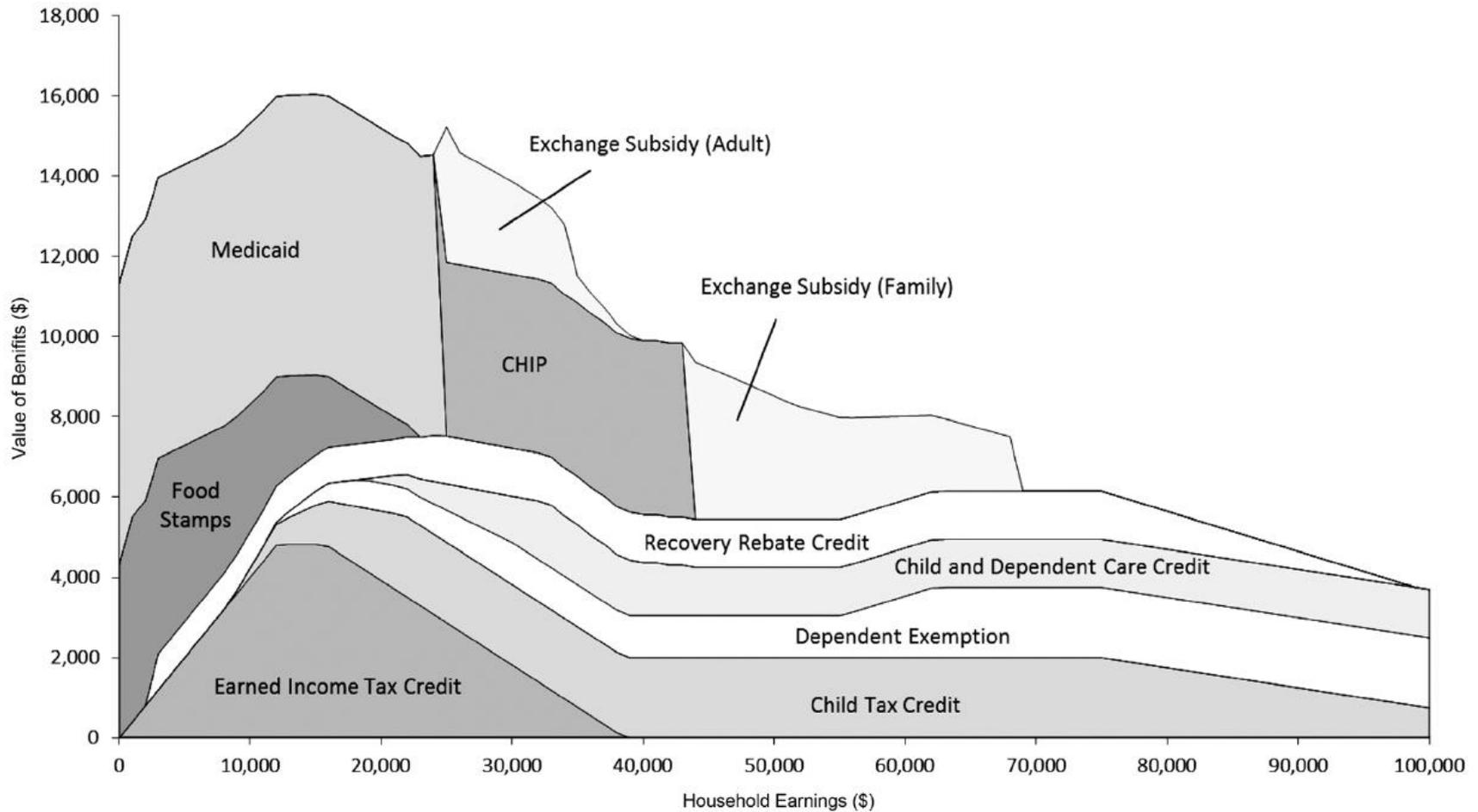
Summary so far...key facts

- A lifetime view of employment and hours
 - differences accentuated at particular ages and for particular demographic groups.
 - higher attachment to the labor market for higher educated, career length matters.
- Wages grow stronger and longer over the lifetime for higher educated
 - human capital accumulation during work is shown to be complementary to education (note Canadian SSP example)
 - human capital accumulation is essential to explain employment and wage profiles for those with more education.
- Other key facts include growth of high employment incomes and consequent impact on inequality

2. Measurement of effective incentives

- Precisely how is the policy likely to impact on the incentives facing the key players?
- e.g. overlapping taxes, tax credits and welfare benefits.
 - What are the ‘true’ effective tax rates on (labor) earnings?

Universally Available Tax and Transfer Benefits (US Single Parent with Two Children, 2008)

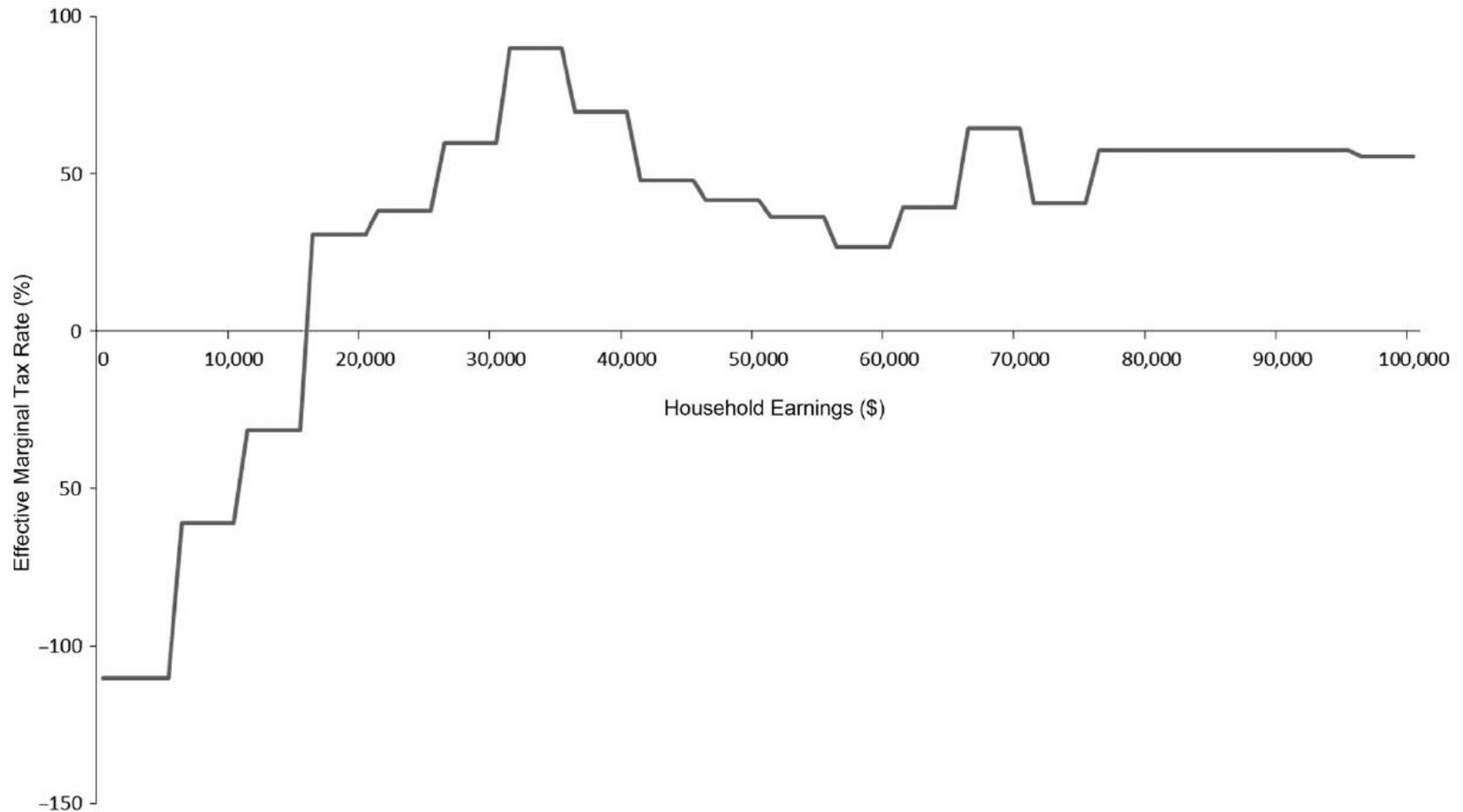


Source: Urban Institute (NTJ, Dec 2012).

Notes: Value of tax and value transfer benefits for a single parent with two children.

Effective Marginal Tax Rates

(US Single Parent with Two Children in Colorado, 2008)

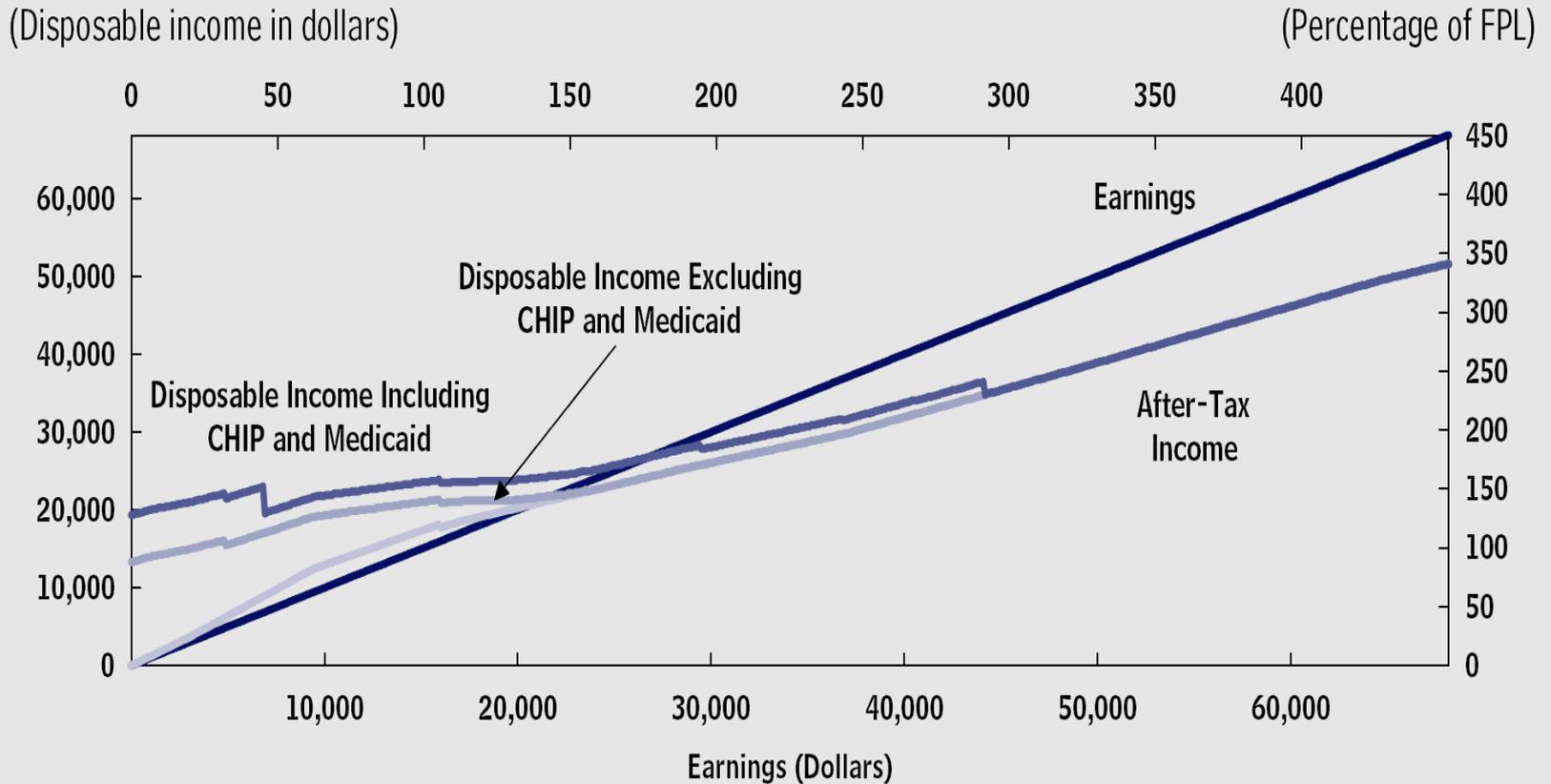


Source: Urban Institute (NTJ, Dec 2012).

Notes: Value of tax and value transfer benefits for a single parent with two children.

Budget Constraint for Single Parent: US 2011

Relationship Between Earnings and Disposable Income for a Hypothetical Single Parent with One Child in 2012



Source: Congressional Budget Office based on survey data from the Census Bureau.

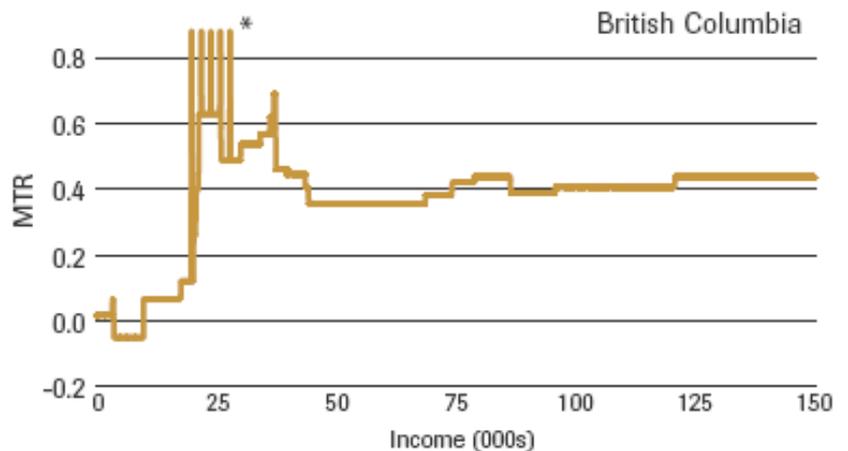
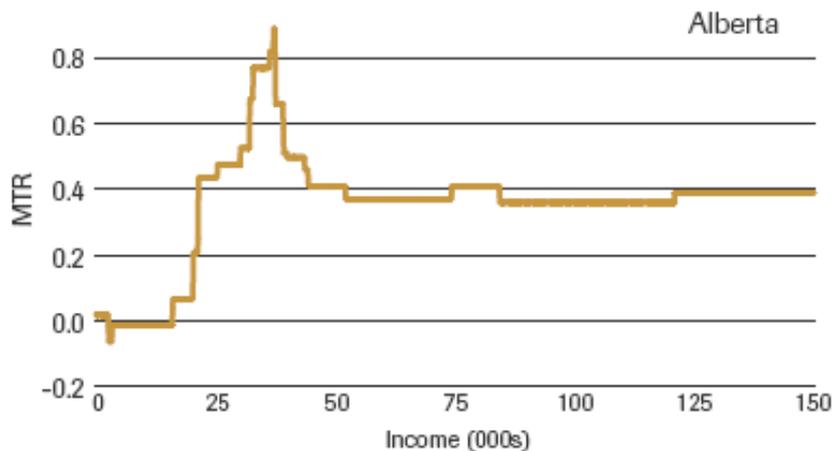
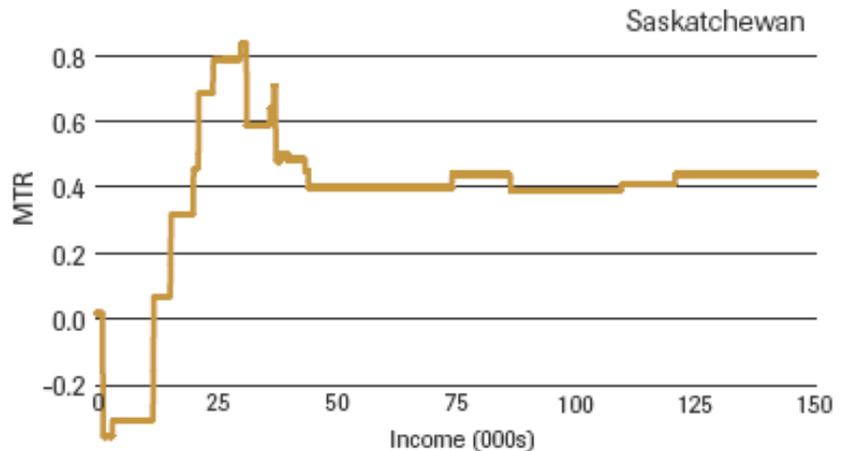
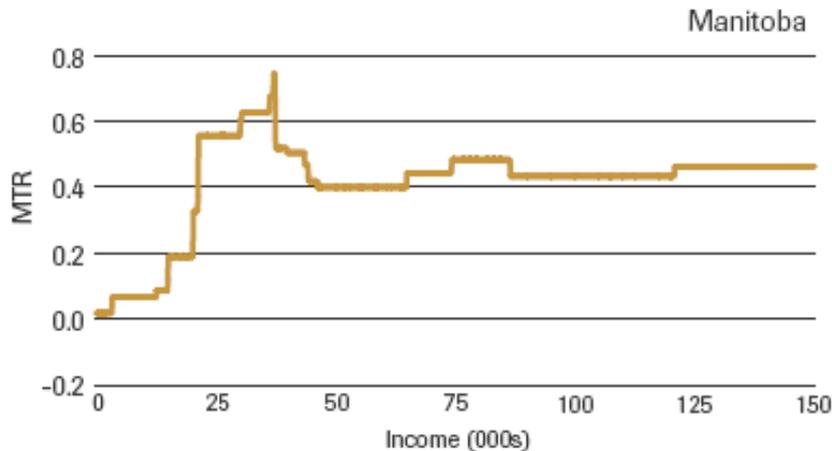
Source: CBO (2012).

Notes: This example assumes that the taxpayer files as a head of household, has one child, and qualifies for both the EITC and the CTC.

Effective Tax Rates in Canada

- In addition to the personal tax system and social assistance, Canada has a complex system of overlapping refundable tax credits.
- Refundable tax credits:
 - Canada Child Tax Benefit / National Child Benefit / Provincial supplements
 - GST/HST refundable sales tax credit
 - Universal Child Care Benefit: (\$100/month for age<6)
 - Working Income Tax Benefit
- Social assistance:
 - for BC, a \$200/month earnings exemption with 100% crowd out of benefits for earnings above that level.
- Impact of clawbacks of tax credits =>

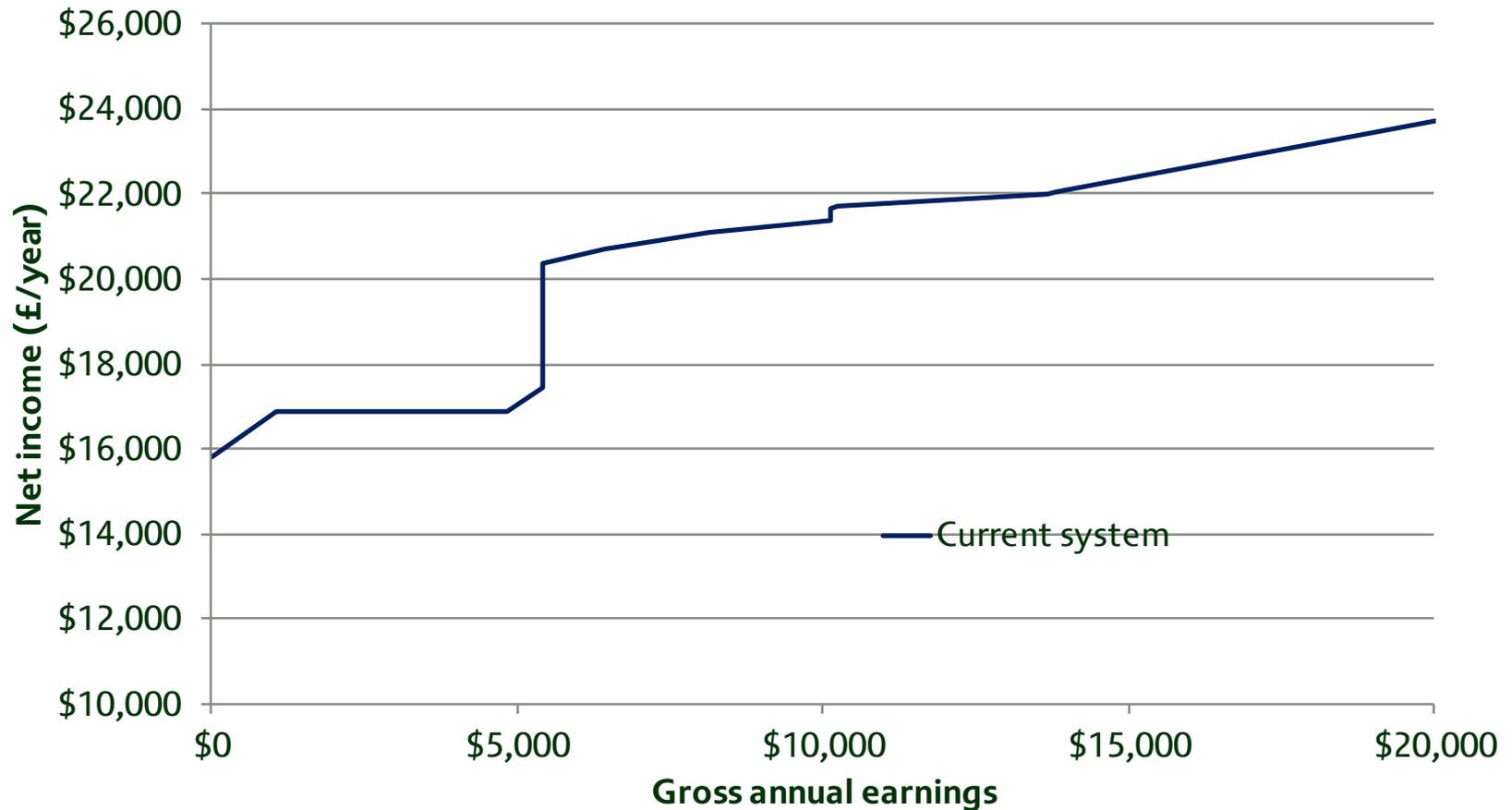
Effective Marginal Tax Rates: Canada



Source: Milligan (2009).

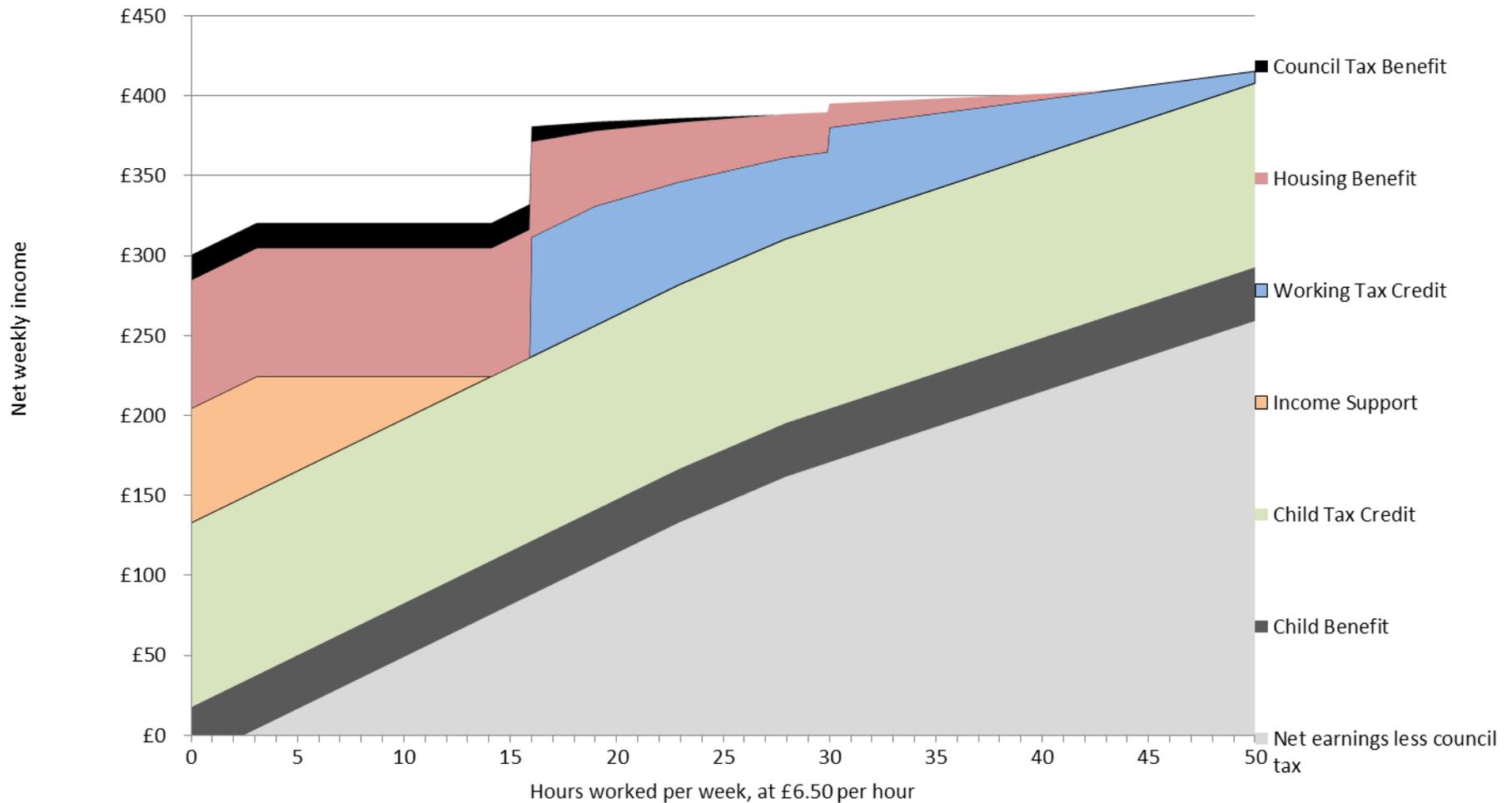
Notes: Married Family with Two Children. Marginal tax rate including refundable tax credits.
* infinite marginal tax rate due to health premiums

Budget Constraint for Single Parent: UK 2011



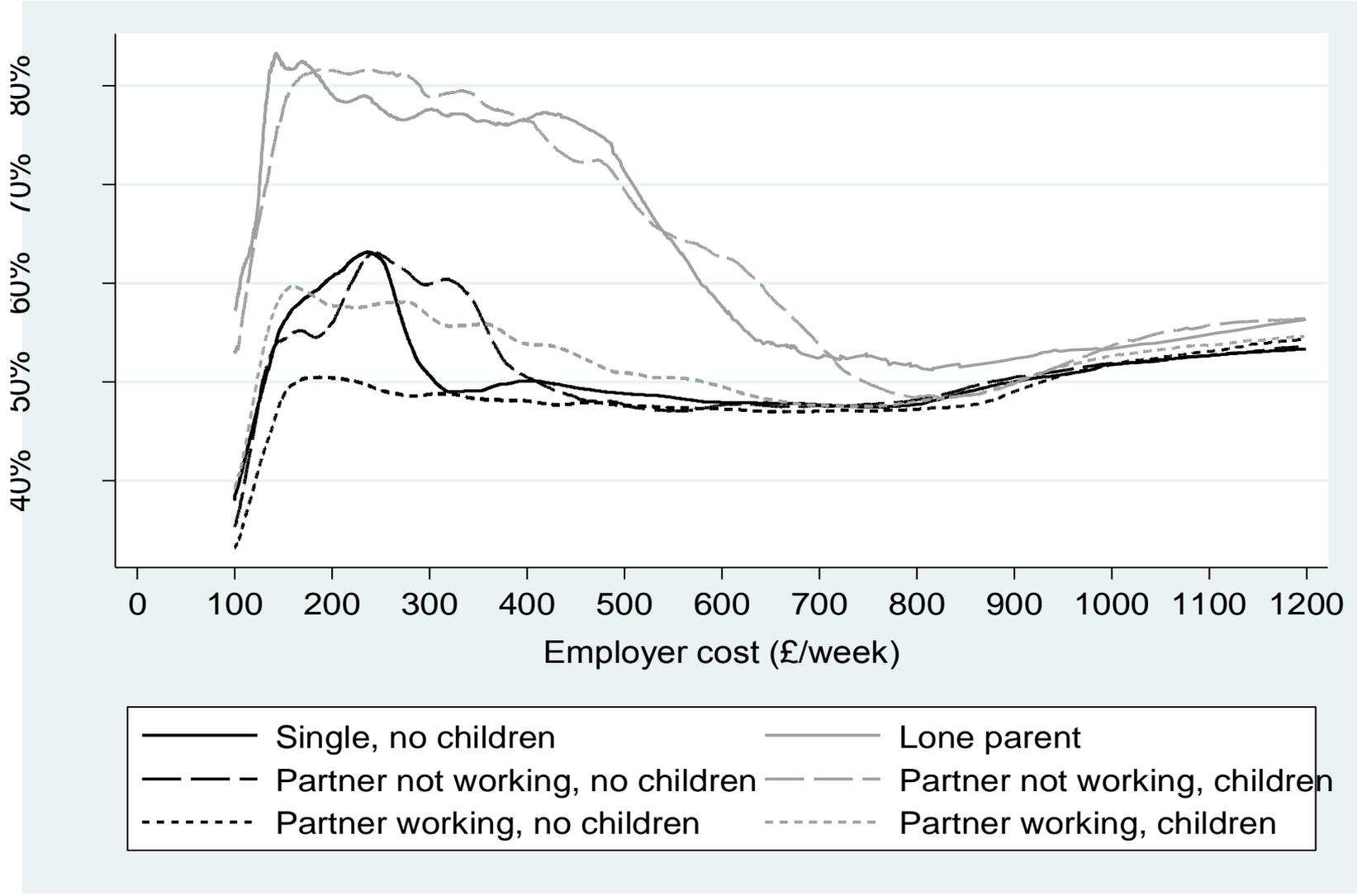
Notes: wage £6.50/hr, 2 children, no other income, £80/wk rent. Ignores council tax and rebates

Budget Constraint for Single Parent: UK 2011

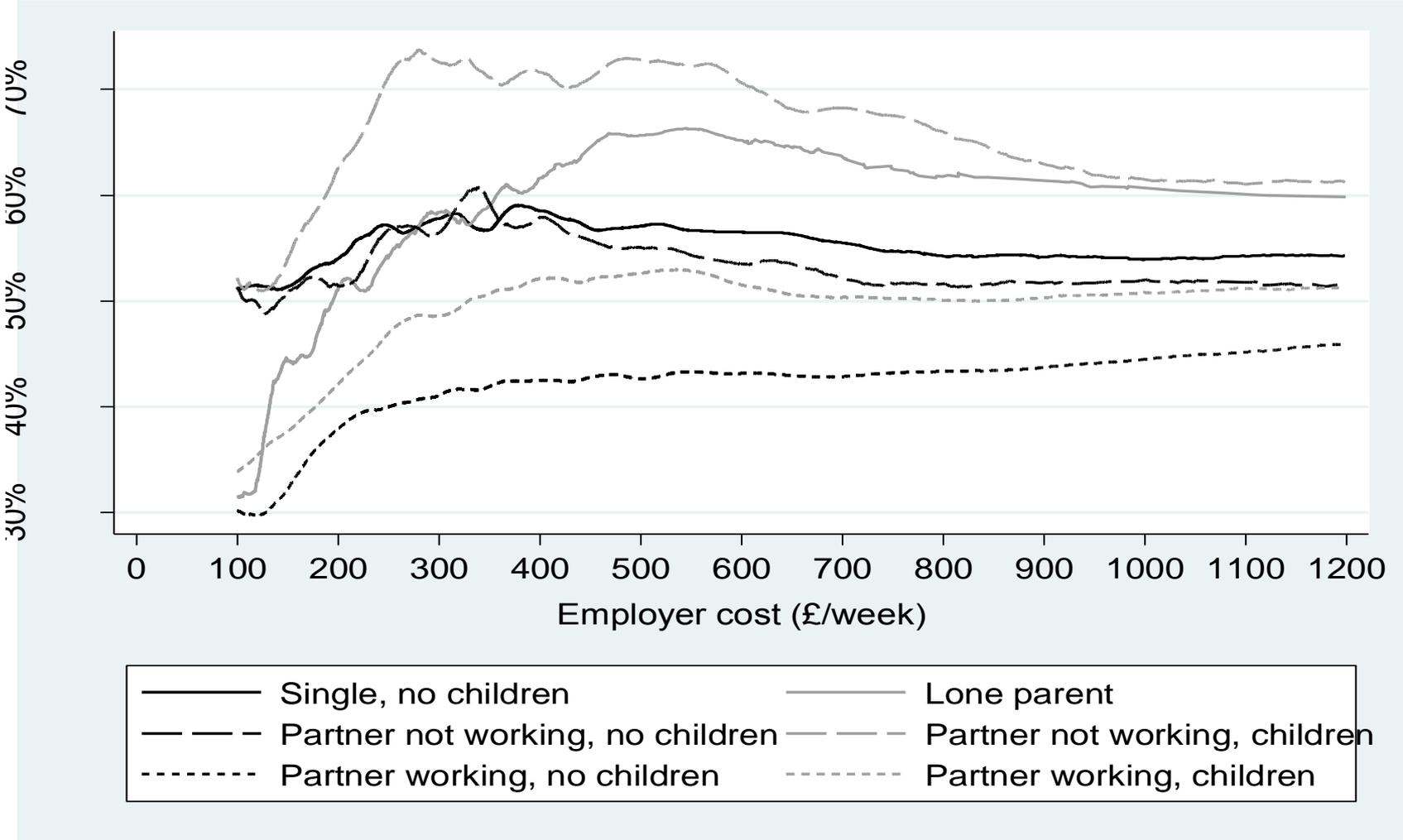


Notes: wage £6.50/hr, 2 children, no other income, £80/wk rent. Ignores council tax and rebates

Average EMTRs for different family types: UK 2011



Average PTRs for different family types: UK 2011

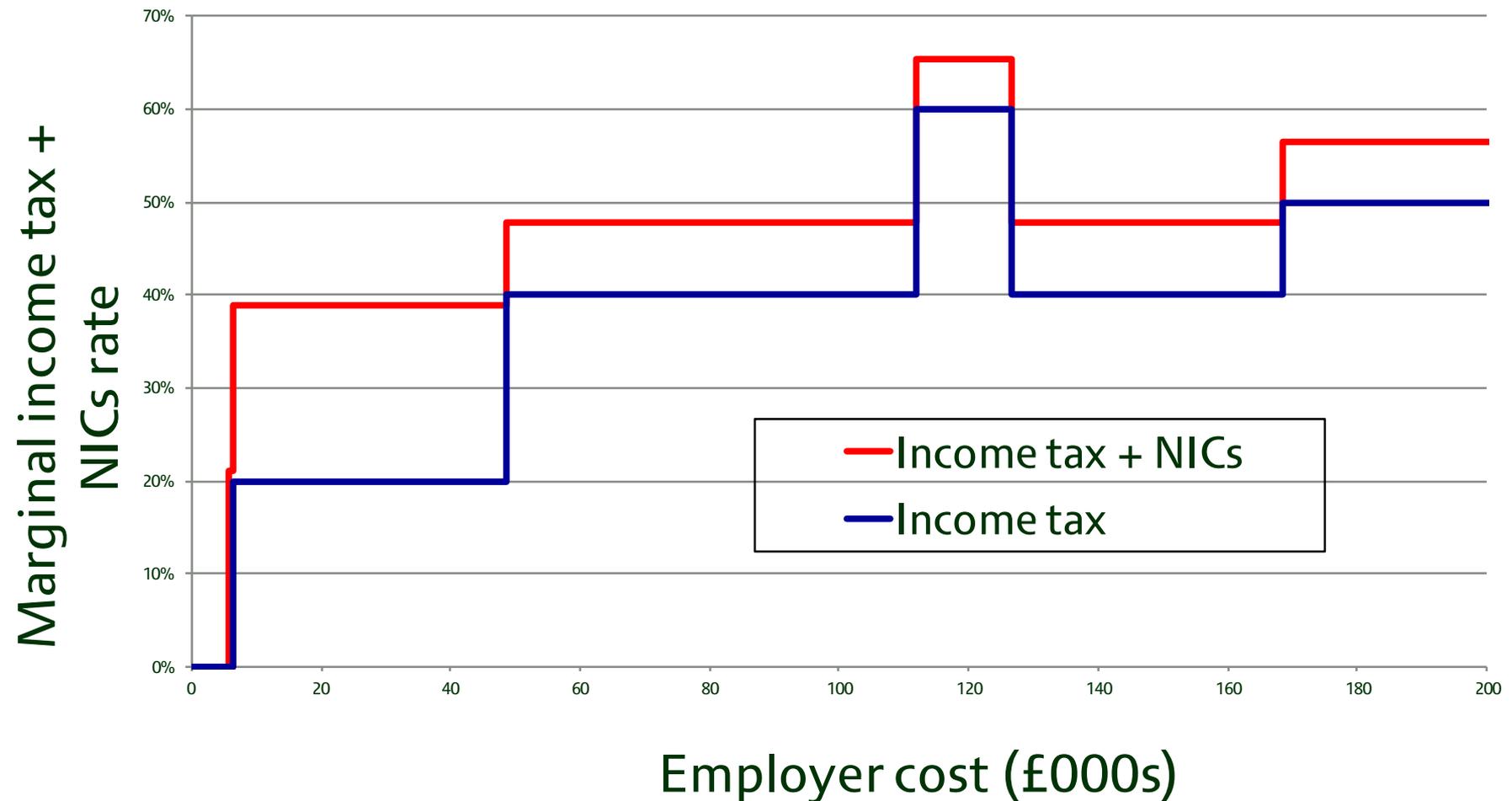


Tax rates on lower incomes.....

- The main defects in current welfare/benefit systems
- *Participation tax rates* at the bottom remain very high in UK and elsewhere
- *Marginal tax rates* in the UK are well over 80% for low income working families because of phasing-out of means-tested benefits and tax credits
- Complex cocktail of different overlapping benefits, tax credits and taxes.
- What about tax rates on top incomes?

Marginal rates for higher earners

Income tax schedule for those aged under 65, UK 2010–11

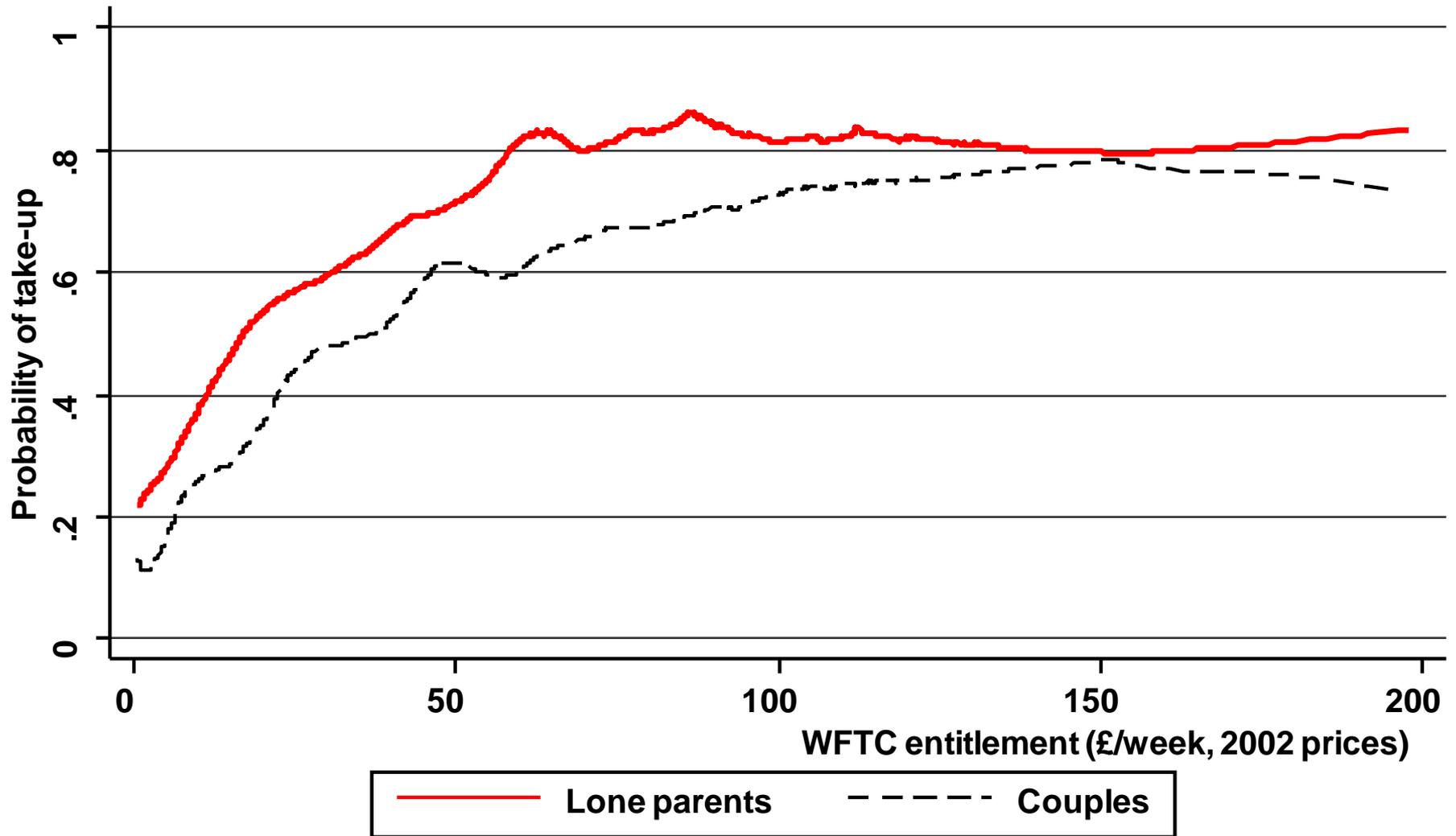


Source: Mirrlees Review (2011)

3. The importance of information and complexity

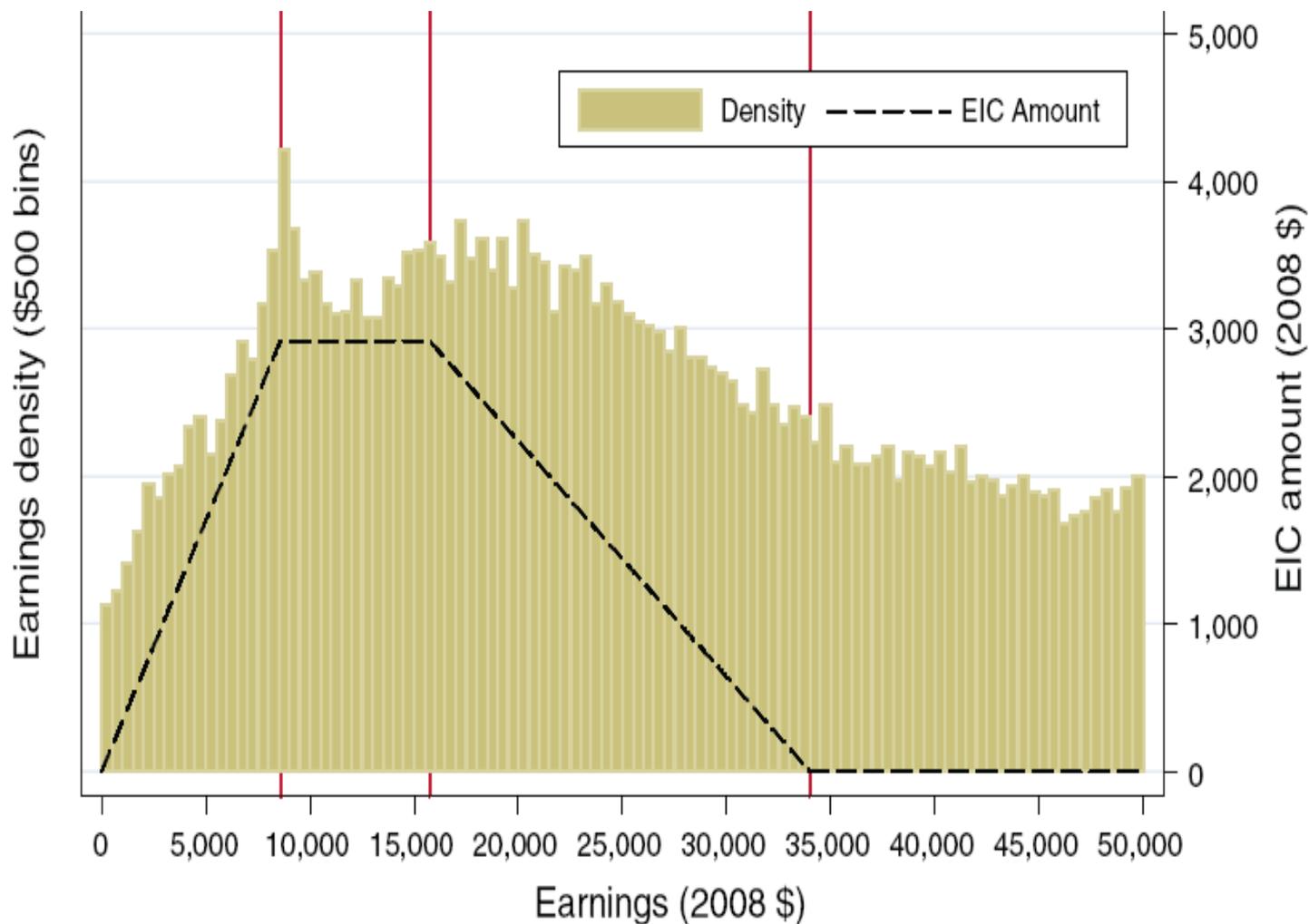
- How is the policy likely to be understood by the agents involved?
- For example, how 'salient' are the various tax incentives in the policy reform?
 - 'Take-up' among eligible families
 - 'Bunching' at kink points

Variation in tax credit 'take-up' with value of entitlement



Bunching at Tax Kinks and the EITC

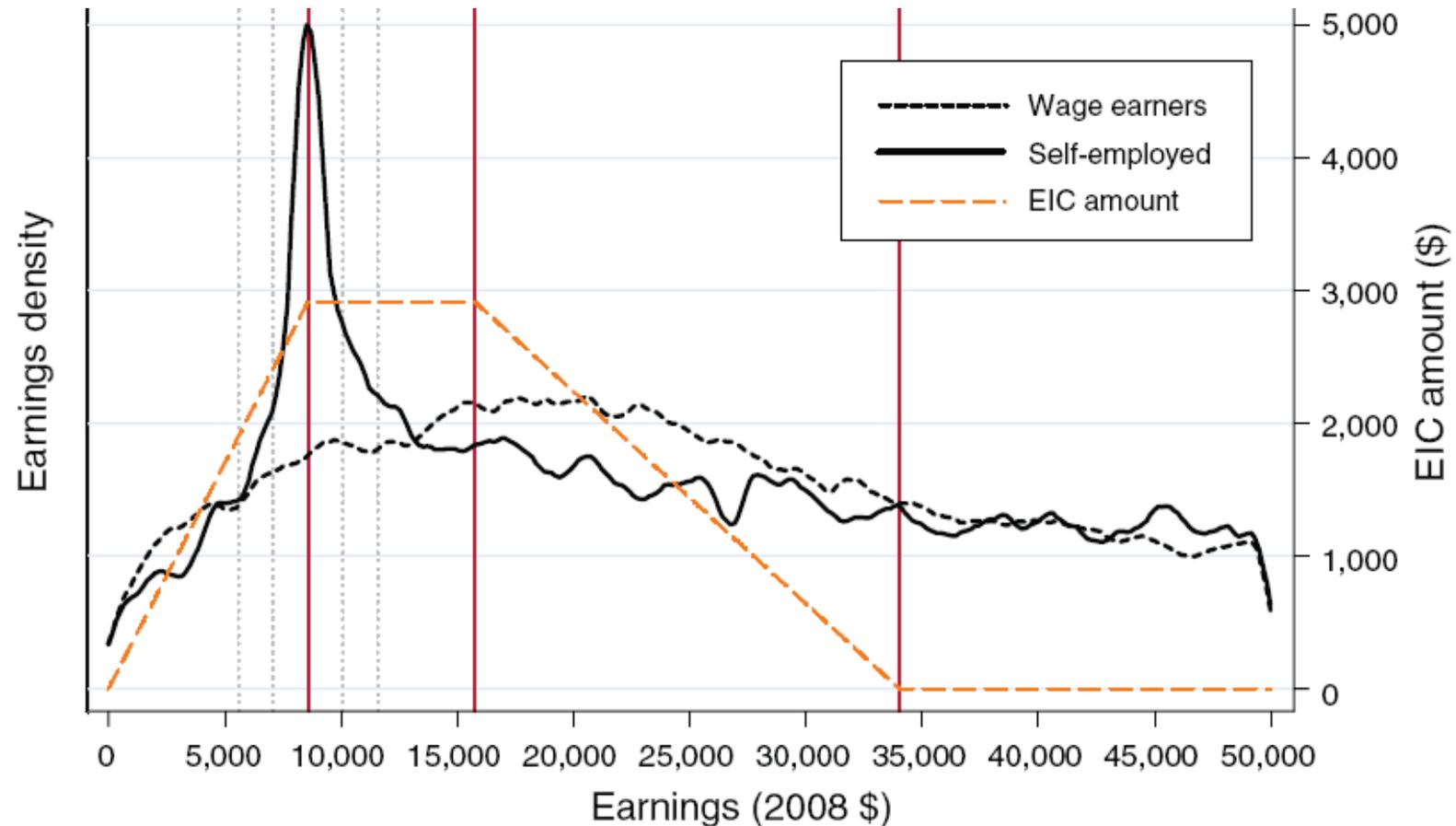
One child families: US



Source: Saez (2010)

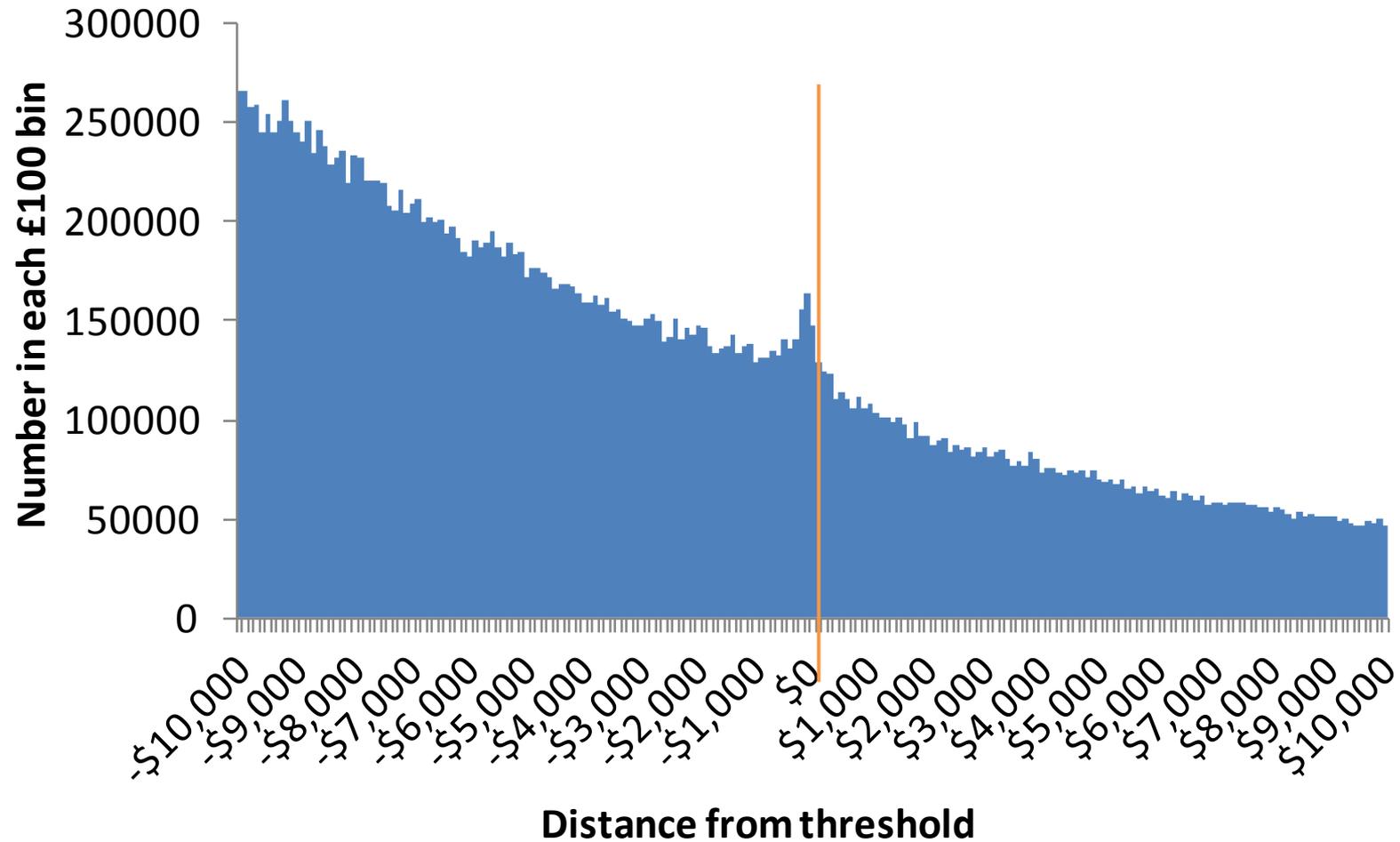
Bunching at Tax Kinks and the EITC

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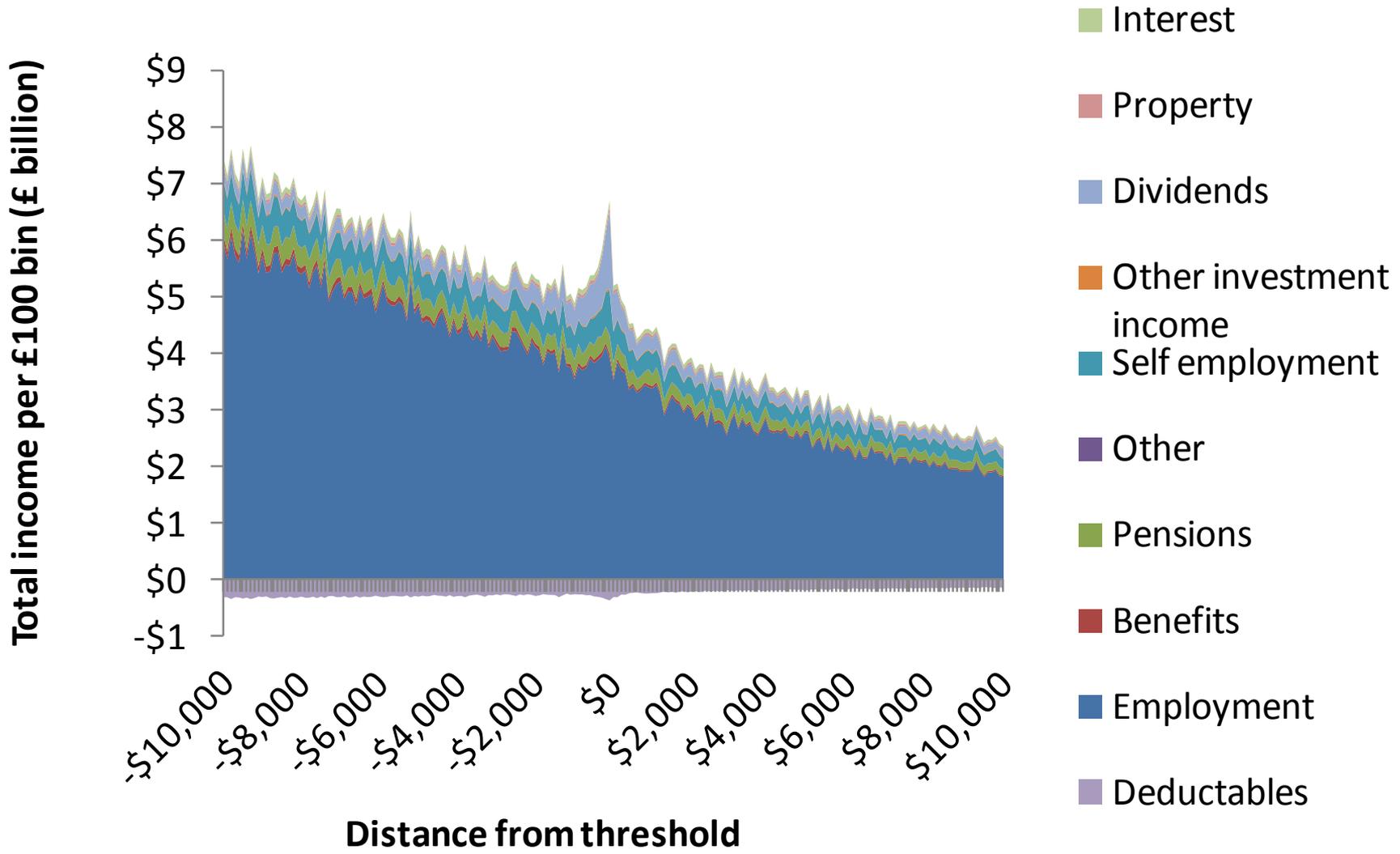


Source: Saez (2010)

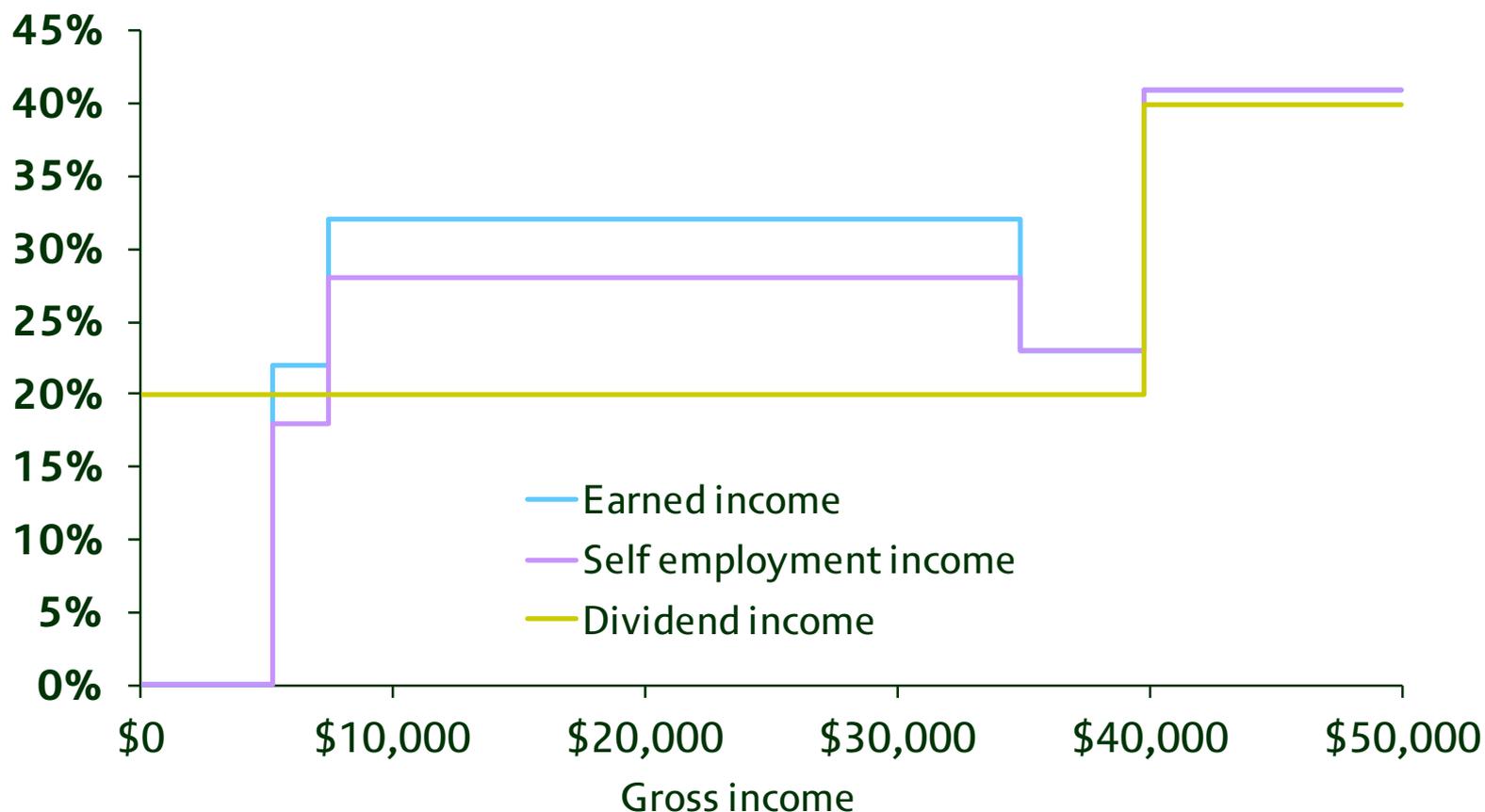
Bunching at the higher rate threshold, UK 2007–08



Composition of income around the higher rate tax threshold



Marginal tax rates by income level, UK 2007–08



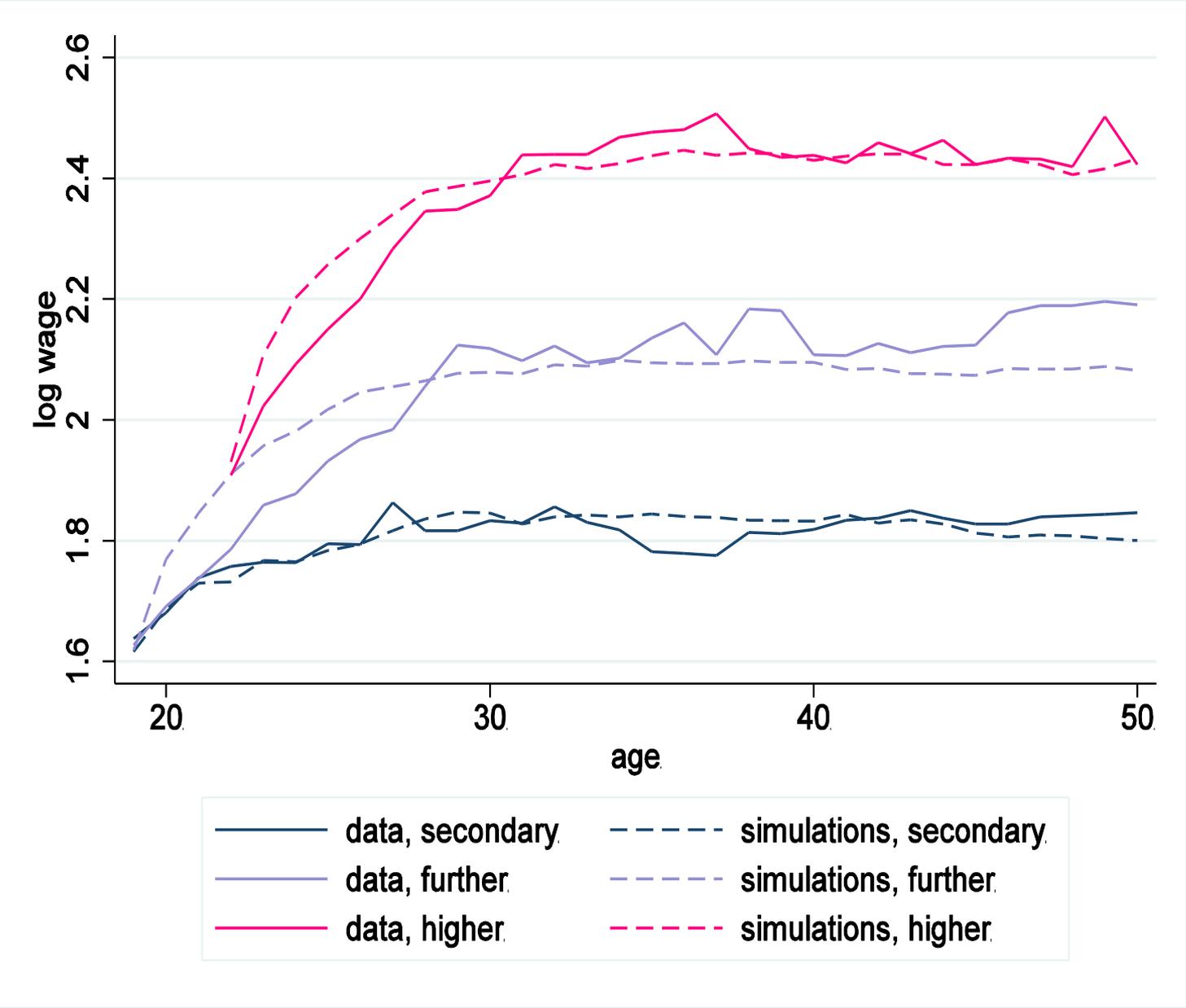
Note: assumes dividend from company paying small companies' rate. Includes income tax, employee and self-employed NICs and corporation tax.

4. Evidence on the size of responses

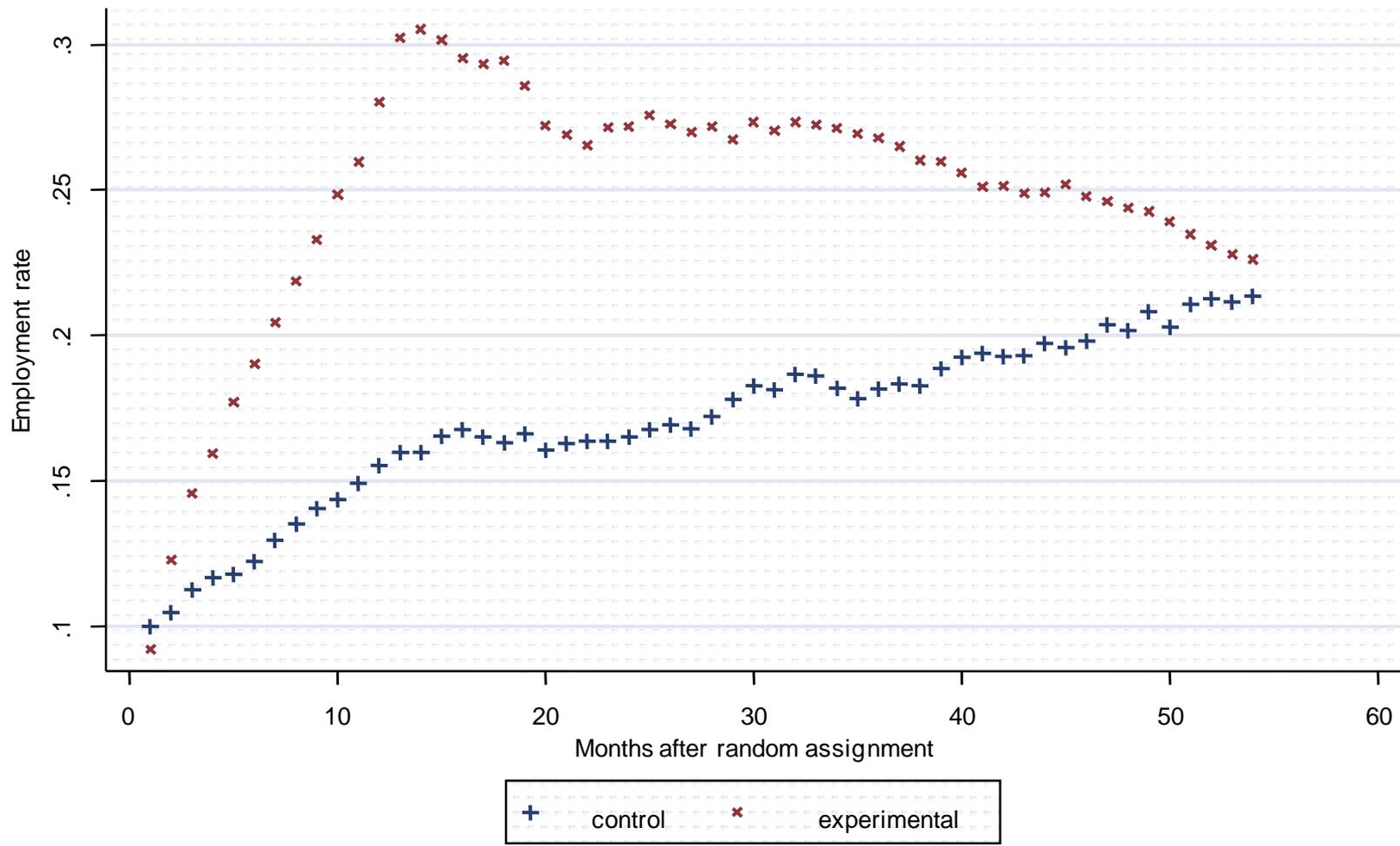
- This is where the rigorous econometric analysis of structure and causality comes into play
- Eclectic use of two approaches:
 1. Quasi-experimental/RCT/reduced form evaluations of the impact of (historic) reforms
 - robust but limited in scope
 2. A 'structural' estimation based on the pay-offs and constraints faced by individuals and families
 - comprehensive in scope and allow simulation, but fragile.
 - need to account for life-cycle facts, effective tax rates, and salience/stigma.

- Incentive effects: labour supply elasticities vary in key ways by education group, family type and age. No single number!
 - large at specific points in the working life and for specific types
- Experience matters: especially for those with more than basic formal education - often only in full-time jobs – female wages
 - can explain ‘success’ of simpler simulations of reforms for low-wage workers – Canadian SSP

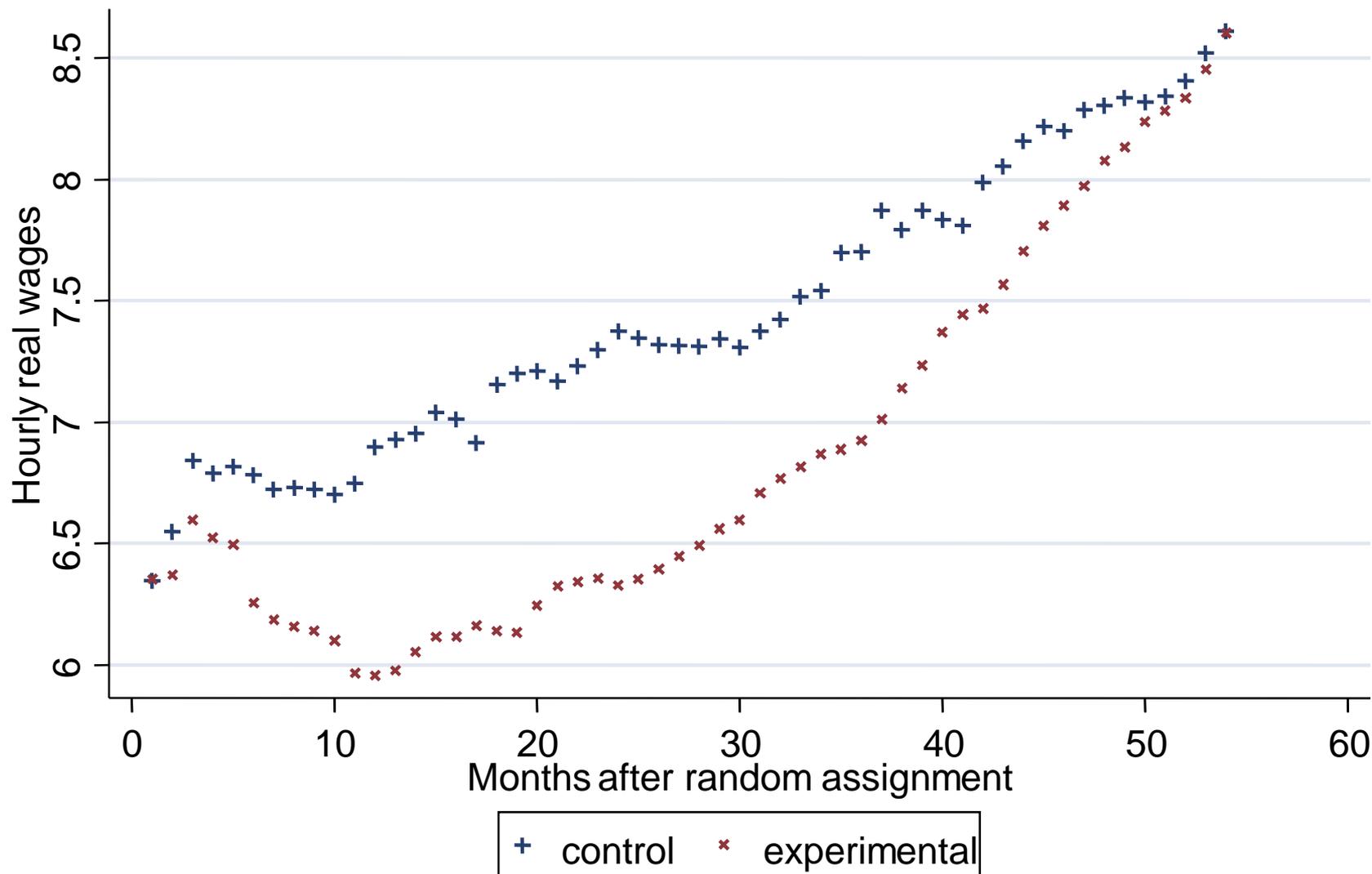
Wages by education and age – UK Women



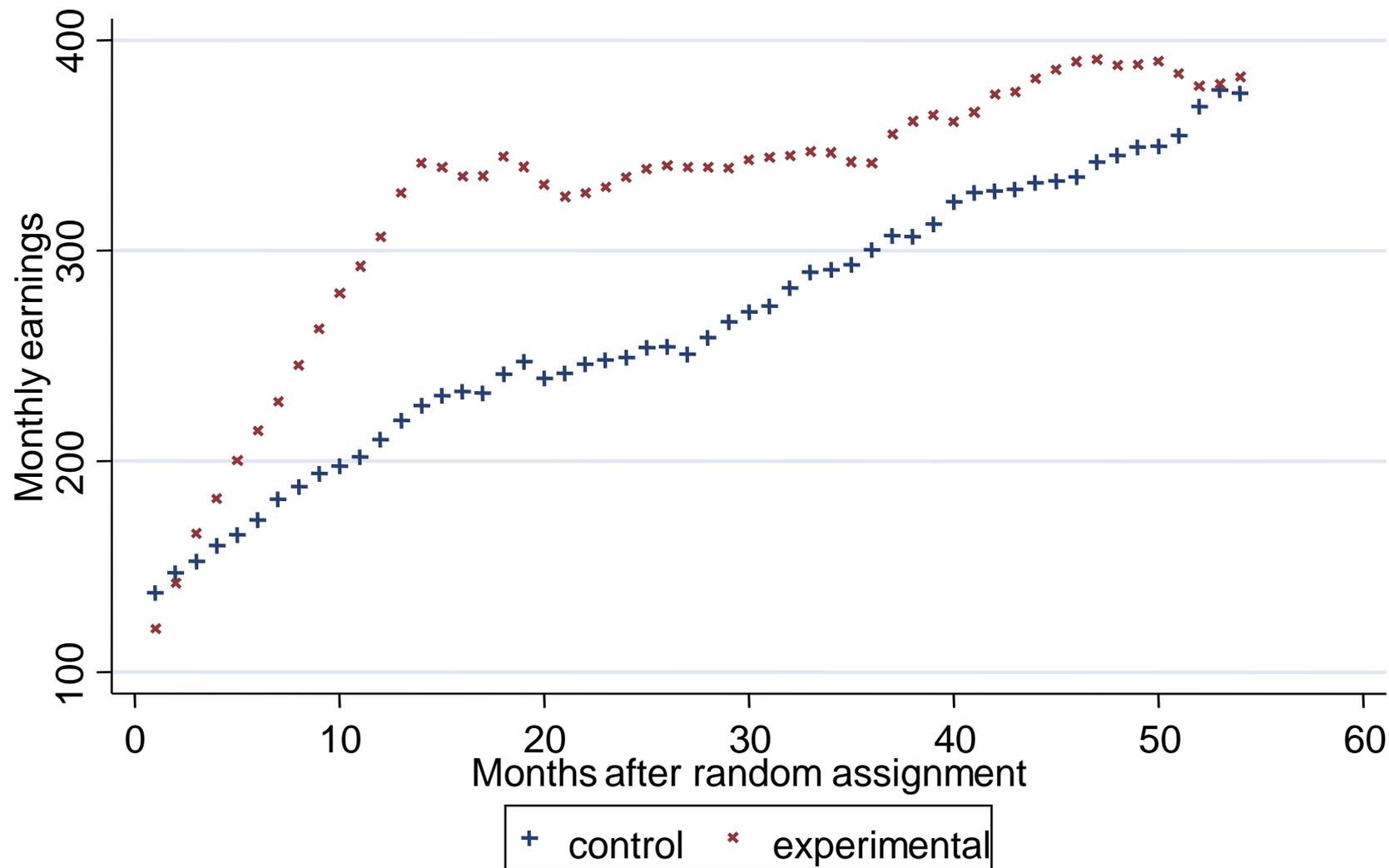
SSP: Employment Rate by months after RA



SSP: Hourly wages by months after RA



SSP: Monthly earnings by months after RA



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 - large at specific points in the working life and for specific types
- Experience matters: especially for those with more than basic formal education - often only in full-time jobs – female wages
 - can explain ‘success’ of simpler simulations of reforms for low-wage workers – Canadian SSP
- Education choices: a small but key impact of redistributive taxes
 - on return to education and on the insurance value of education
- Information, stigma and salience matter
 - larger responses for large reforms that are well understood
- Taxable income is responsive for self-employed and top earners
 - but often reflects tax shifting and avoidance
- More specifics =>

Younger Workers

- Taxes reduce labour supply
 - substitution effects are generally larger than income effects
- and, especially for low earners,
 - responses are larger at the extensive margin—employment
 - than at the intensive margin—hours of work.
- These responses are largest for
 - women where the youngest child is young school-age
 - extensive elasticities around .9 and intensive around .5
- For college educated elasticities are low ($\approx .15$) at young ages

Human capital effects

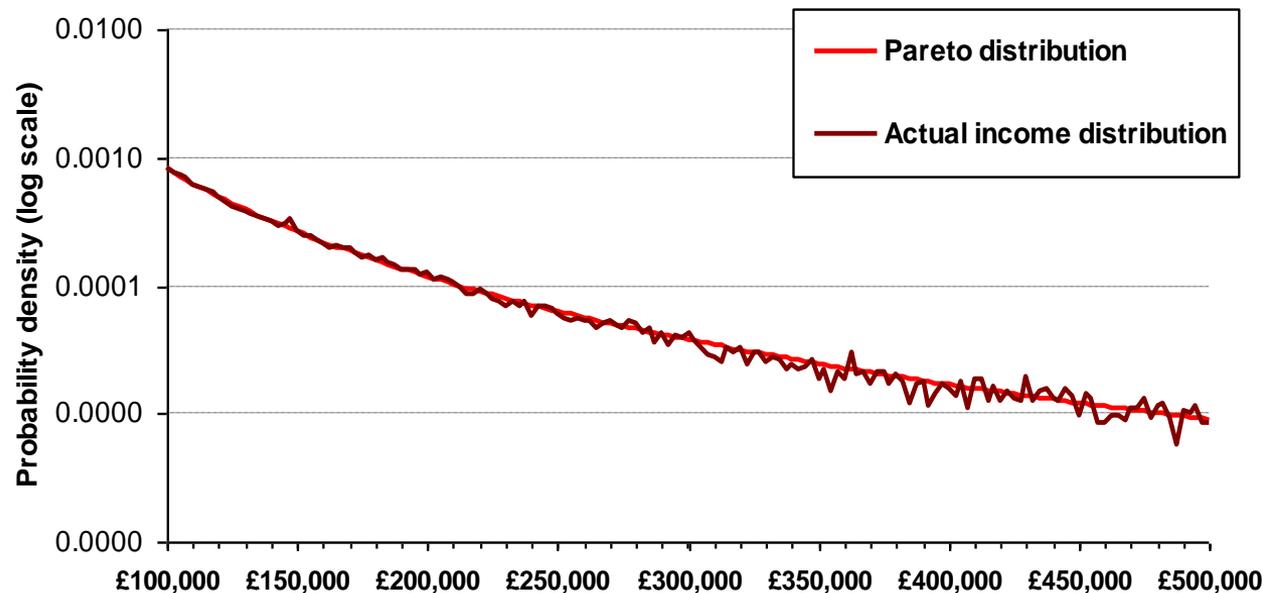
- Two forms of human capital
 - schooling and on-the-job investment
- The hourly wages of those with more education are higher, and grow faster and for longer into the working life
 - formal education complements experience capital
 - little experience pay-off for those with low initial skills (SSP)
- For educated young workers, employment generates valuable experience,
 - unlikely to respond to tax incentives during career,
 - taxes effect career choice, career length and retirement.

Older workers...

- Elasticities increase for 60+ age group for both men and women
 - appear to remain higher for women at both margins
 - elasticities increase as mandatory retirement restrictions/earnings tests are lifted and actuarial fairness introduced
 - joint retirement matters above pure incentives.
- Lower educated are responsive to incentives in disability insurance, social security and medical insurance.
- Higher educated more responsive too at these ages
 - larger density of workers around the work/no-work margin
 - wage and wealth effects become important.
- Elasticities are sizable but do not appear to explain all the recent rises in employment at older ages, at least in UK and US.

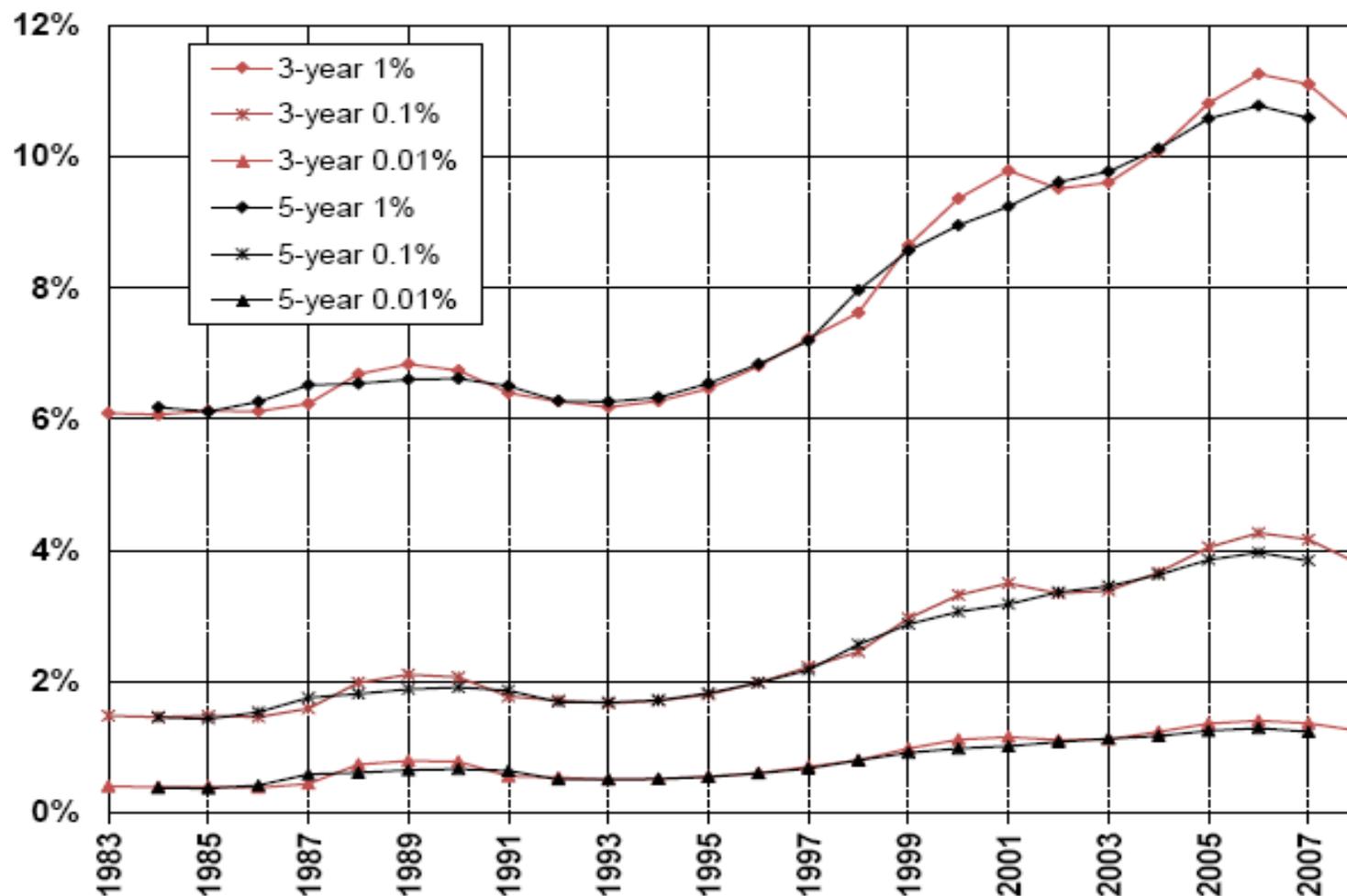
Finally, Taxable income...for top earners

- Captures additional avoidance and tax shifting responses
 - the ‘elasticity’ can be expected to fall as the tax base broadens
- For a given tax base we can get an idea of the Laffer rate, the revenue maximising rate, for the top bracket at least
 - $1/[1 + \text{taxable income elasticity } (e) * \text{Pareto parameter } (a)]$



- ‘a’ around 1.67 and ‘e’ around .45 for UK; Mirrlees (2011).
- ‘e’ reliable?, ignores a variety of dynamic and structural issues.

Income top shares, Canada 1982 - 2009



Source: Veal (2012)

Note: "Individual" refers to "taxfiler". Source: Author's calculations based on special order results provided to him by Statistics Canada using the Longitudinal Administrative Database.

Five messages emerge:

- First, it is important to take a ‘lifetime’ view
 - key points in the working life where tax incentives matter.
- Second, must account for interactions between taxes and welfare
 - effective tax rates depend on incentives in the welfare system, taxes on employers as much as in the personal tax system.
- Third, fixed costs, information costs and stigma are important
 - responses at the extensive margin differ from intensive margin
 - take-up among eligibles is costly.
- Fourth, accounting for human capital investment matters
 - educational investments enhance human capital at work
 - incentives for educational investments influenced by taxes.
- Finally, taxable income captures avoidance/shifting opportunities.

5. Implications for efficient redesign of tax policy

- **Current systems are** unnecessarily complicated and induce too many people not to work or to work too little.
- **Target work incentives** **where they are most effective**
 - simulations in Mirrlees (2011) show key increase in work/earnings
 - reducing means-testing and improving the flows into work for lower education mothers and maintaining work for those aged 55+.
- **Integrate overlapping benefits** - a single integrated benefit
 - Mirrlees (2011) - 'ifs' and 'universal credit' reforms.
- **Reduce disincentives at key margins for the educated**
 - enhancing working lifetime and the career earnings profile
 - simulations in BDMS (2013) show significant on human capital.
- **Align tax rates at the margin** **across income sources**
- **Make better use of social insurance and welfare accounts.....**

The shape of the overall reform package:

- Reforms to the income tax / benefit rate schedule
 - introduce a single integrated benefit
 - apply lessons from empirical evidence on response elasticities
- Broaden VAT base
 - VAT on financial services, food and clothing
- Capture excess returns and rents
 - RRA(TtE) or EET where possible – neutrality across assets
 - TEE limited largely to interest bearing accounts, housing?
- Pensions - some additional incentive to lock-in savings
 - twist implicit retirement incentives to later ages
- Align tax rates across sources of income
 - Forms of remuneration, capital income, ..

Align Rates Across Sources of Income...

- Limits to tax rises at the top, but
 - base reforms - anti-avoidance, domicile rules, avoid revenue shifting =>
- Suitable alignment of personal and corporate tax rates can then:
 - equalise tax treatment of income derived from employment, self-employment and running a small company
 - reduce incentives to convert labour income into dividend income/capital gains
- Less need to rely on anti-avoidance measures

Using Evidence to Improve the Tax System

That's all for now!

- Considered the role of evidence in tax policy:
 1. Key margins of adjustment to reform
 2. Measurement of effective incentives
 3. The importance of information and complexity
 4. Evidence on the size of responses
 5. Implications for efficient redesign of tax policy
- <http://www.ifs.org.uk/mirrleesReview>