

# Empirical Evidence and Tax Reform

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MICSIM Workshop

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Richard Blundell

*University College London and Institute for Fiscal Studies*

Slide Presentation

# Empirical Evidence and Tax Reform

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- Focus here on the labour market, human capital and earnings tax reforms.
- Even before the recent crisis, governments around the EU faced pressure to increase employment and earnings.
- The current recession has added to pressure on government revenues.
- Ask two general questions:
  - What are the key margins where we might expect tax/welfare reform to have most impact on earnings and employment growth?
  - How has this changed in the light of the great recession?
- 1. Develop an empirical foundation for tax design and reform.
- 2. Use the *Mirrlees Review (2011)* as a running example.
- 3. Overview of main issues and prospects with current tax systems.

# Summary overview.....

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- Current systems remain unnecessarily complicated and induce too many people not to work or to work too little.
- Target work incentives where they are most effective
  - our simulations 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* - 'ifs' reforms.
- Reduce disincentives at key margins for the educated
  - enhancing working lifetime and the career earnings profile,
  - simulations show significant impact on human capital.
- Align tax rates at the margin across income sources
  - avoiding tax shifting opportunities.

- In this talk I draw loosely on four of my recent ‘post-Mirrlees’ studies:
  - *‘Labor Supply and the Extensive Margin’; AER 2011*
  - *‘Empirical Evidence and Tax Reform’; JEEA 2012*
  - *‘Hours of Work and the Optimal Taxation of Low Income Families’; ReStud 2012*
- Additional question: To what extent do dynamic ‘longer-run’ issues change our view of earnings tax reform?
  - *Labour Supply, Human Capital and Welfare Reform’; NBER 2013*

- Overall question: How should we assemble the empirical foundations for tax policy design?
- 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....
- What have we learned ... so far?
- Are the proposals still relevant post recession?

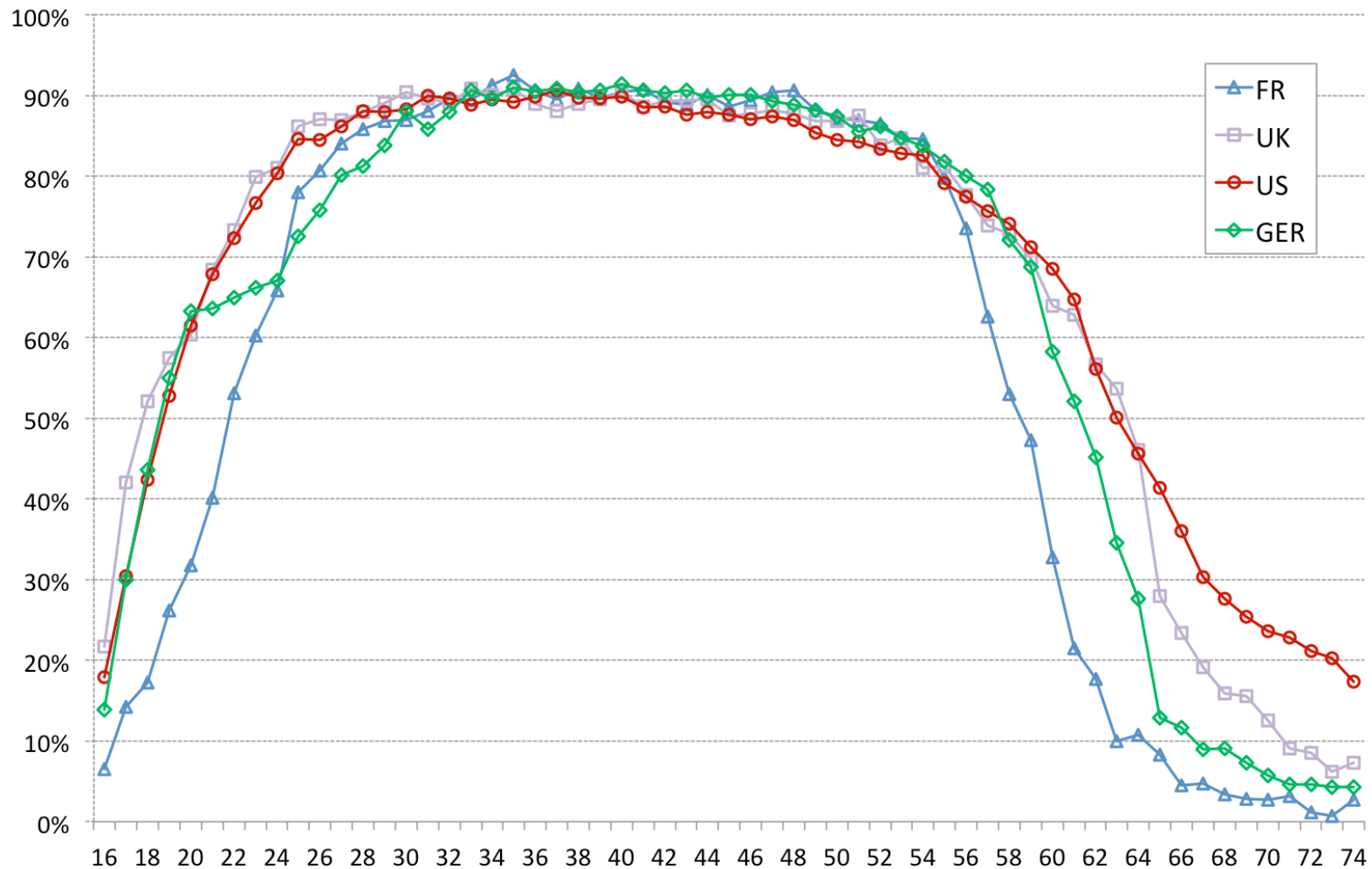
- There are common key points in the life-cycle where individuals are likely to be most responsive to effective tax and welfare incentives
  - Derives from comparative work across UK, US, FR and DE,
  - Labour market entry, parents of younger children and older workers.
- Human capital on the job is strongly complementary with formal education
  - Pay-off to on the job experience and training is low for those with lower educational qualifications.
- Effective tax rates can be extremely high for no good reason
  - Interactions of means-tested programmes at the bottom and employer/employee taxes /contributions in the middle.
- Effective budget constraints are complex and often poorly understood
  - Working age parents in France face the interaction of more than 17 different overlapping taxes, employer contributions and benefits – only 13 in UK!
- Differential rates on similar sources of remuneration induce significant tax shifting and avoidance.
- Let's take a run through the evidence..... The five steps....

# 1. Key margins of adjustment to reform

- A 'descriptive' analysis of the key aspects of observed behaviour
  - not 'causality' just the correlations in the data,
  - the key facts!
- Where is it that individuals, families and firms most likely to respond?
  - e.g. the margins of labour market adjustment.

# Key margins of adjustment

## Employment for men by age – FR, UK, US & GER 2007

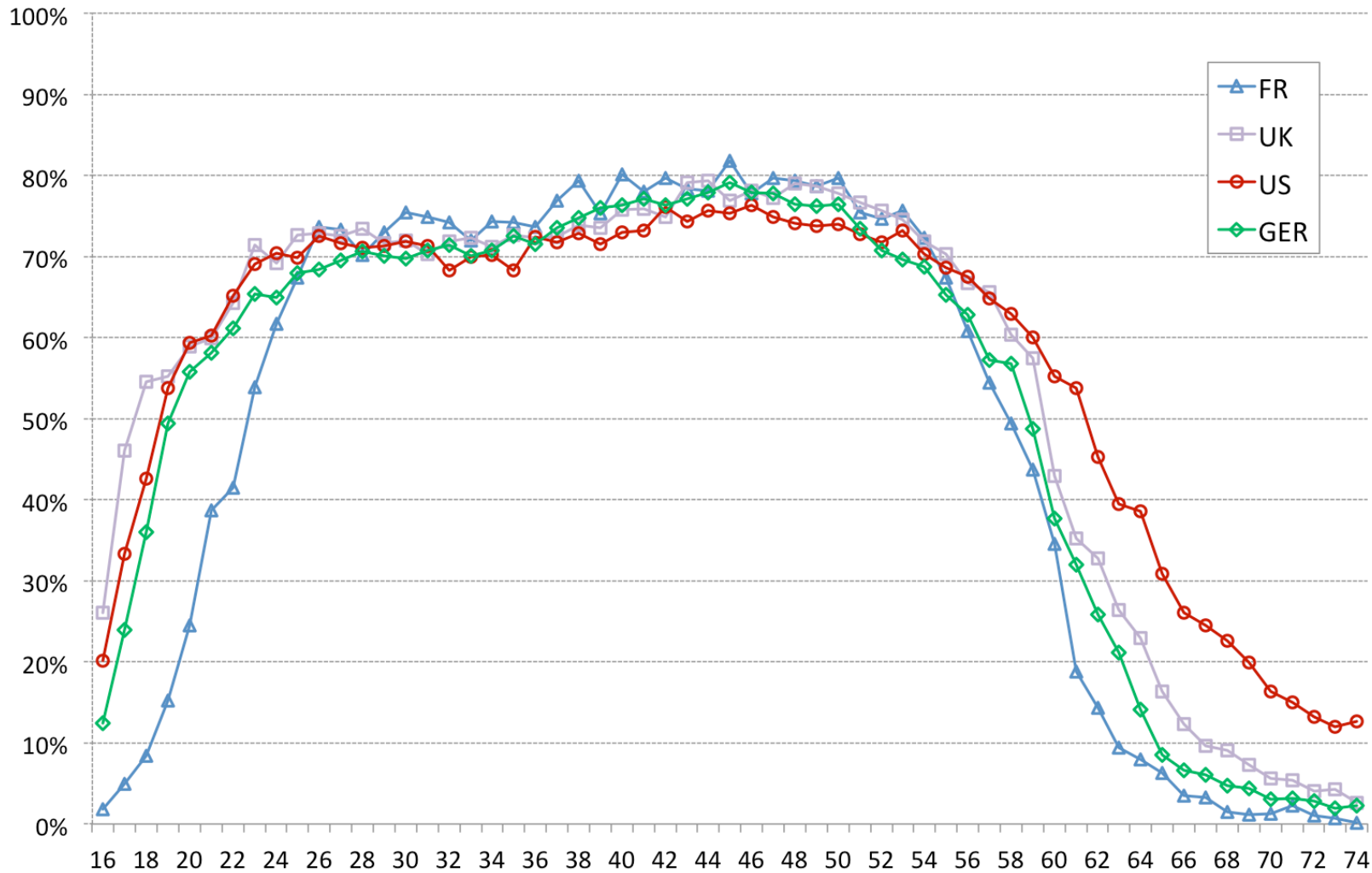


Blundell, Bozio, Laroque and Peichl (2014)

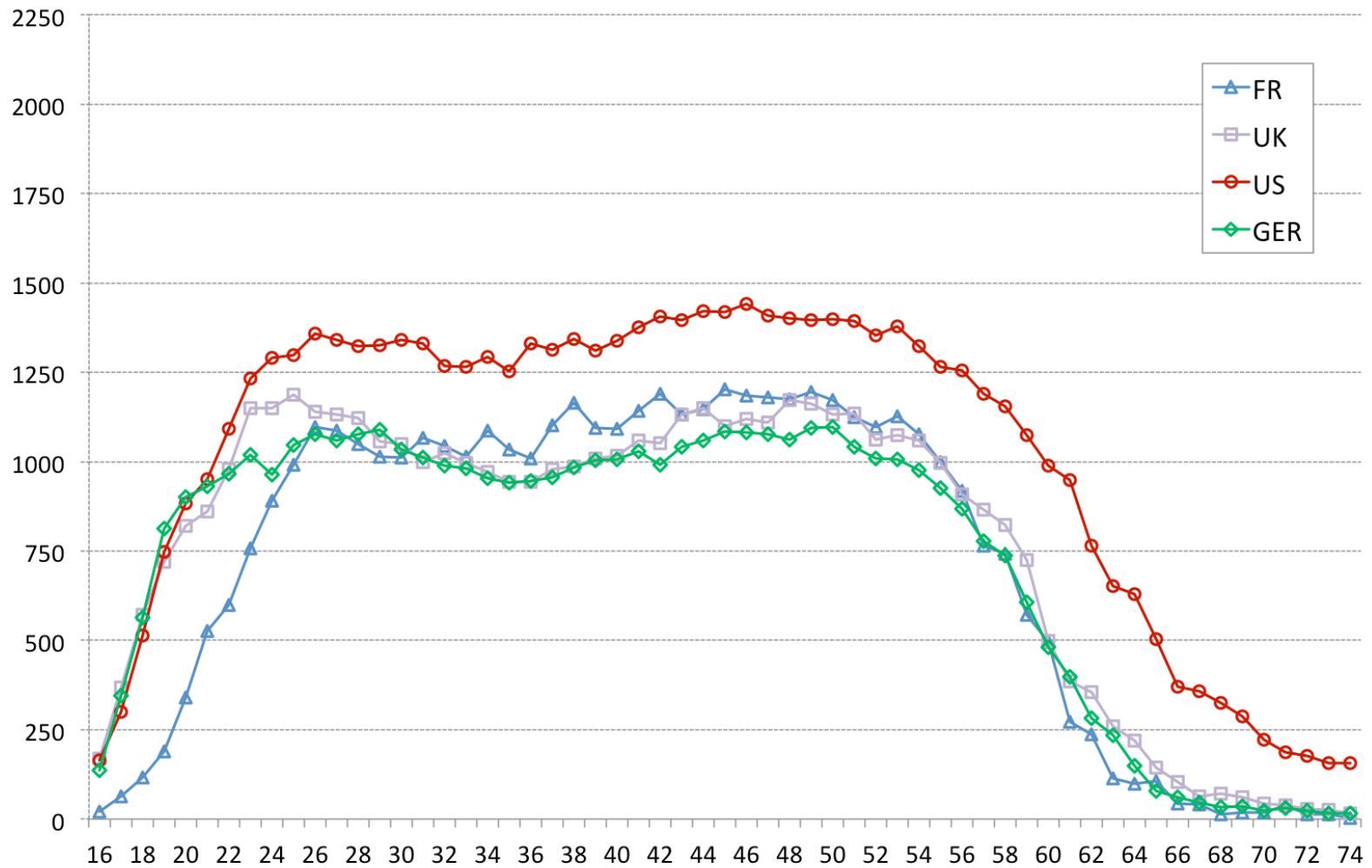


# and for women .....

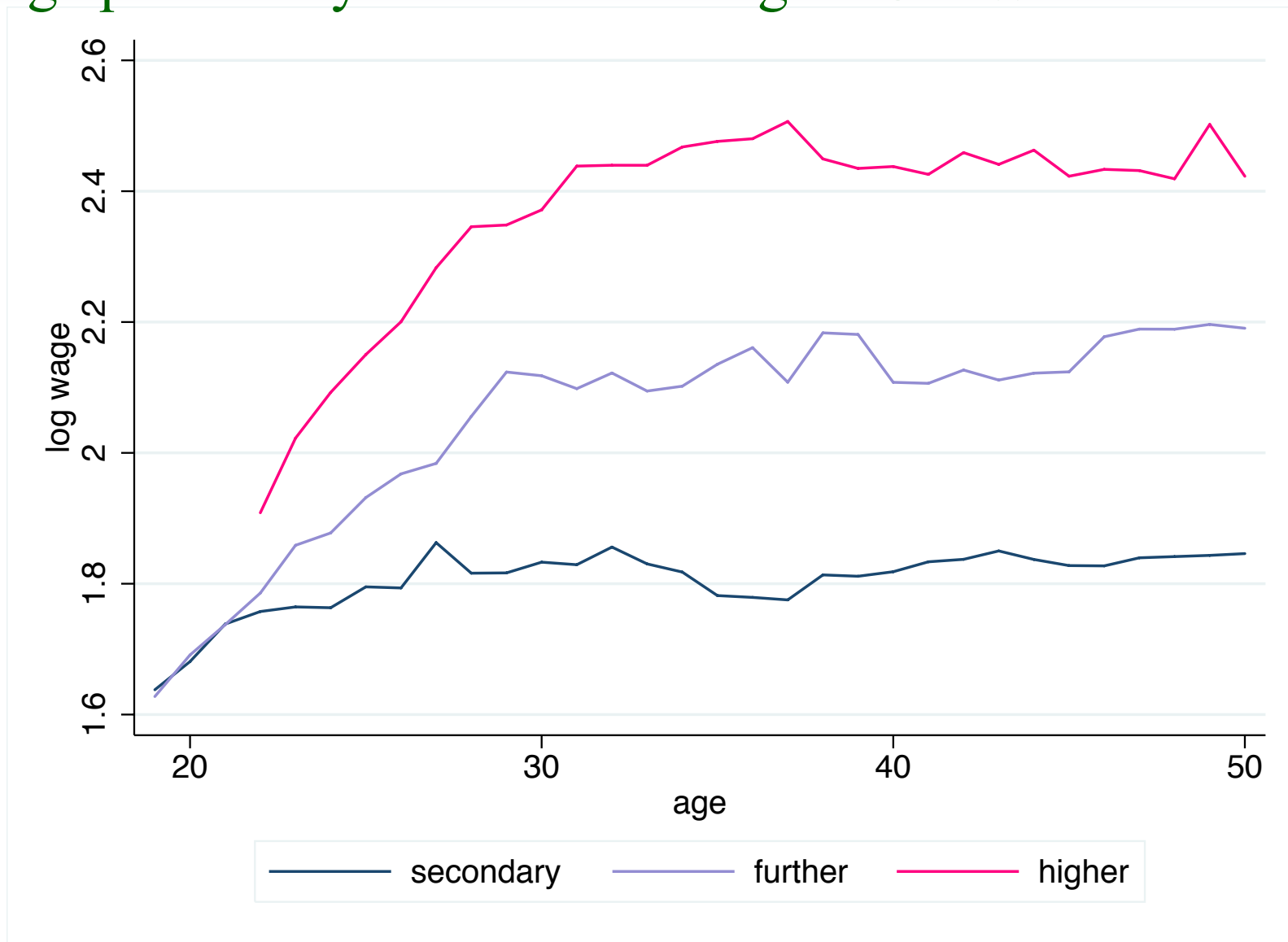
## Female Employment by age



# Female Hours by age

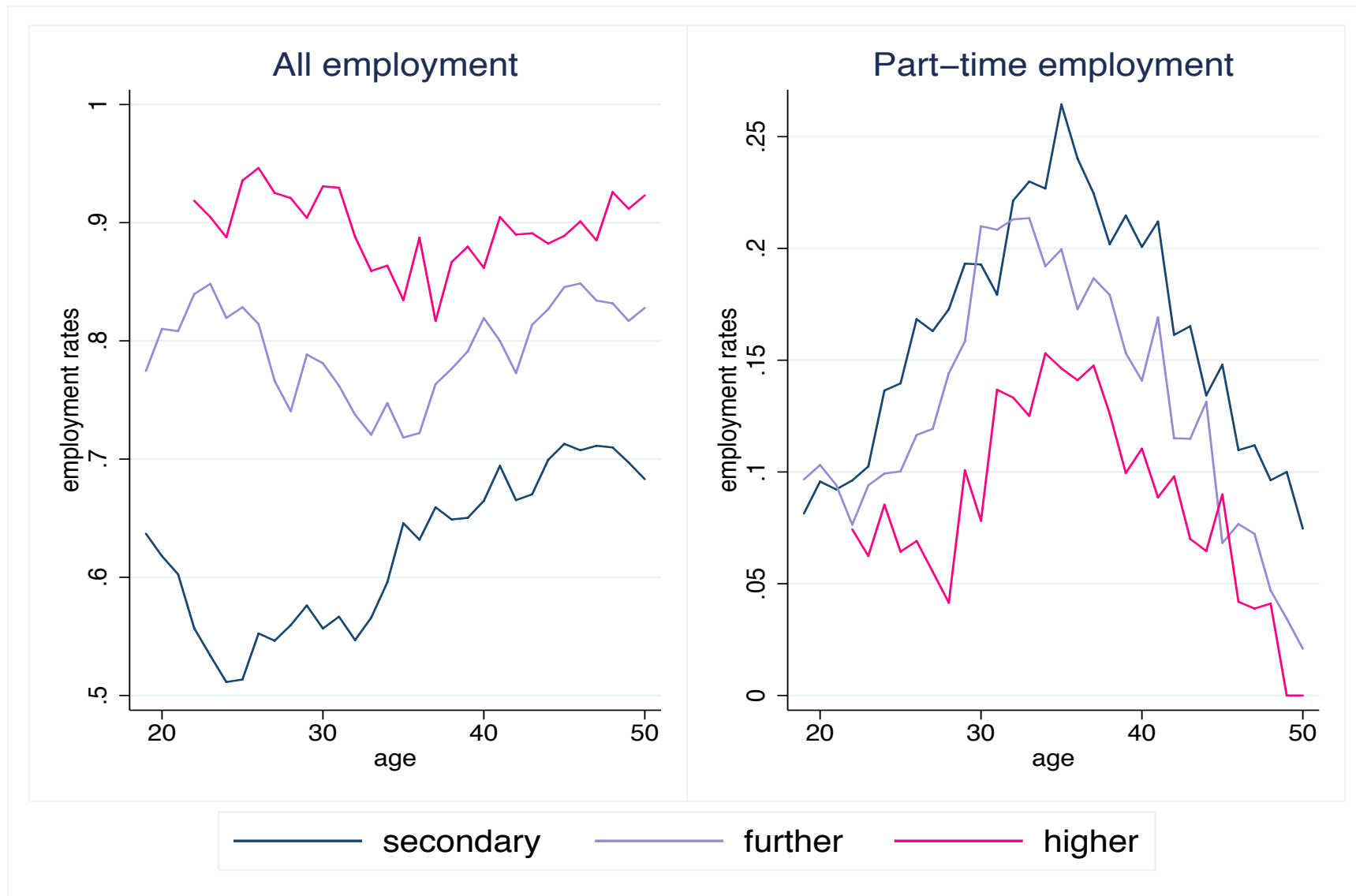


# Wage profiles by education and age – UK Women



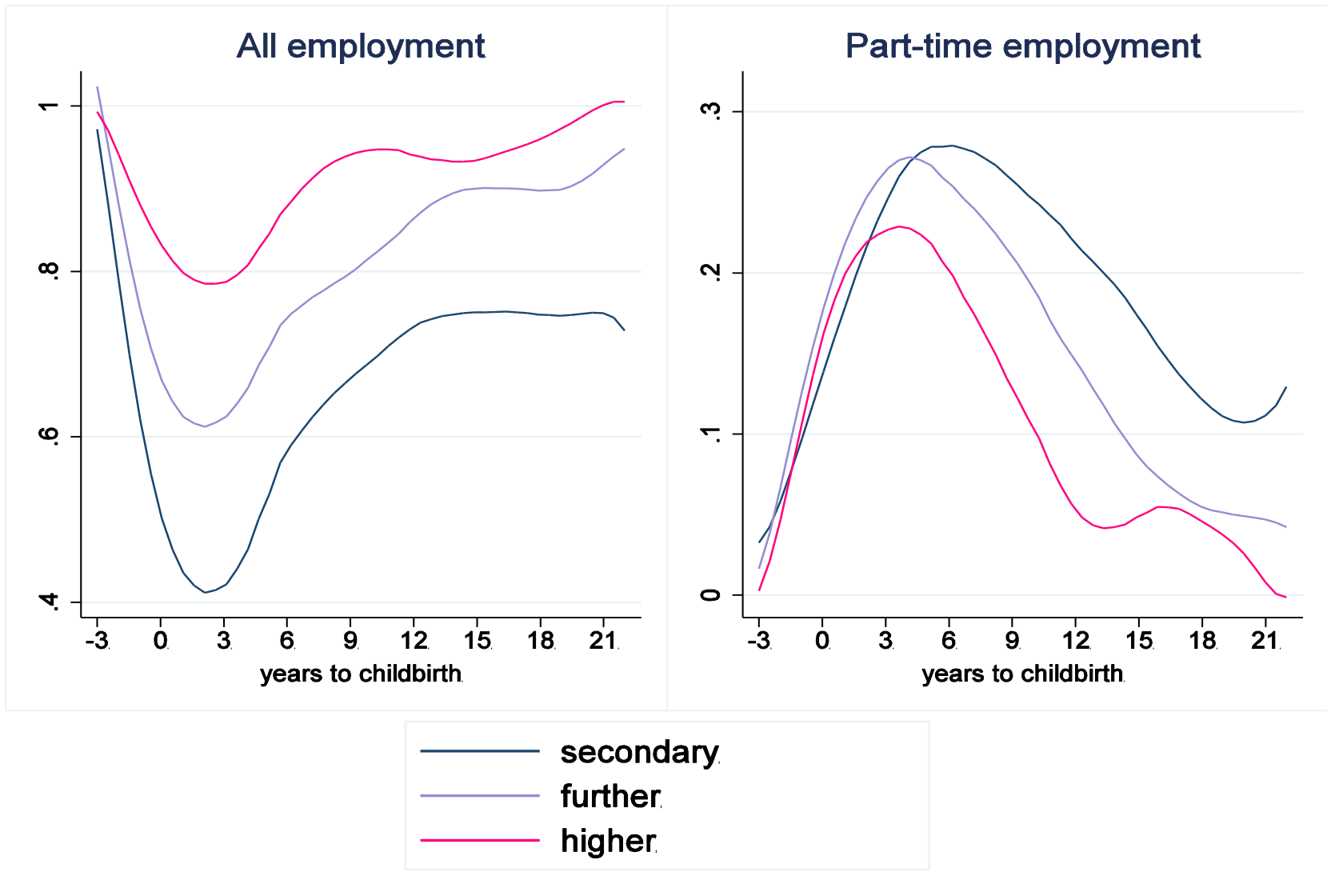
Source: Blundell, Dias, Meghir and Shaw (2013)

# Women's employment - UK



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

# Women's employment after childbirth - UK



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

# Summary so far...key facts

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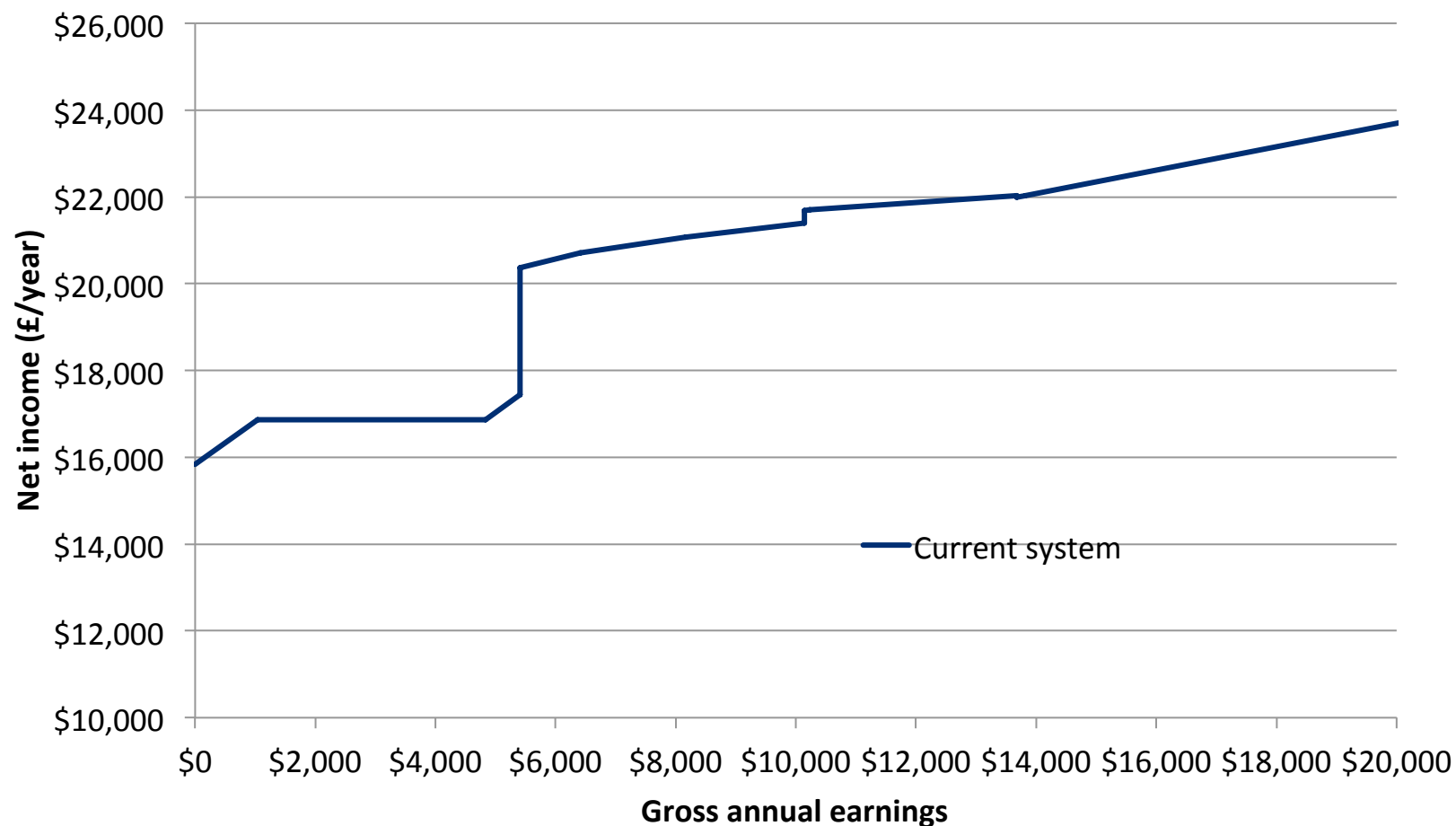
- A lifetime view of employment and hours
  - differences accentuated at particular ages and for particular demographic groups,
  - higher attachment to the labor market for higher educated, career length matters.
- Wages grow stronger and longer over the lifetime for higher educated
  - human capital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

## 2. Measurement of effective incentives

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- Precisely how do tax policies 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?

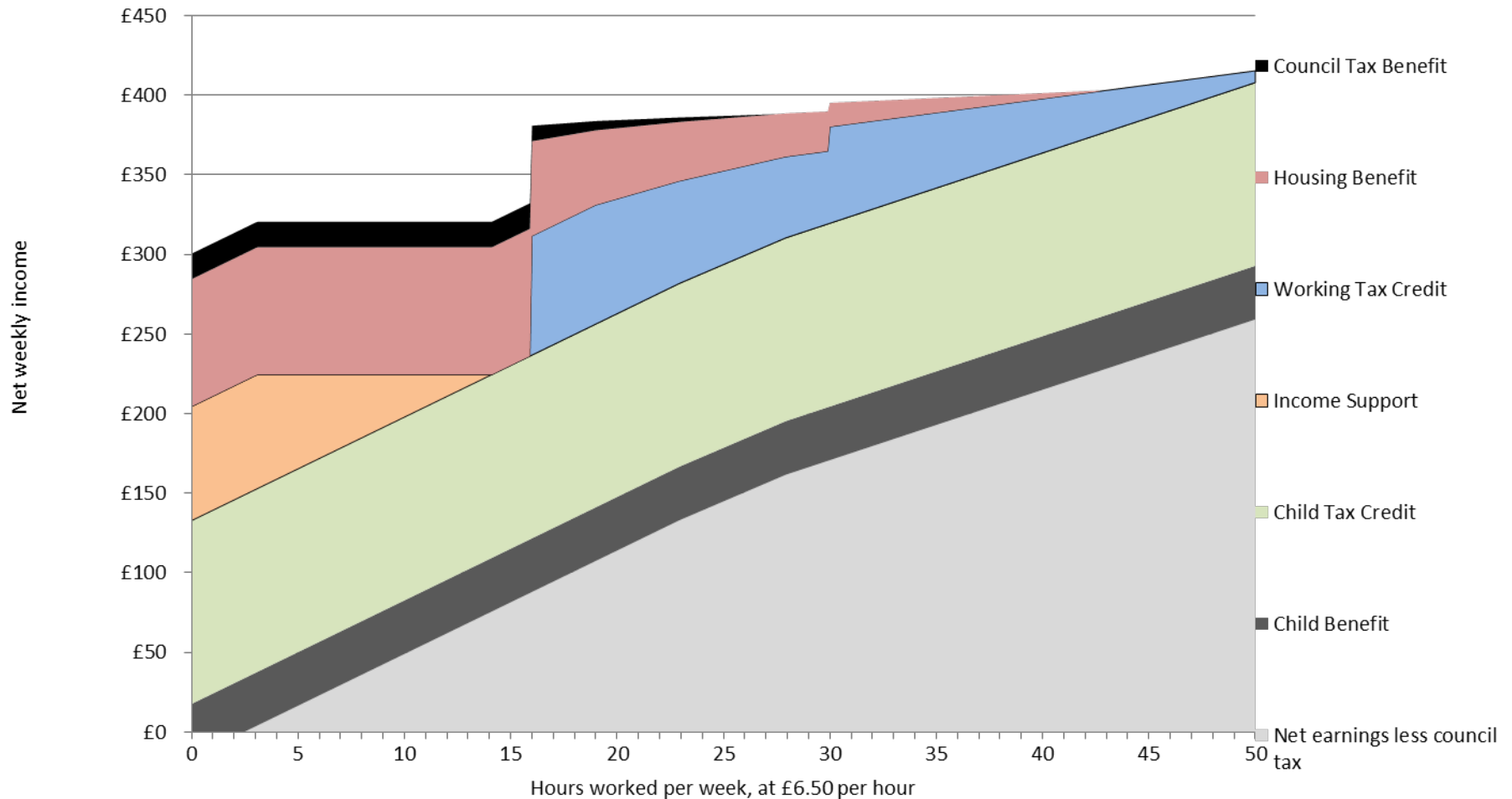
# Budget Constraint for Single Parent: UK 2011



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



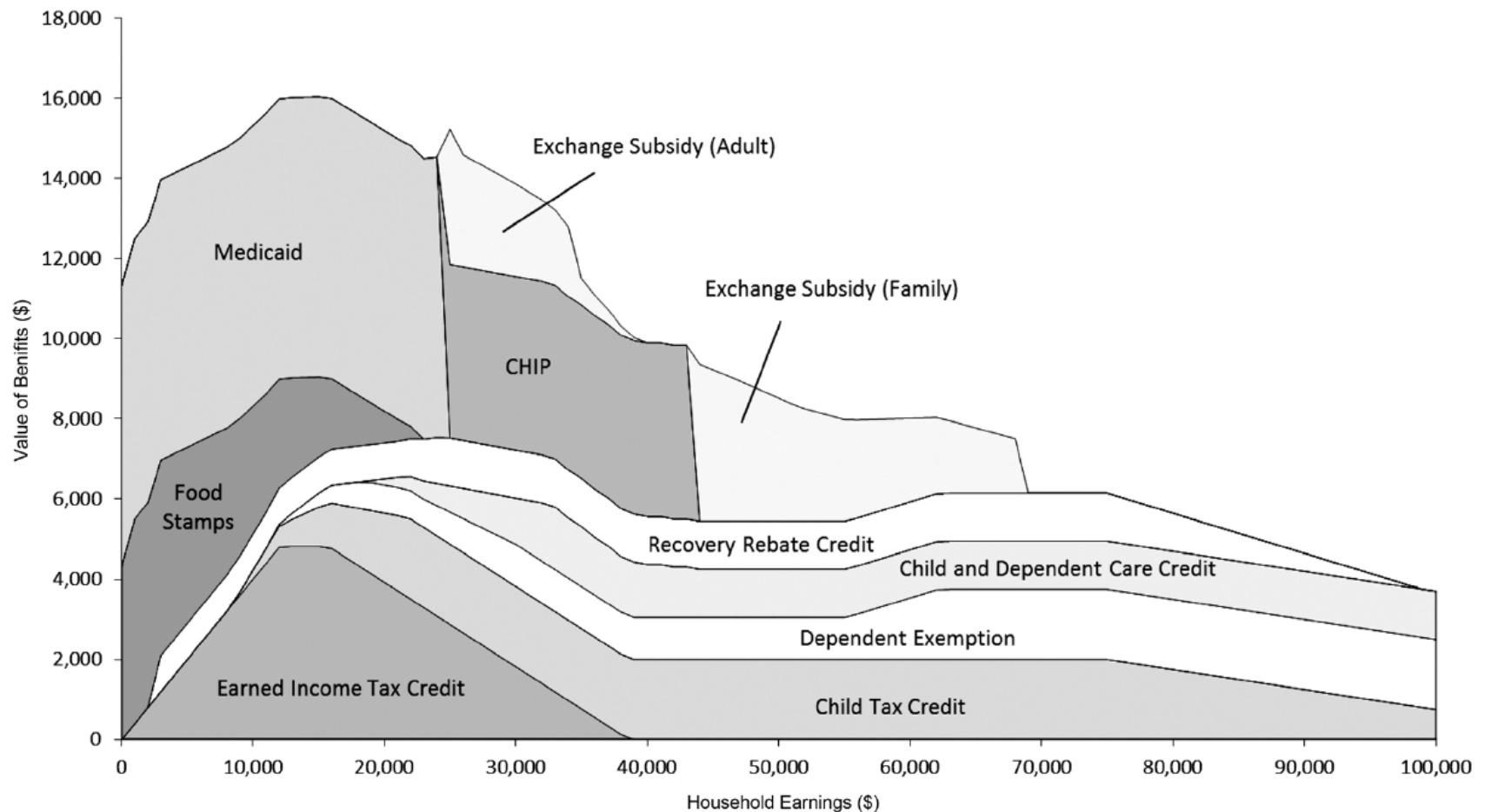
# Interactions matter: Budget Constraint for Single Parent in UK



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

# Universally Available Tax and Transfer Benefits in US

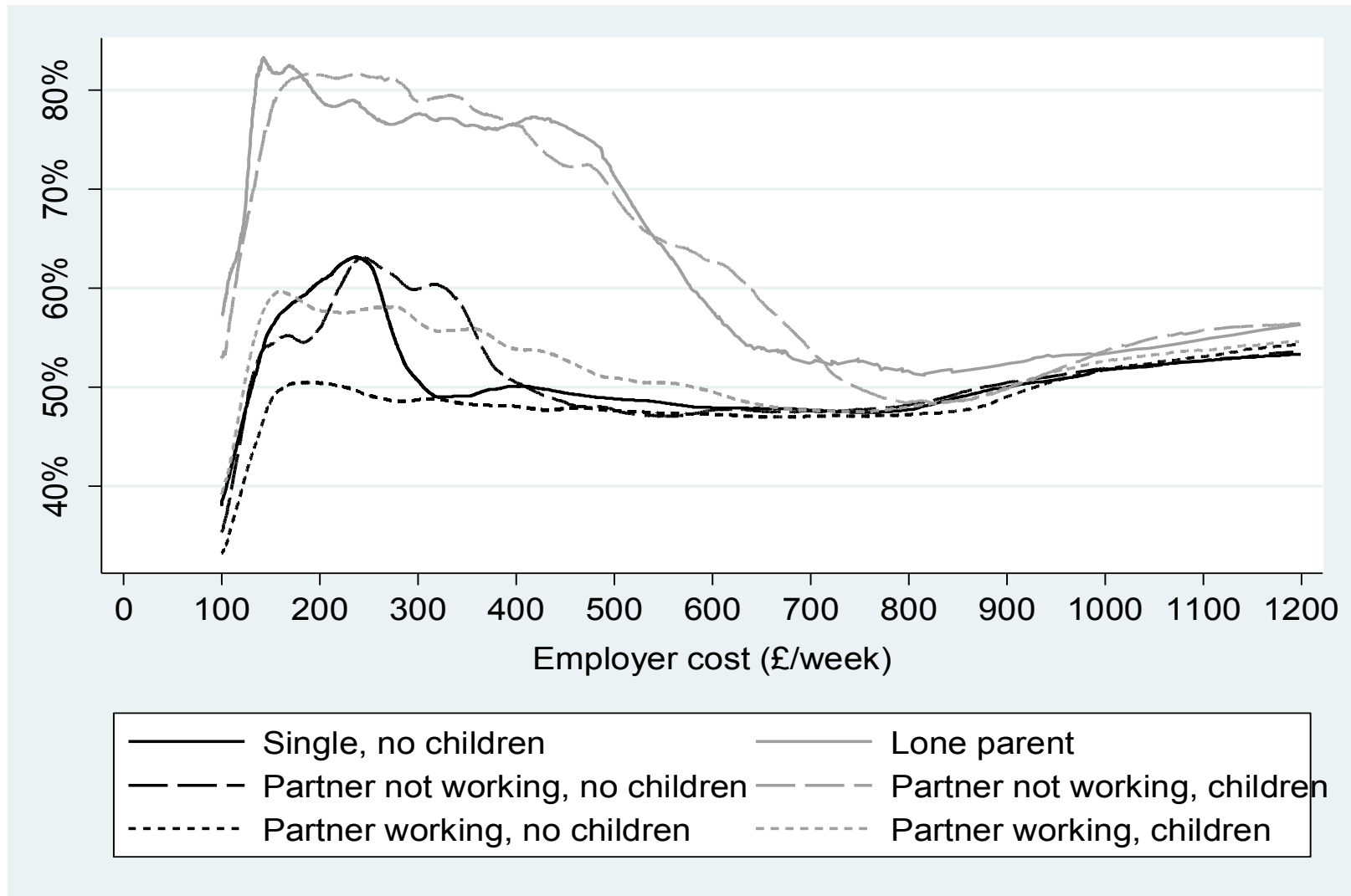
(Single Parent with Two Children, 2008)



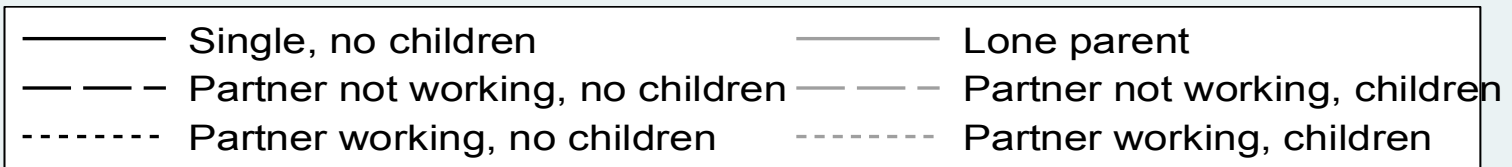
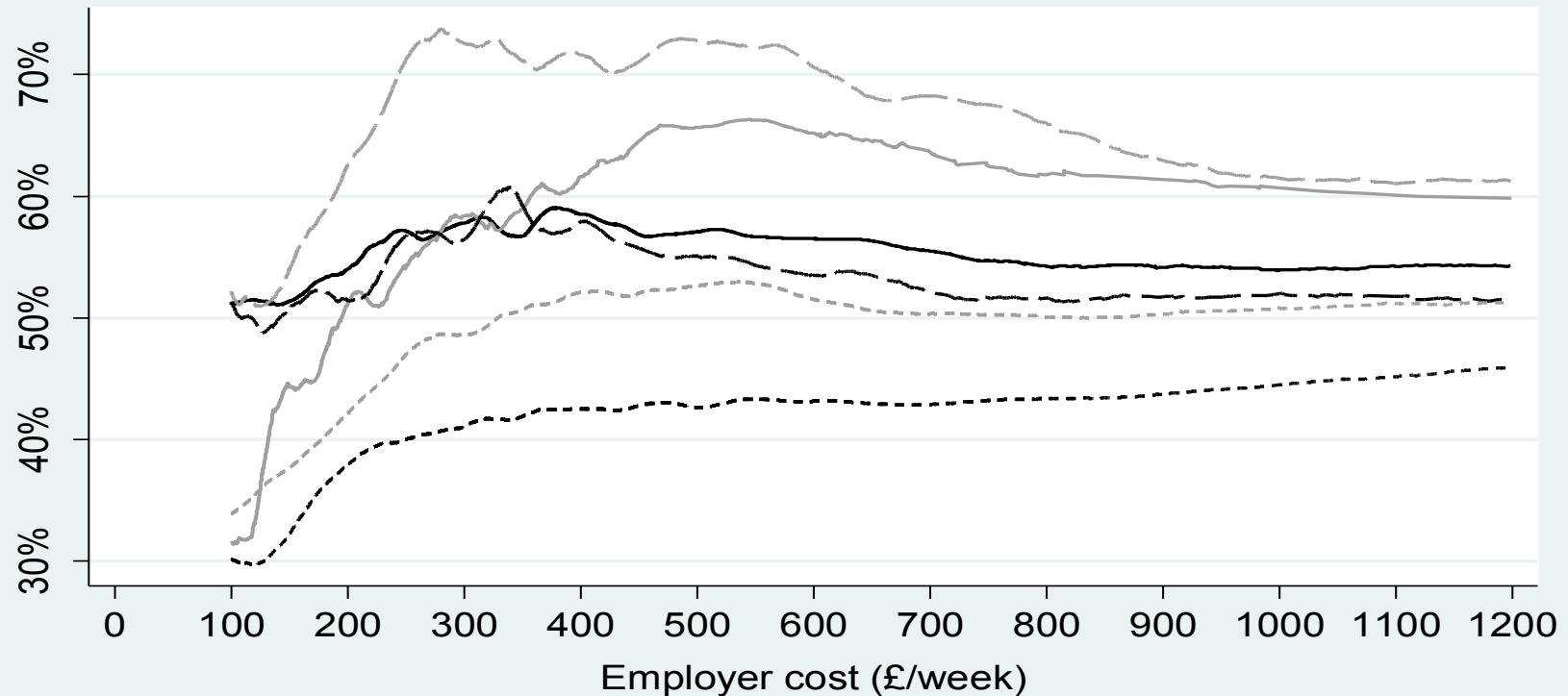
Source: Urban Institute (NTJ, Dec 2012).

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

# Average EMTRs for different family types: UK 2011



# Average PTRs for different family types: UK 2011

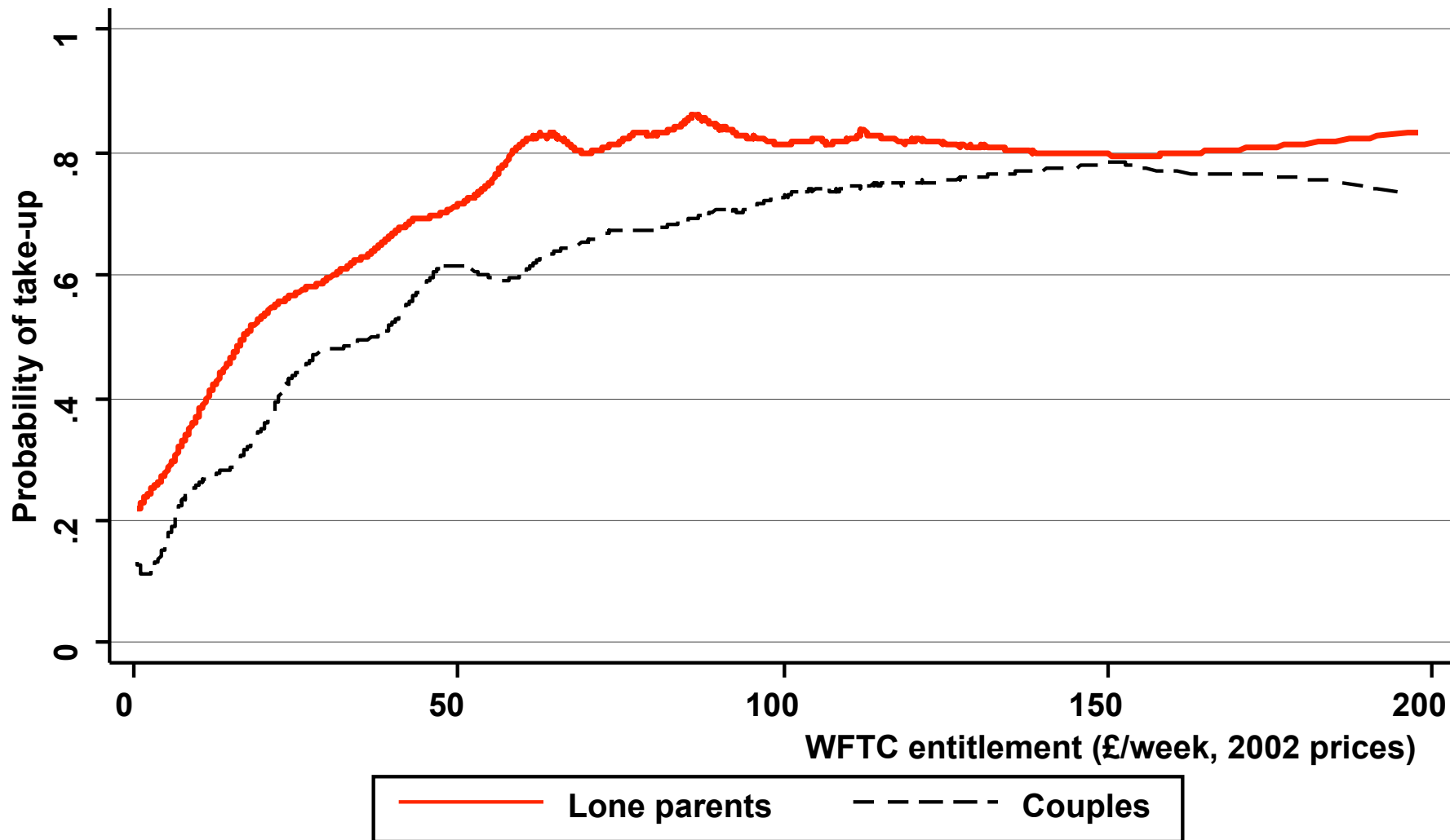


### 3. The importance of information and complexity

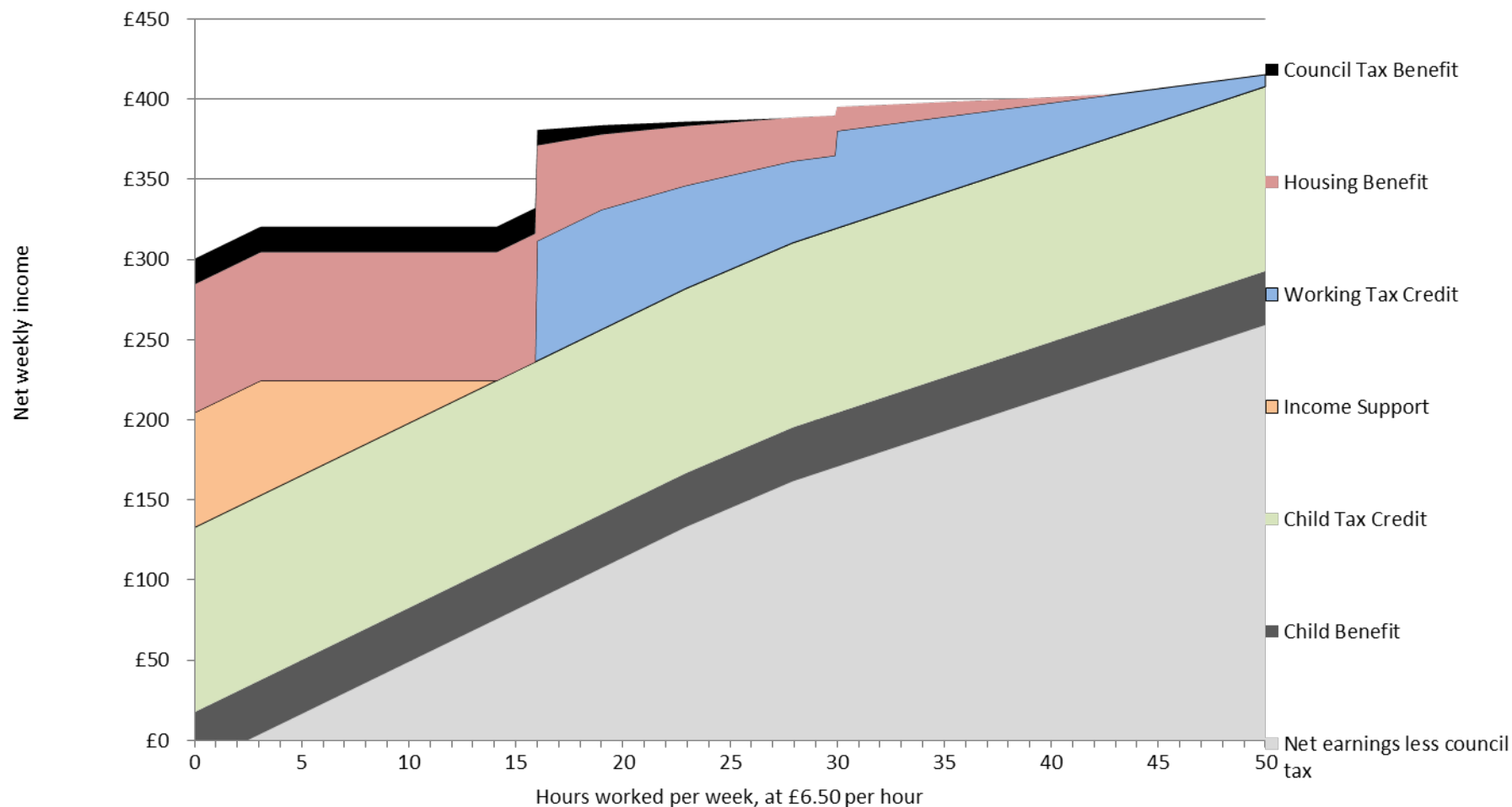
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- How is the policy likely to be understood by the agents involved?
- For example, how 'salient' are the various tax and welfare benefit incentives?
  - 'Take-up' of welfare and tax credits among eligible families
  - 'Bunching' at kink points

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



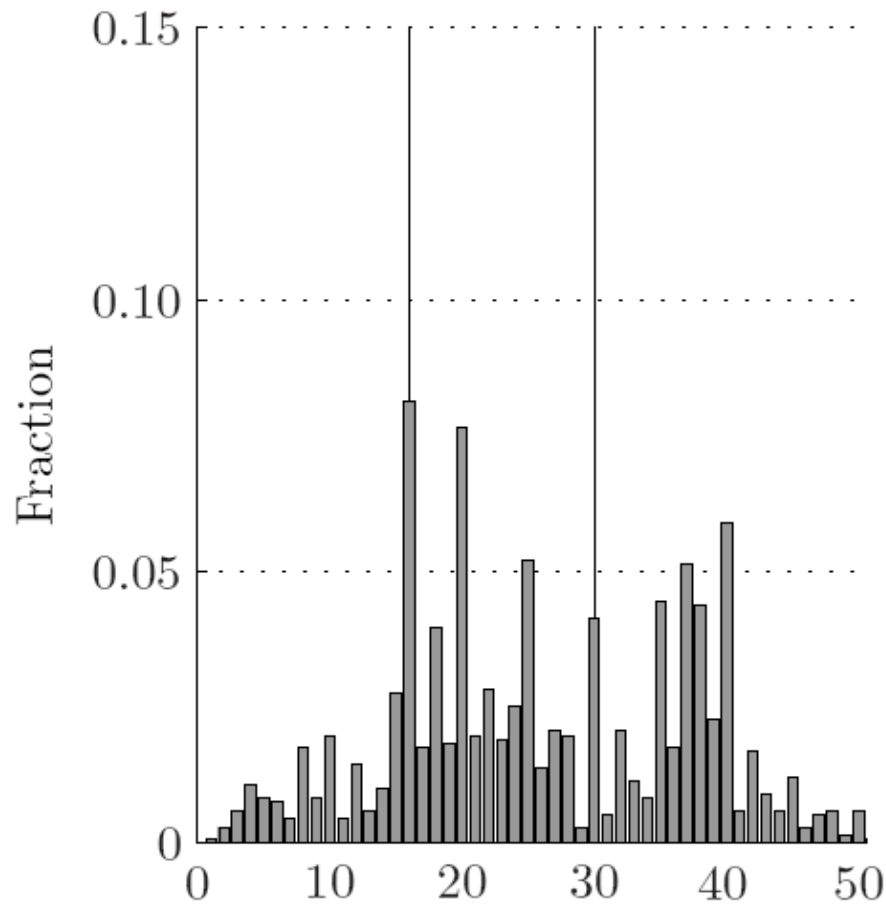
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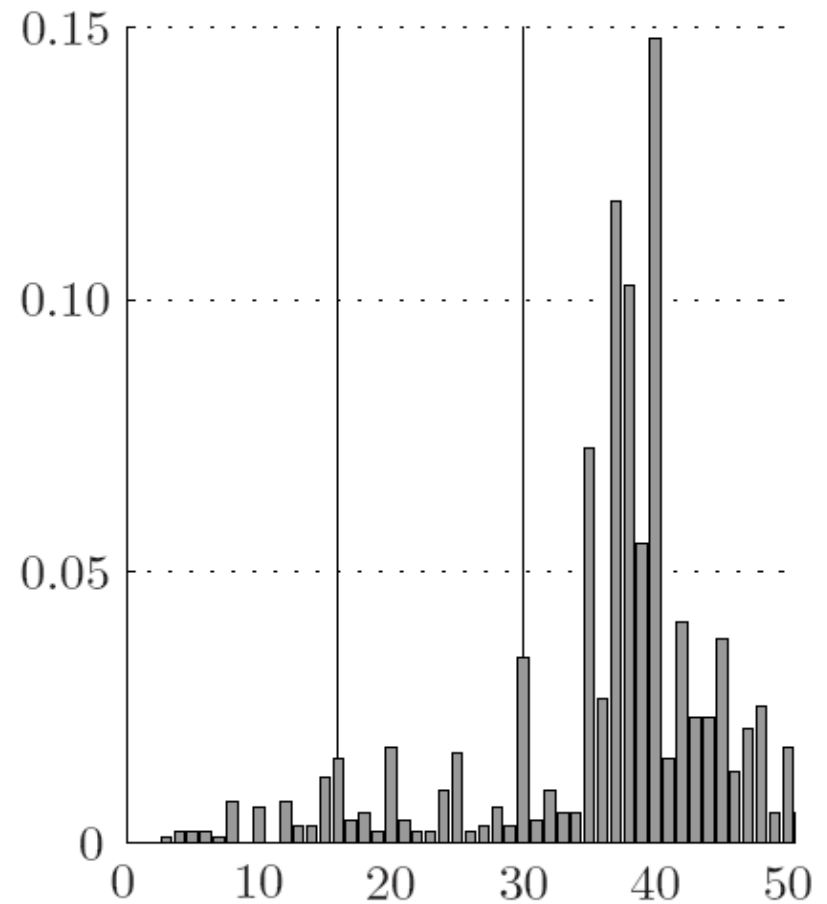
**Notes: wage £6.50/hr, 2 children, no other income, £80/wk rent. Ignores council tax and rebates**

# Are these hours rules salient?

Single Women (aged 18-45) - 2002



Hours of Work, Lone Mothers

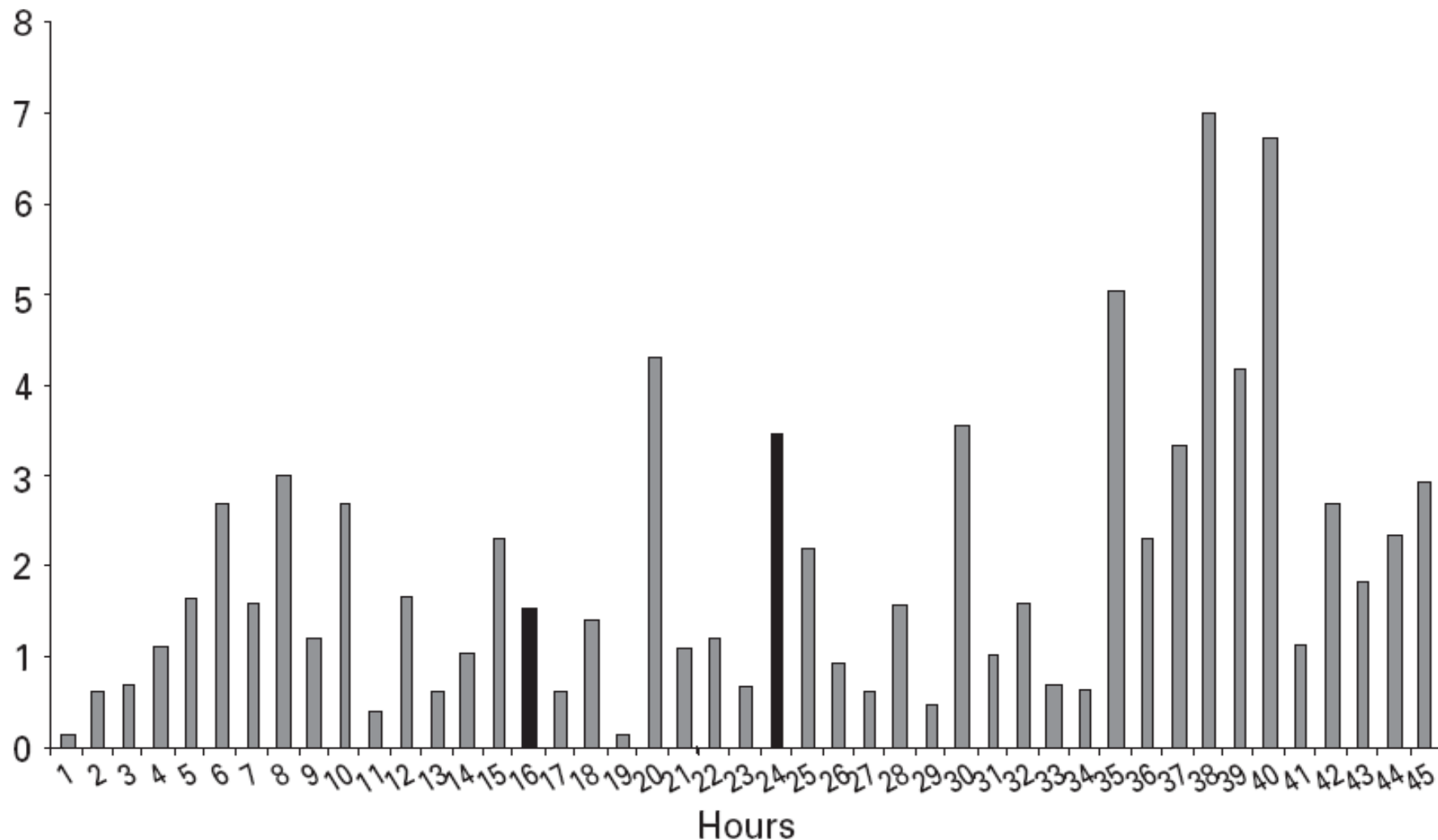


Hours of Work, Childless Single Women

Blundell and Shephard (2010)

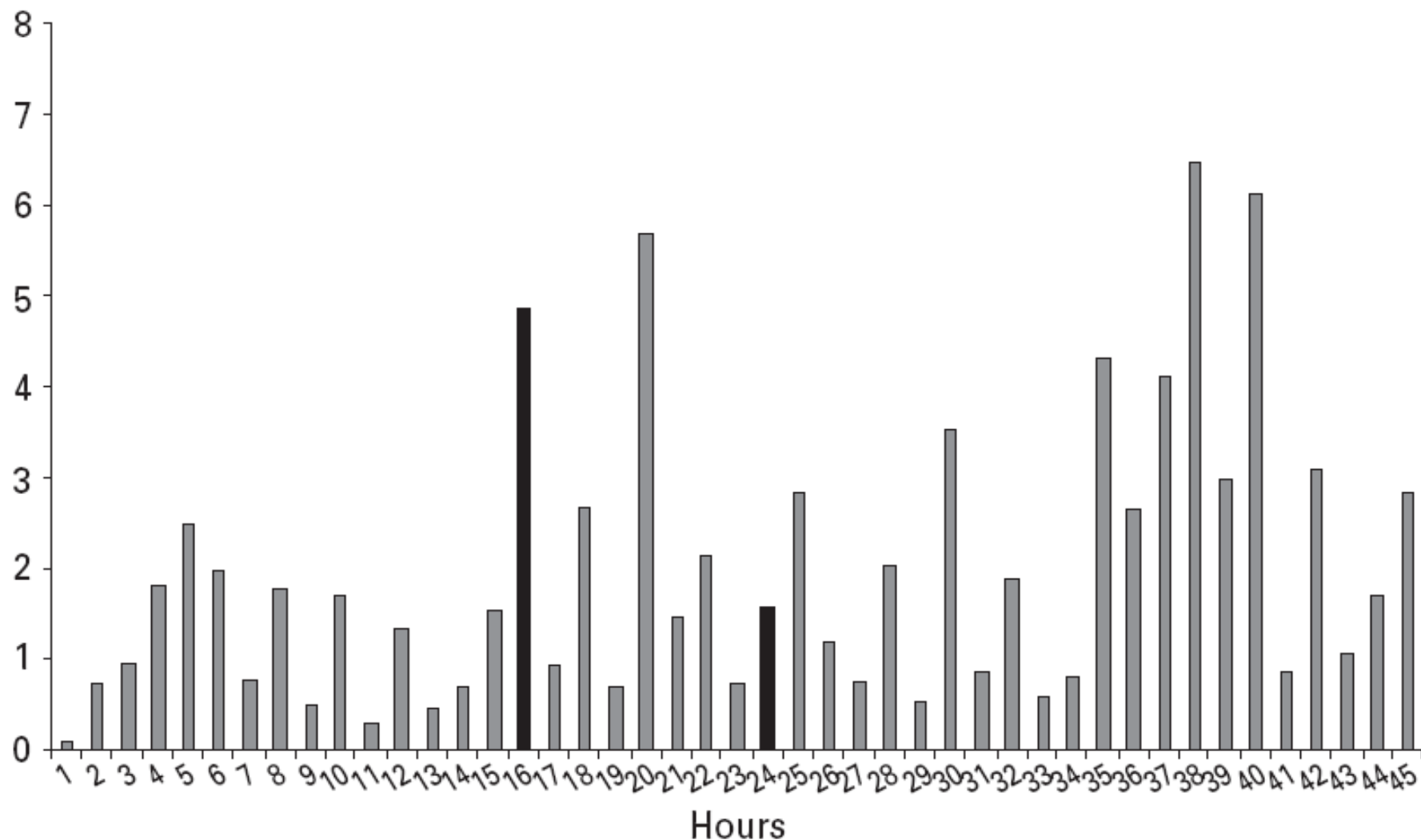


# Hours' distribution for lone parents, before WFTC



Blundell and Shephard (2010)

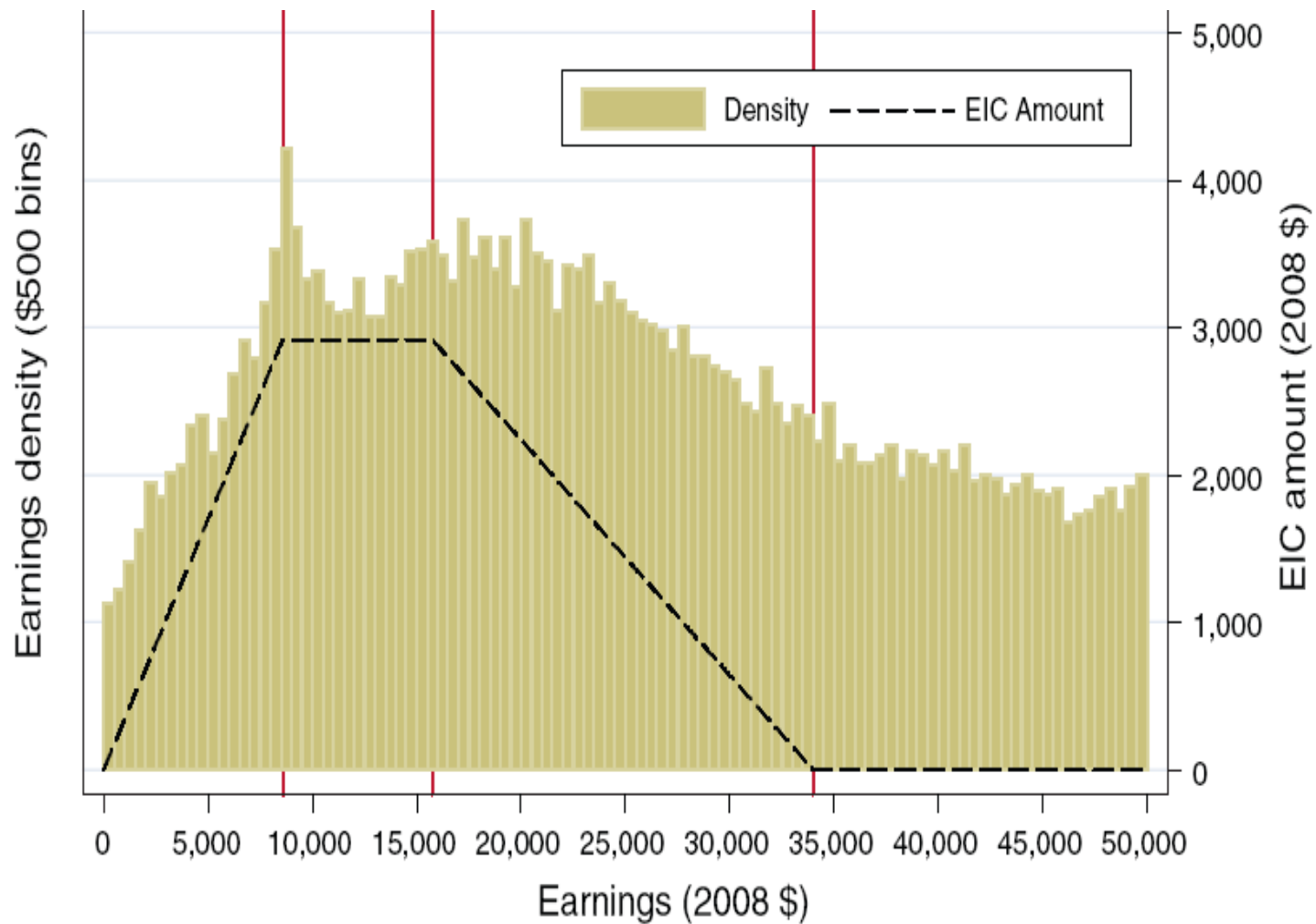
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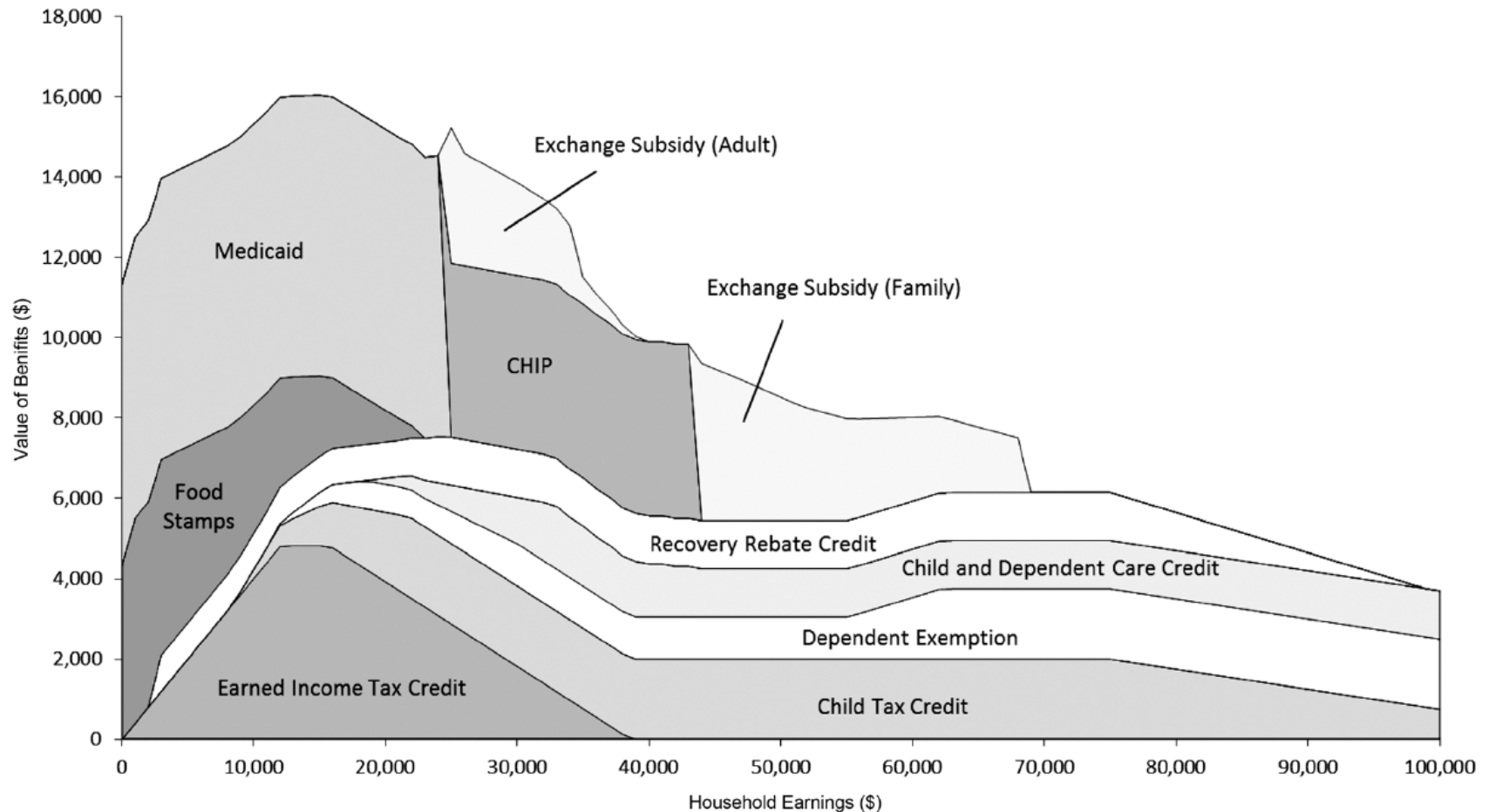
# Bunching at Tax Kinks and the EITC

## One child families: US



Source: Saez (2010)

# Universally Available Tax and Transfer Benefits in 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.

# Bunching at Tax Kinks and the EITC

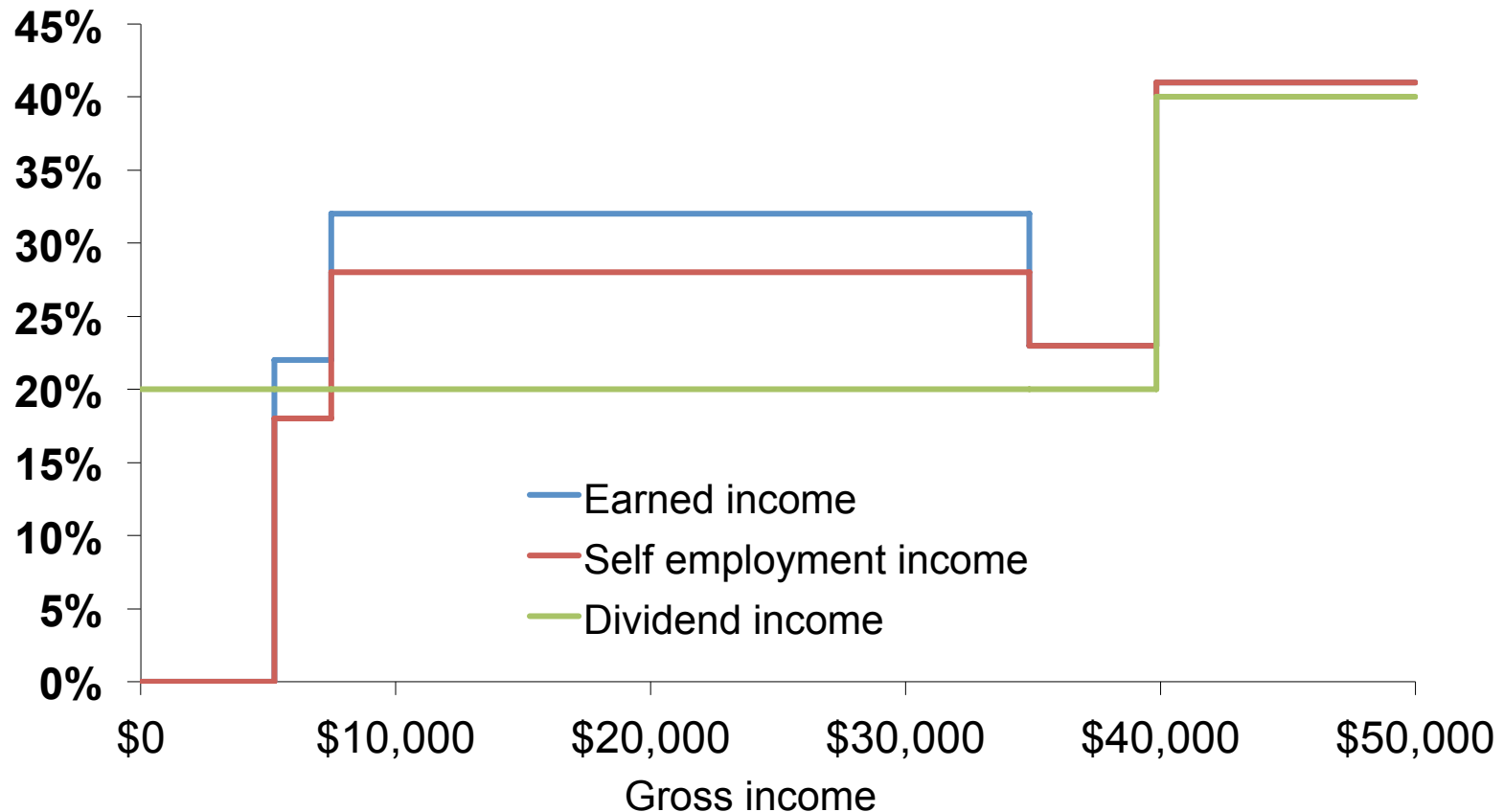
## One child families: US



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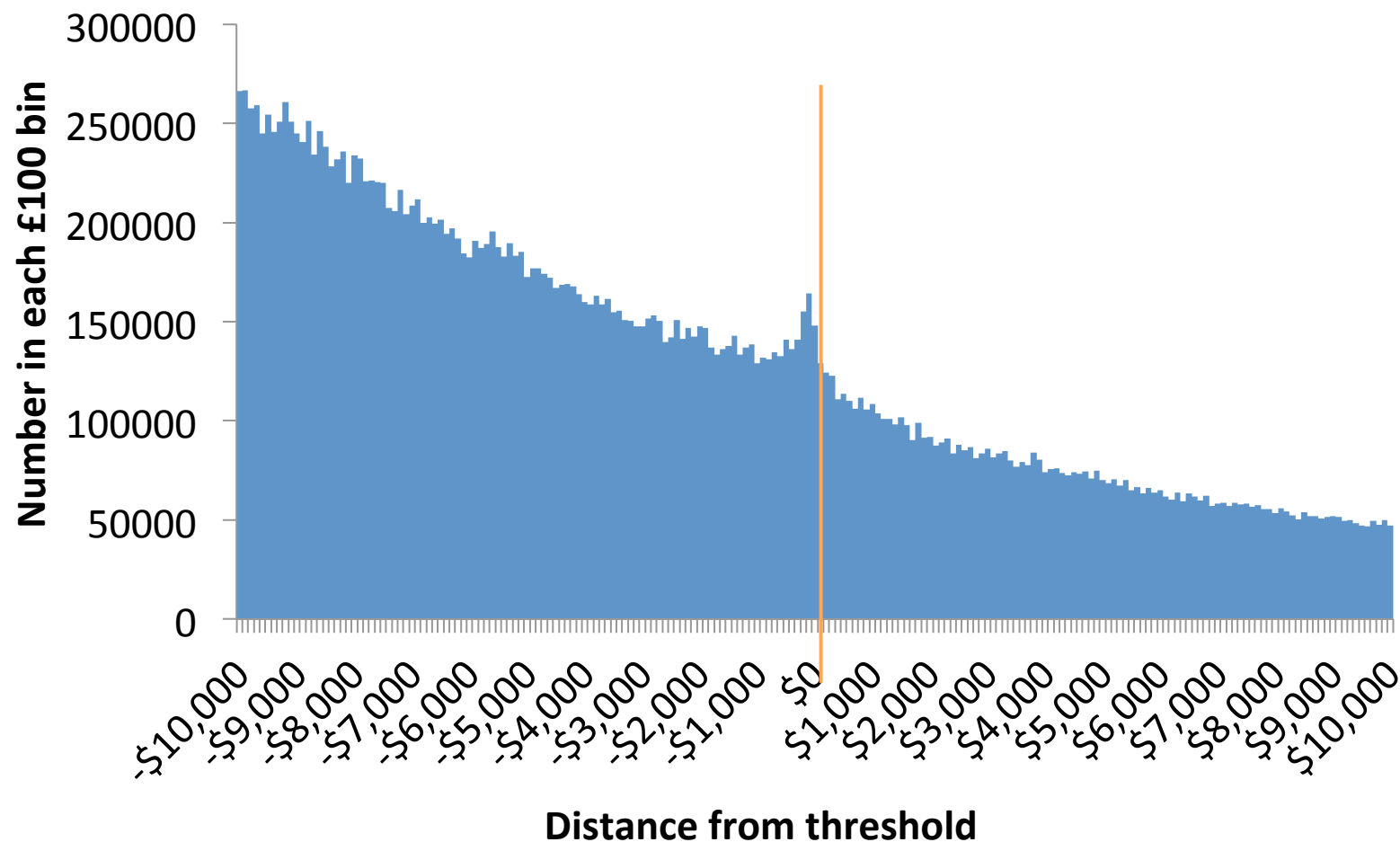
# Taxes on Higher Incomes

## Marginal tax rates by income level, UK

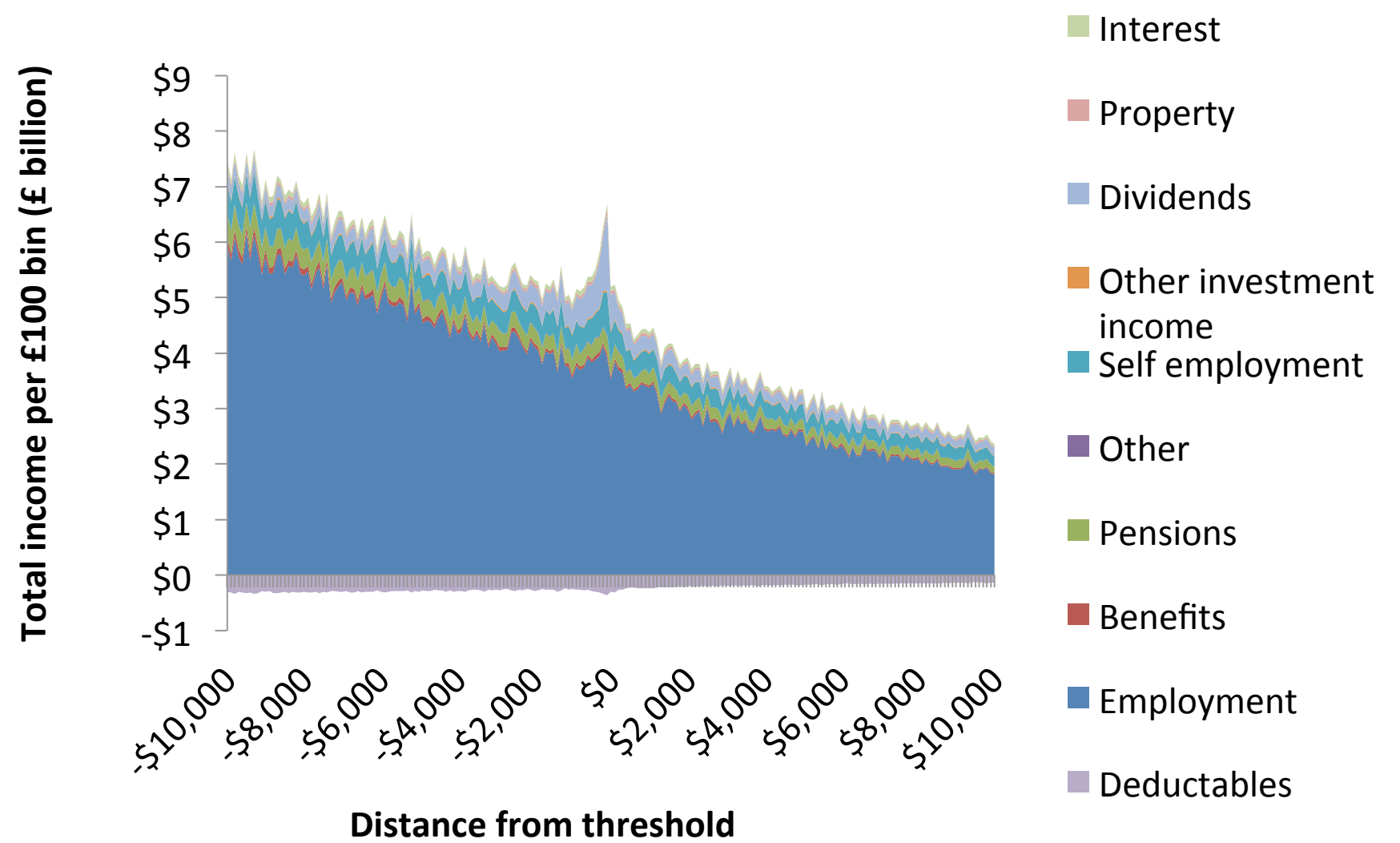


Note: assumes dividend from company paying small companies' rate. Includes income tax, employee and self-employed NICs and corporation tax.

# Bunching at the higher rate threshold, UK



# Composition of income around the higher rate tax threshold





## 4. Evidence on the size of responses

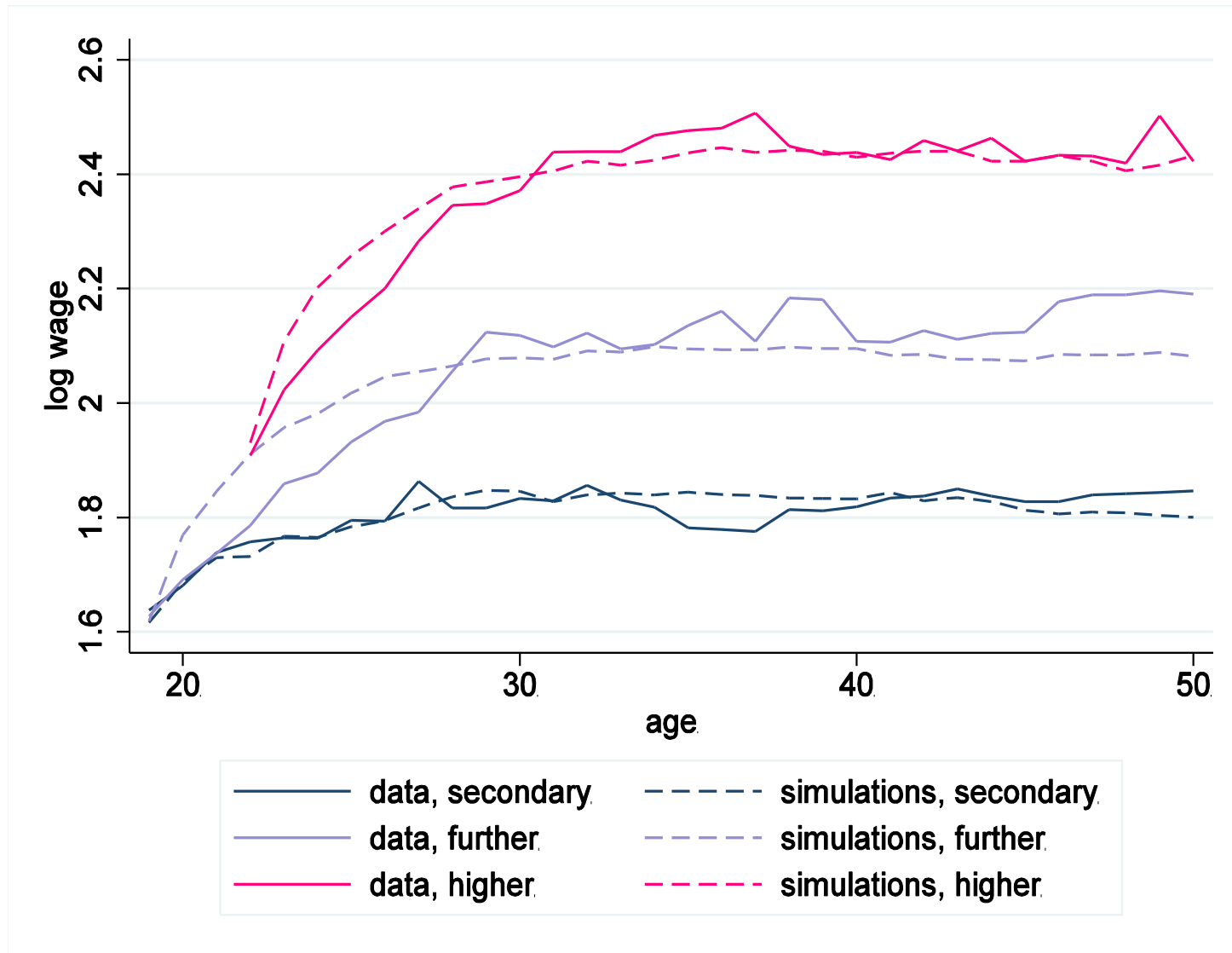
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- This is where the rigorous econometric analysis of structure and causality comes into play.
  - Eclectic use of two approaches:
    1. Quasi-experimental/RCT/reduced form evaluations of the impact of (historic) reforms
      - robust but limited 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.
      - account for life-cycle facts, effective tax rates, and salience/stigma.
- What do we need to get observed responses to match with incentives?

- Labour supply elasticities vary in key ways by education group, family type and age. No single number!
  - large at certain key points in the working life and for certain demographic groups, this is where tax and welfare benefit distortions are important.
- Information, stigma and salience matter
  - distinguish large reforms that are well understood.
- Taxable income is responsive for self-employed and top earners
  - but often reflects tax shifting and avoidance.
- Experience matters: especially for those with above basic education
  - and, it seems, only for those in full-time employment,
  - can explain ‘success’ of simpler simulations of reforms for low-wage workers.
- To match employment, hours and wages over the life-cycle it is key is to allow complementarity between human capital investments
  - between schooling and ‘on the job’ investments.

# Data and Simulations for Wages by education and age

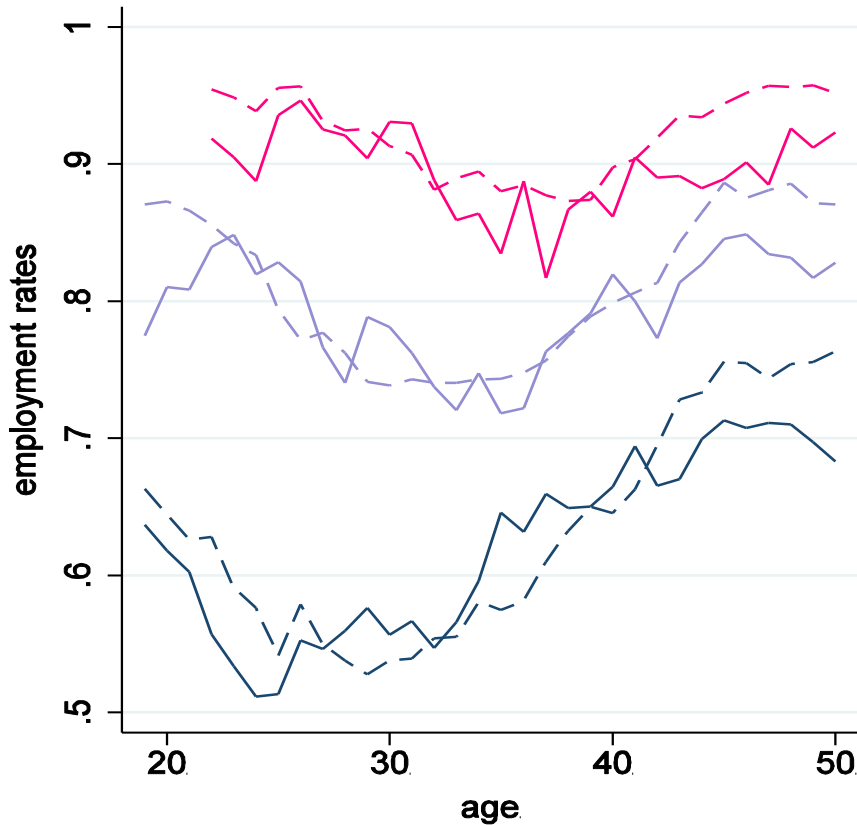
## – UK Women, BHPS



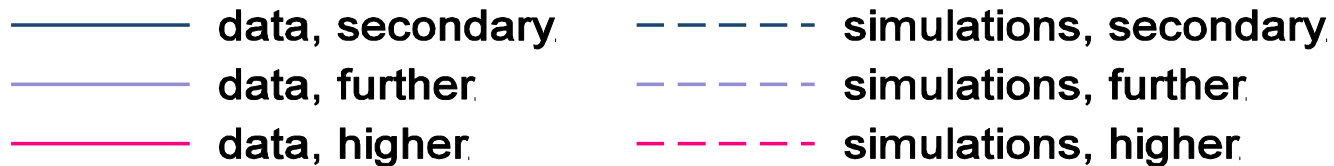
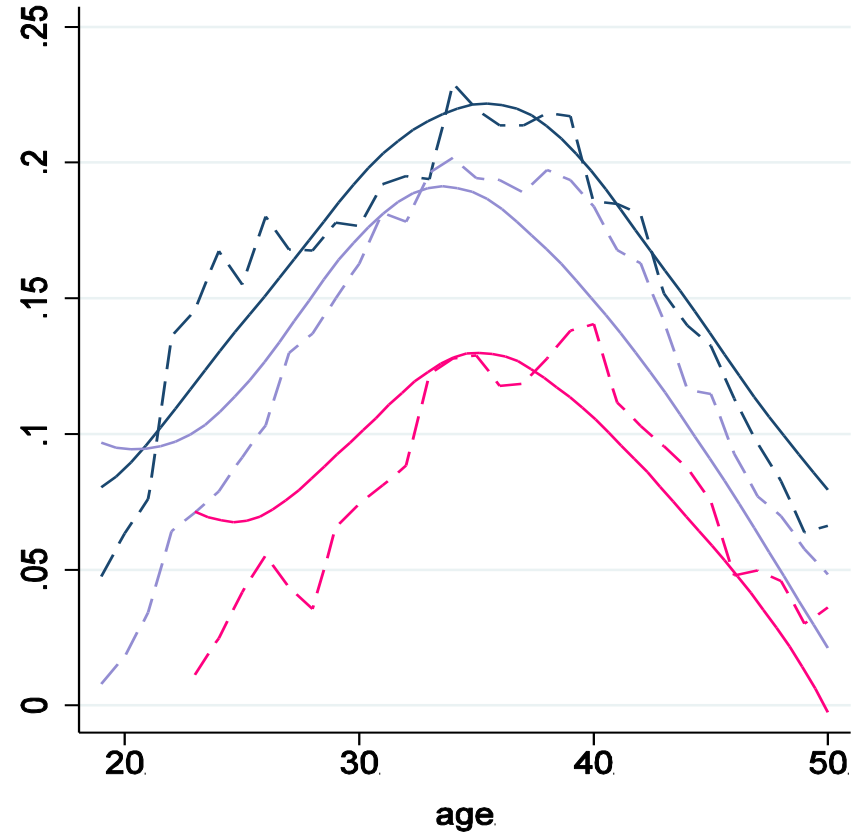
Source: Blundell, Dias, Meghir and Shaw (2013)

# Data and Simulations for Women's Employment - UK

## All employment



## Part-time employment



## Younger Workers

- Extensive margin responses are low ( $e \approx .15$ ) at young ages for college educated
  - but much higher ( $\approx .9$ ) for mothers with basic education & kids in 3-7 age range, and larger than intensive elasticities which are more modest ( $\approx .5$ )
  - extensive/intensive elasticities imply optimal earned income tax credits,
  - small human capital/experience effects for low educated so little progressivity but need to account for ‘take-up’.

## Human capital effects

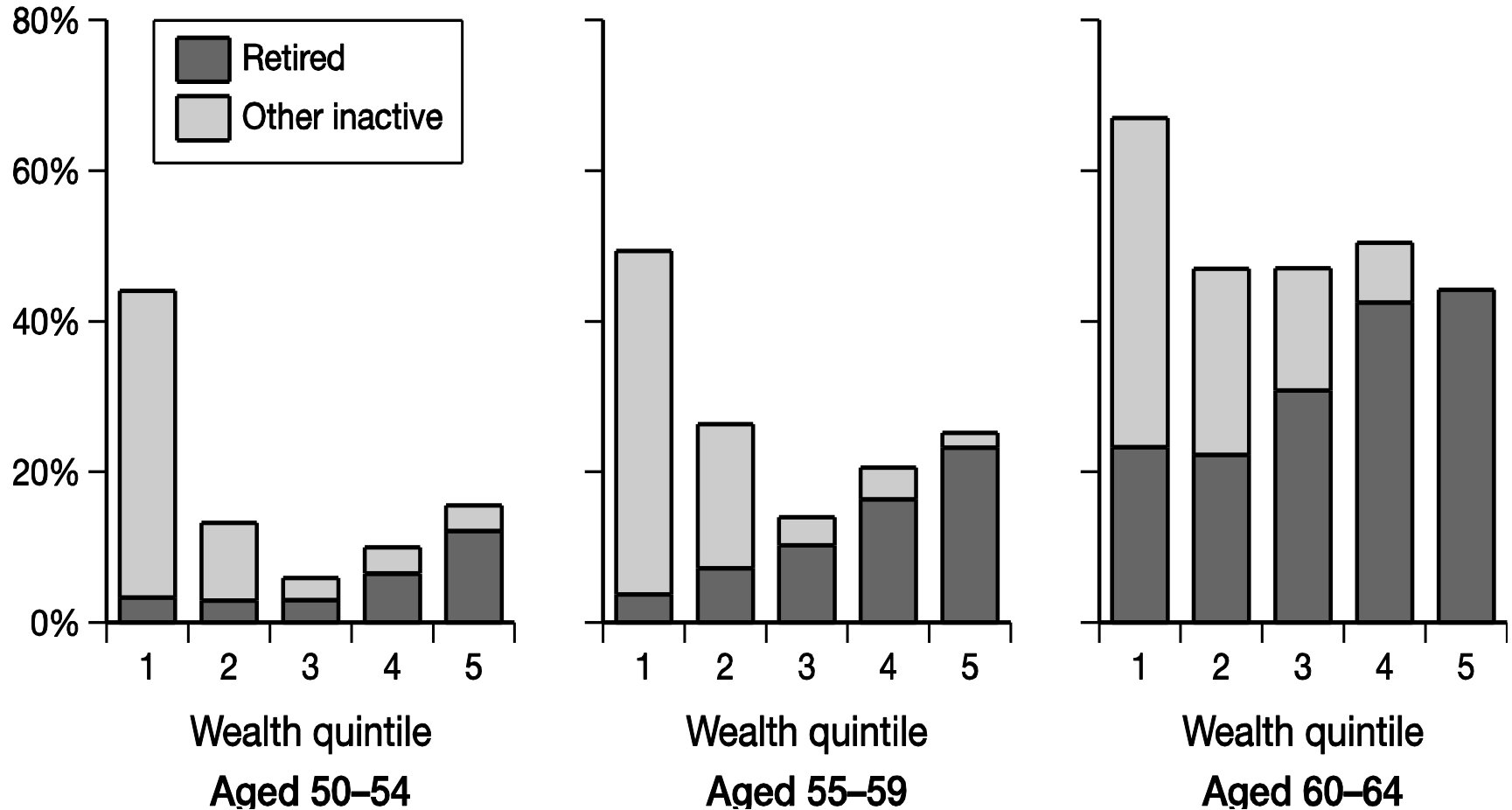
- Two forms of human capital – schooling and on-the-job investment
  - the hourly wages of those with more education are higher, and grow faster and for longer into the working life - formal education **complements** experience capital,
  - for educated young workers, unlikely to respond to tax incentives during career, rather effect 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.
- Response elasticities are sizable but do not appear to explain all the recent rises in employment at older ages (e.g. in UK and US).

# Early retirement and inactivity by age and wealth quintile

## UK: men

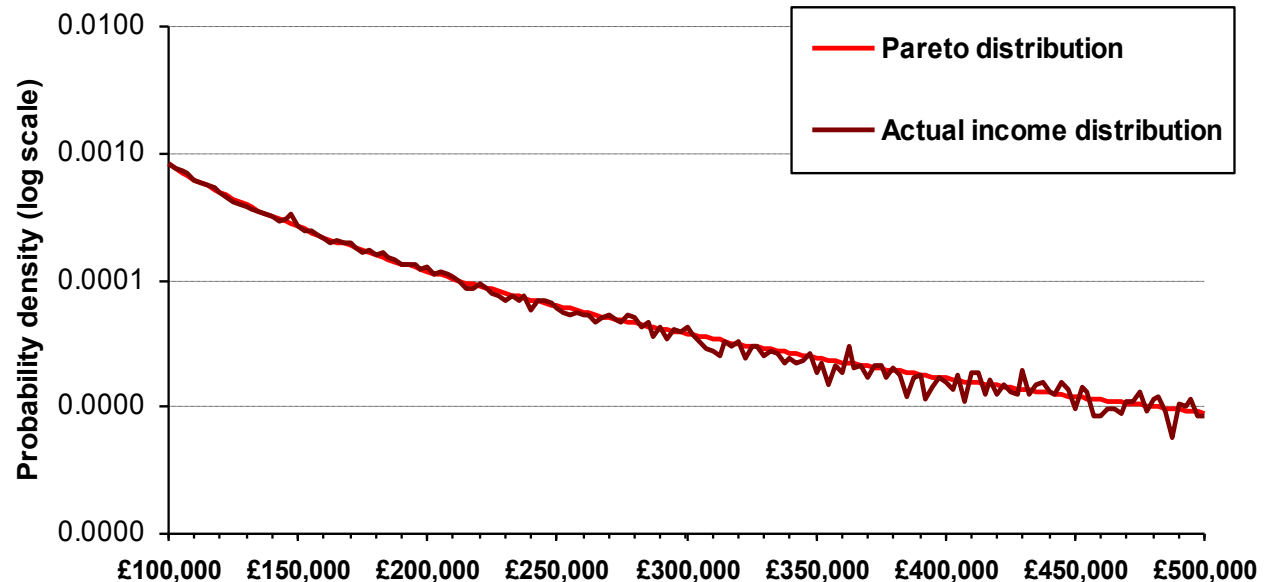


**Note:** Wealth quintiles are defined within each five-year age group.

**Source:** Banks and Casanova (2003), based on sample of men from the 2002 English Longitudinal Study of Ageing.

## 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 top rate
  - $1/[1 + \text{taxable income elasticity (e)} * \text{Pareto parameter (a)}]$



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



## Some key messages emerge for reform:

- 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.

# Implications for efficient redesign of tax policy

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- Current systems remain 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 effect on human capital.
- Align tax rates at the margin across income sources

That's All!

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More details on website - <http://www.ucl.ac.uk/~uctp39a/>

# Extra Slides

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# Evidence since the financial crisis suggests

- In general workers and families are acting as if they expect a long-run fall in relative living standards
  - evidence from consumption and saving; and responses in labour supply.
- Capital investment and/or productivity have been slow to pick up
  - employment for the young/low skilled may bounce back, but what of real wages and productivity?
- Appears the number of routine jobs near the middle of the earnings distribution has declined steadily, at least in the UK and US
  - more jobs are now professional or managerial.
- Suggests longer term earnings growth will mostly come from high-skilled occupations, with some at the very bottom.
- There remain the **same** key points where tax systems can be reformed that will also enhance earnings, employment and human capital.

# Prospects...

- Still much to do in focussing on older workers in general, on return to work for parents/mothers, and on entry into work.
- There are some potential big gains here,
  - for example, as (higher skilled) women age in the workforce.
- Tax/welfare reforms to enhance earnings (from *Mirrlees*):
  - refocus incentives towards transition to work, return to work for lower skilled mothers and on enhancing incentives among older workers.
- Human capital and ‘on the job’ wage/productivity complementarity
  - note the potential importance of mismatch of entry skills in this recession.
- Productivity remains a key issue.