

# Designing a Tax System for the 21st Century:

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## The Role of Theory and Evidence

Prix Jean-Jacques Laffont Lecture

*Auditorium du Museum d'Histoire Naturelle*

*Toulouse*

*December 8, 2008*

Richard Blundell

*Institute for Fiscal Studies and University College London*

# Why re-design taxes?

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## Changes in the world:

- Capital income harder to tax (globalisation)
- Challenges to indirect taxes (VAT fraud, IT)
- Policymakers have new objectives (environment)
- Changing institutional environment/players (ECJ)
- Demographic change (ageing, lone parenthood)
- Growth in wage and wealth inequalities
- Mobility of firms and people

# Why re-design taxes?

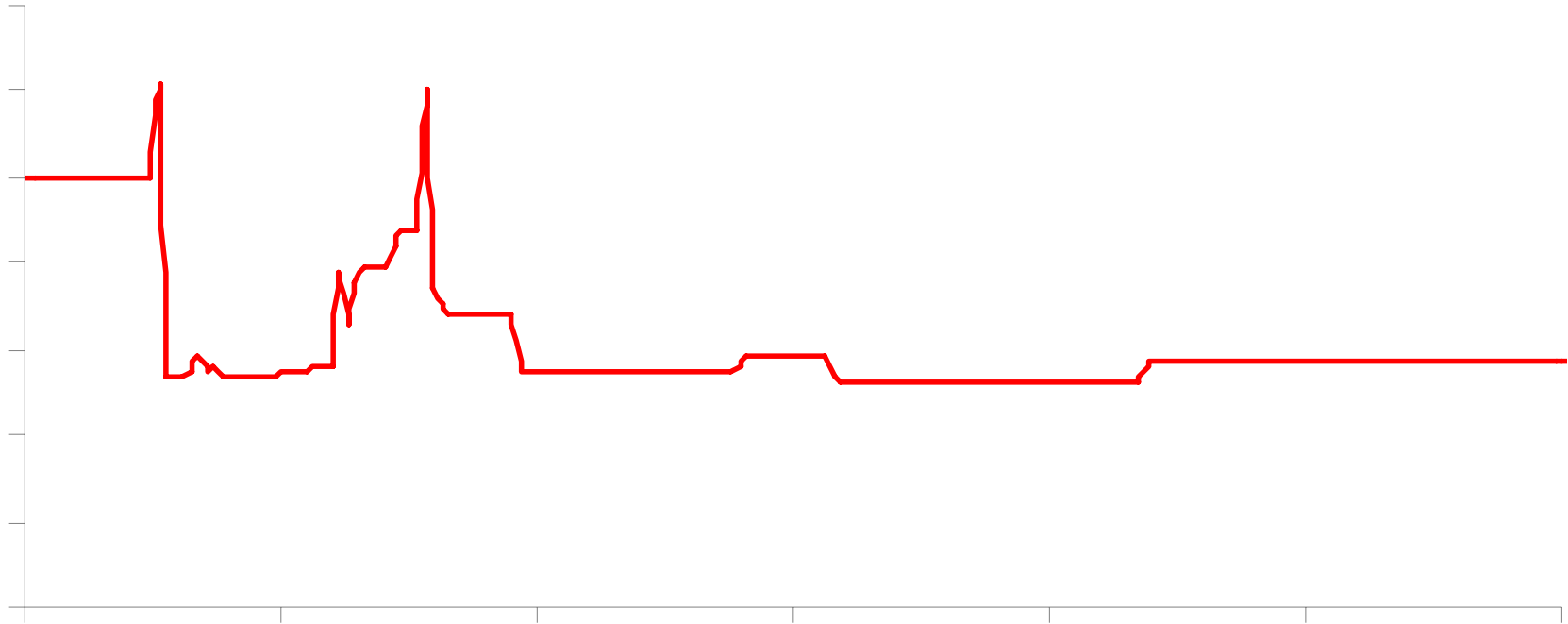
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## Changes in our understanding:

- More micro-data and better methods
- Extensive micro-simulation models
- Developments in optimal tax design
- Developments in dynamic fiscal policy
- Importance of political economy
- New insights from behavioural economics
- - a systematic look at the whole tax system

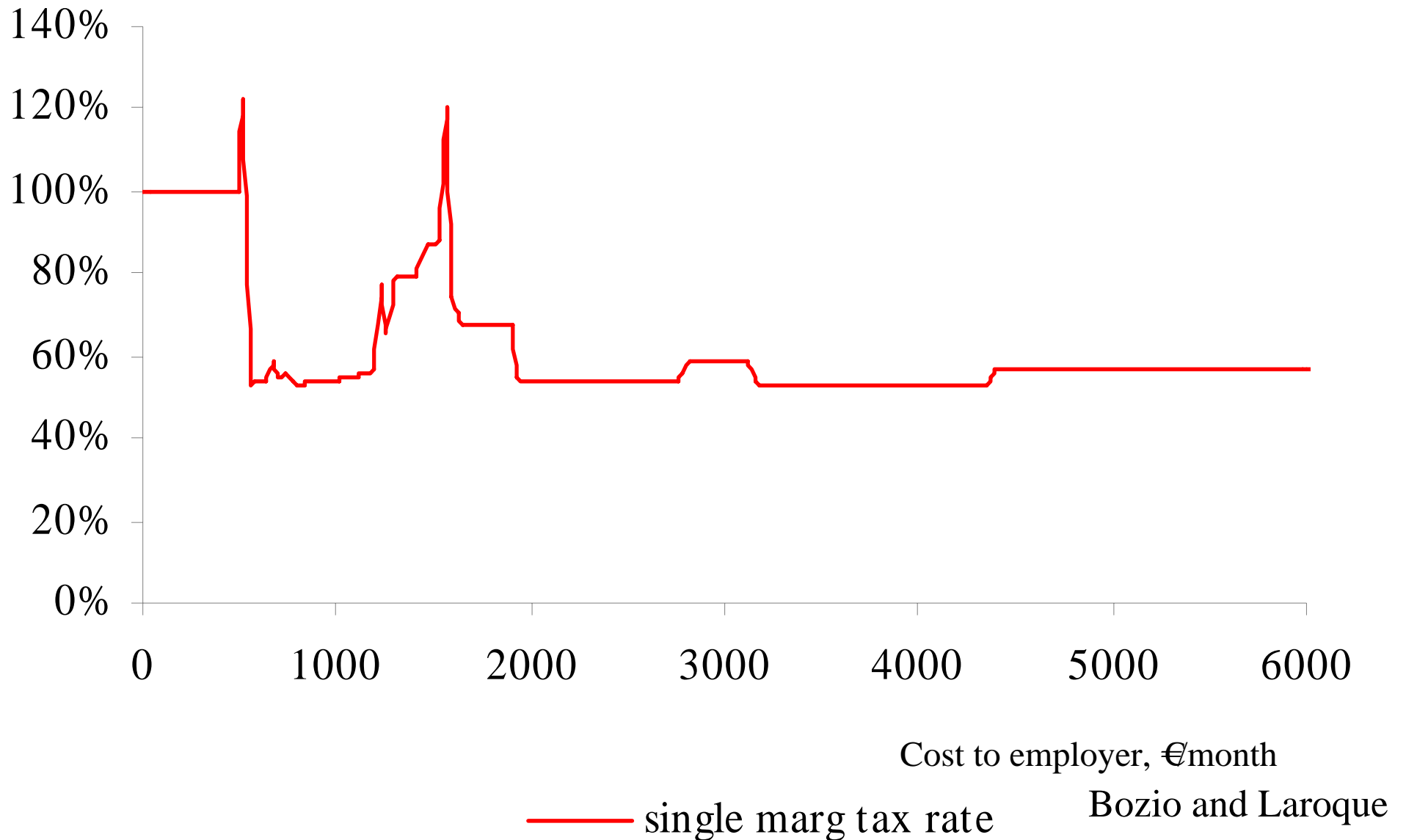
# A Futuristic 21<sup>st</sup> Century city skyline?

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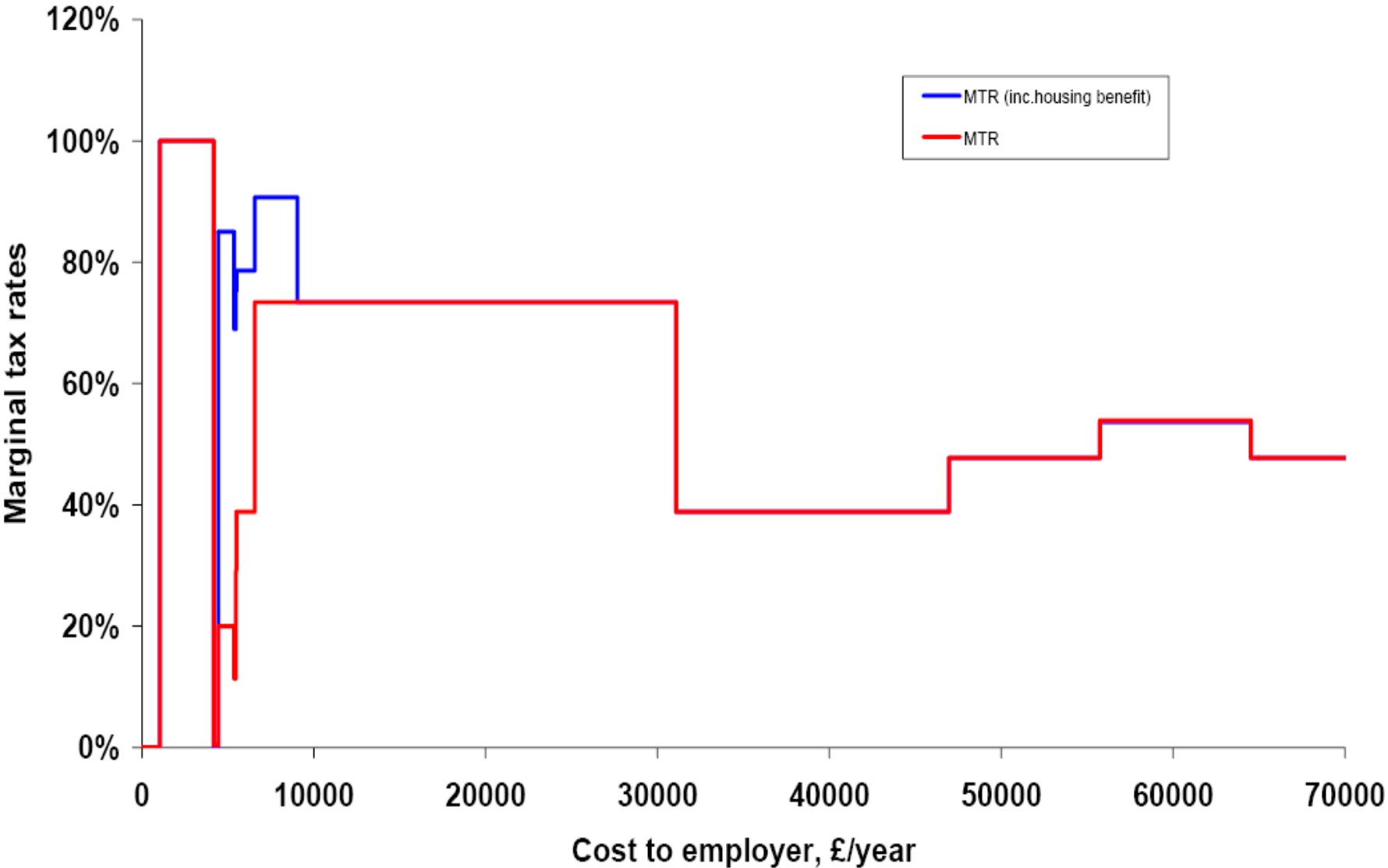


# No! Effective marginal tax rates in 21<sup>st</sup> Century France

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# Effective marginal tax rates on earned income in UK



However, simple designs are not always the best

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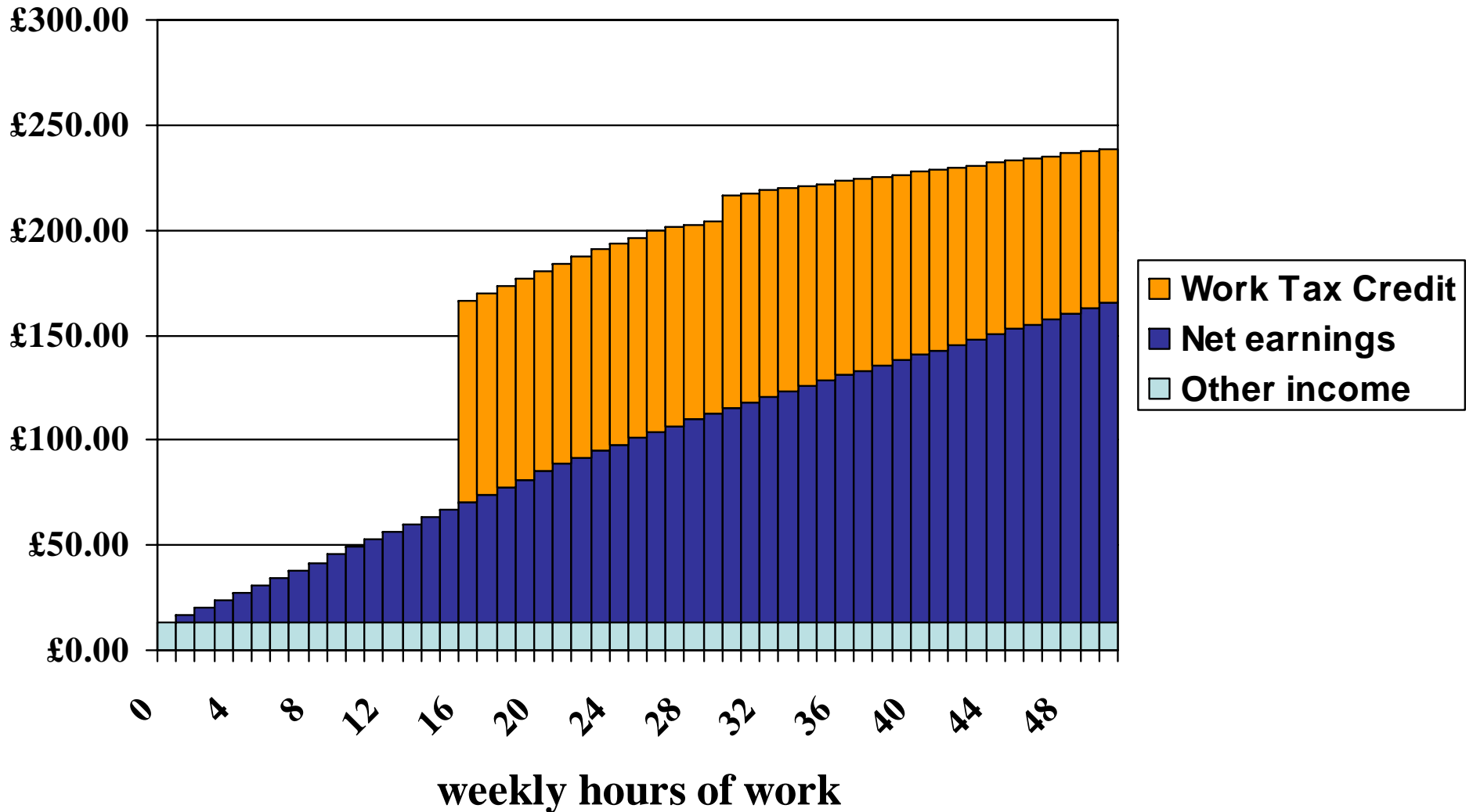
for skylines

- or for tax systems...

- Mechanism design can lead to complex rules
  - ‘that implies that I do believe tax systems should be complicated, not simple’ James Mirrlees, IDEI lecture.
- Need to balance ‘optimal’ design complexity with time and cognitive costs
  - ‘a wealth of information creates a poverty of attention’ Herb Simon, Nobel prize winner.

# Complexity often arises via unintended policy interactions

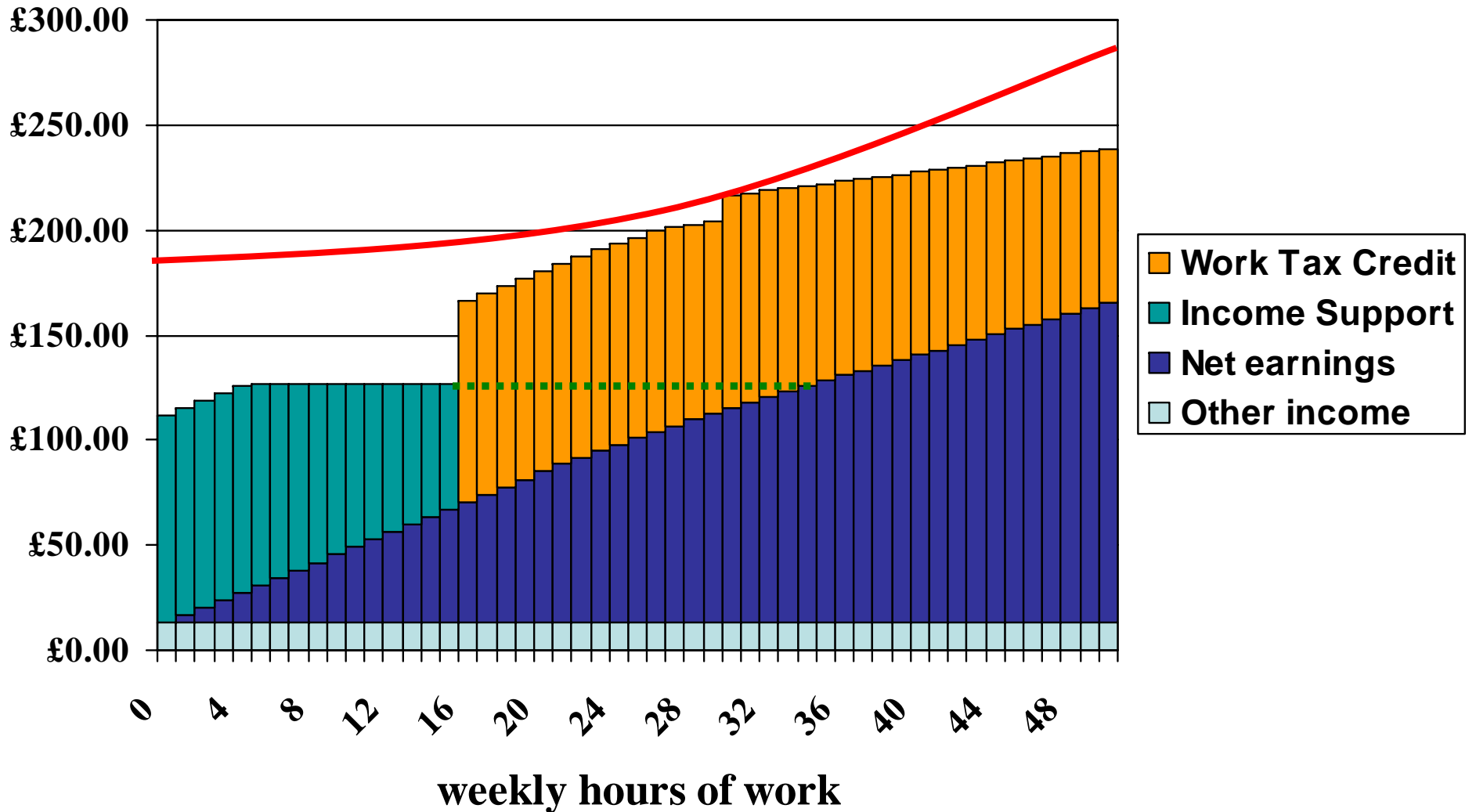
## The interaction of taxes and benefits in the UK





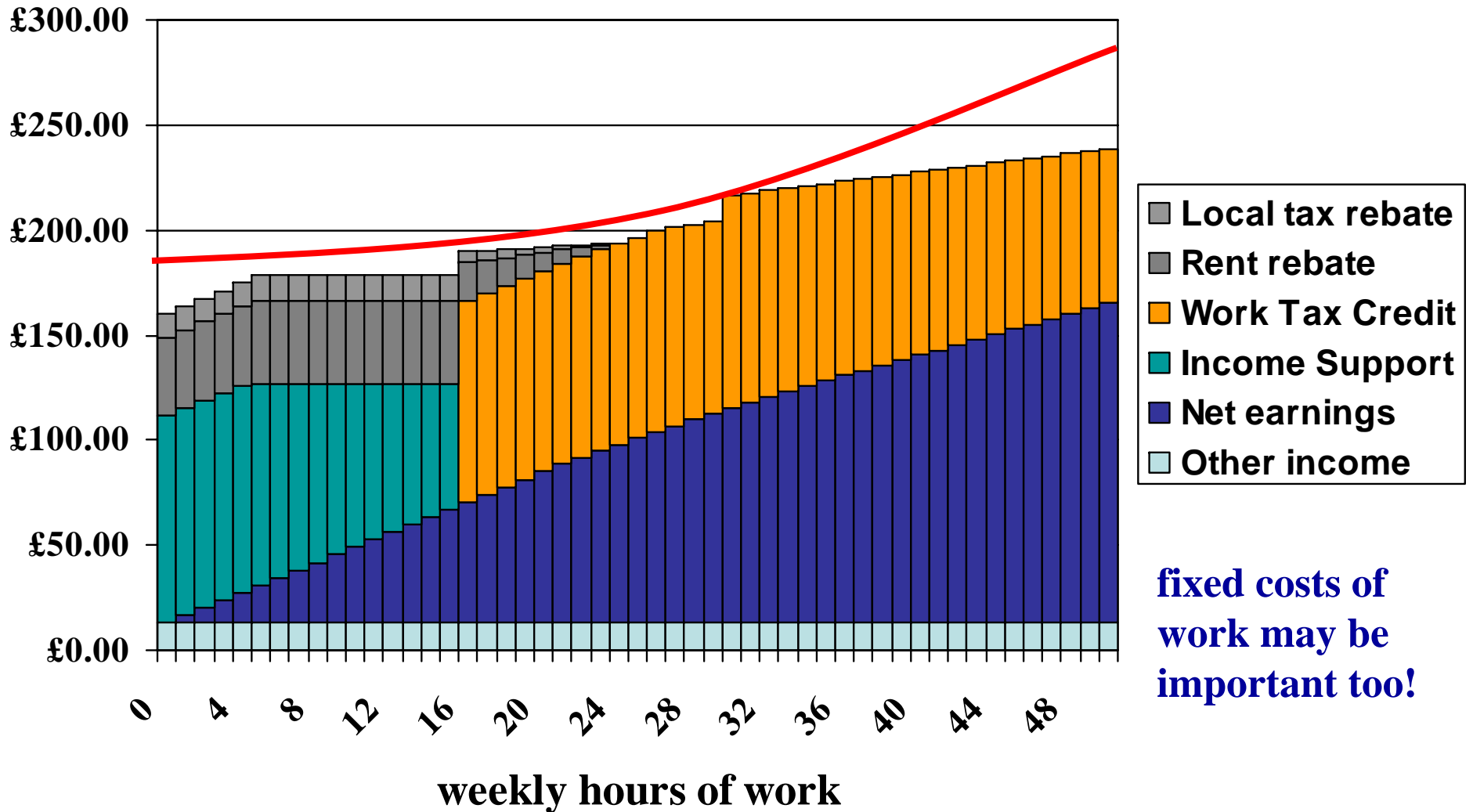
# Complexity often arises via unintended policy interactions

## The interaction of taxes and benefits in the UK

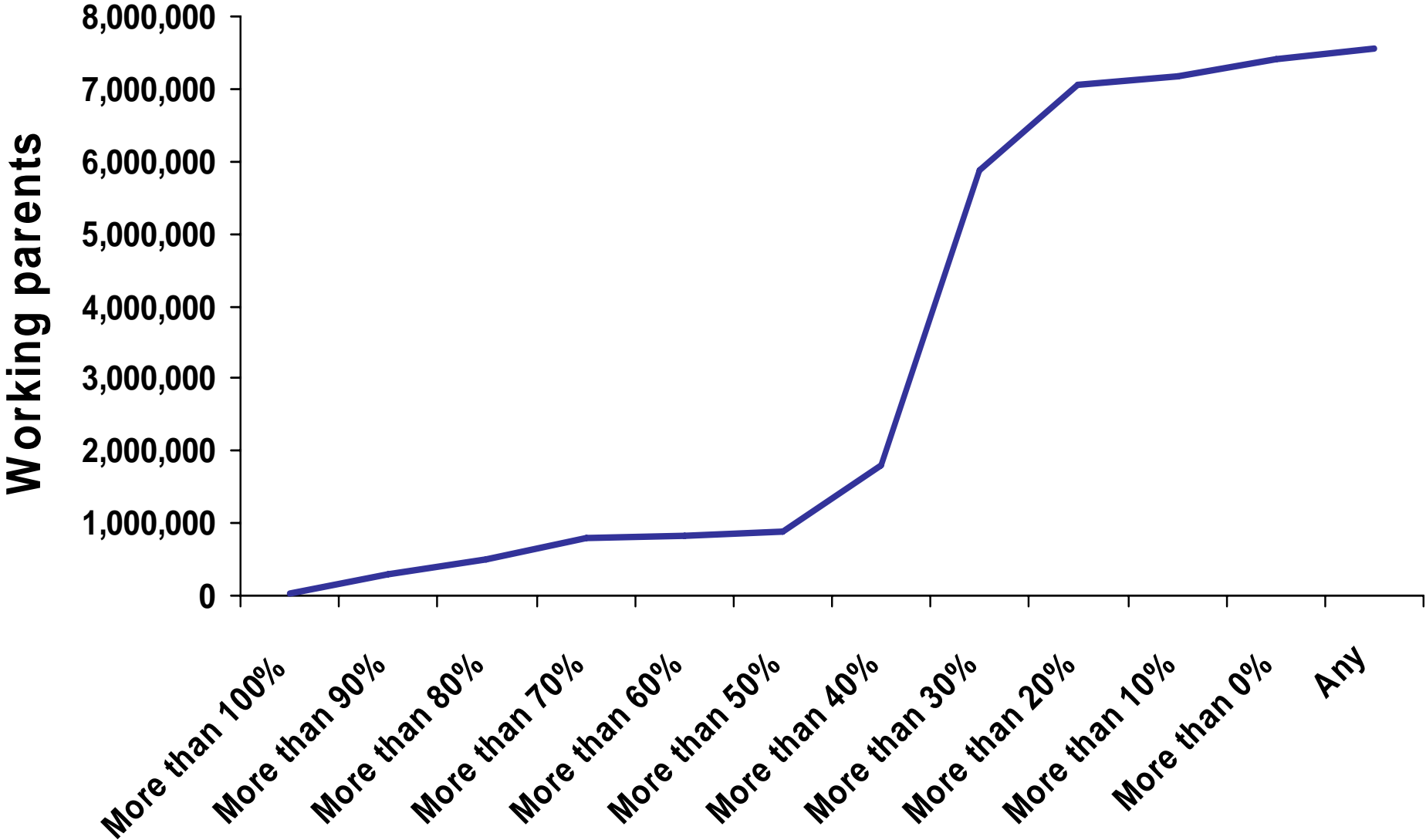


# Complexity often arises via unintended policy interactions

## The interaction of taxes and benefits in the UK



# Effective UK marginal tax rates - by accident or design?



# Draw on - The Mirrlees Review: Tax by Design

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*Chair: Sir James Mirrlees*

Tim Besley (LSE, Bank of England & IFS)

Richard Blundell (IFS & UCL)

Malcolm Gammie QC (One Essex Court & IFS)

James Poterba (MIT and NBER)

I. Commissioned chapters on 13 key topics

written by international experts with expert commentaries

II. Overview report by the editorial team

characteristics of a good tax system

- pre-publication versions available online:

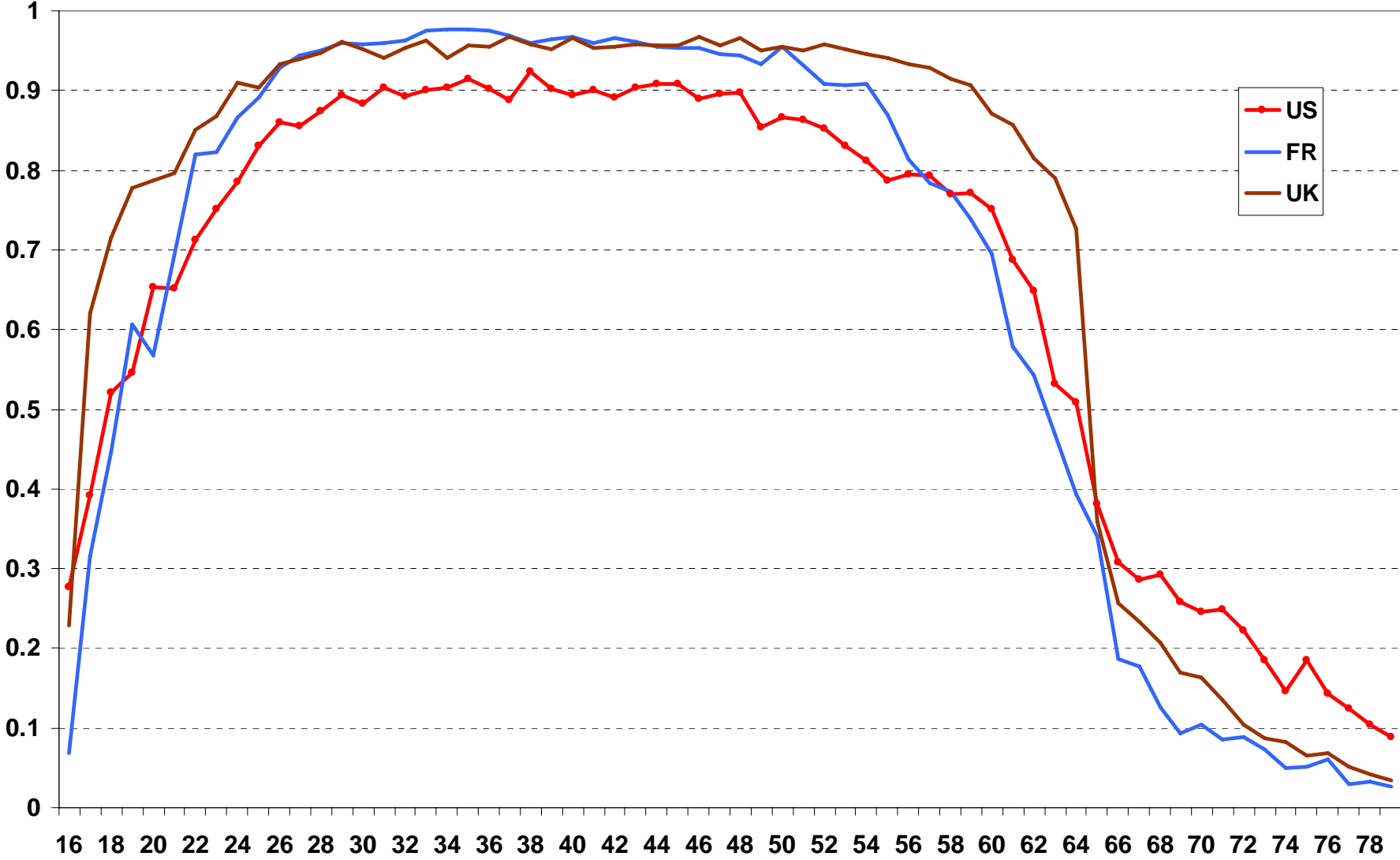
[www.ifs.org.uk/mirrleesreview](http://www.ifs.org.uk/mirrleesreview)

# Draw on - The Mirrlees Review: Tax by Design

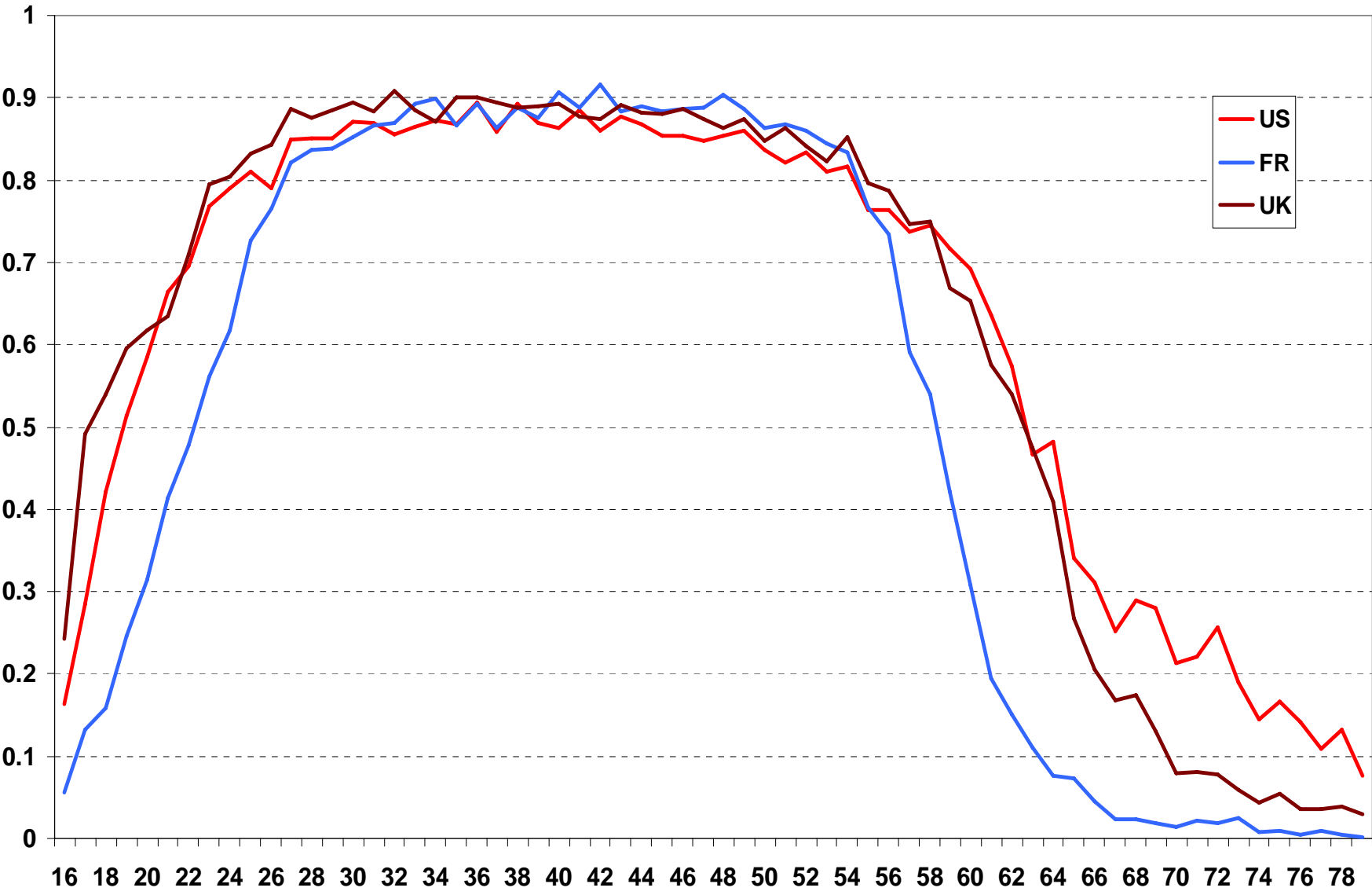
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- Give a flavour of the generalities
- Give an example or two of the specifics
- Can long-term tax reform and recession policies go together?
- An issue of transition to where we want to be, e.g.
  - Earned Income Tax Credit design
  - Cash-flow corporation tax
  - Provision of ‘insurance’ and automatic stabilisers..

# Male employment by age – US, FR and UK 1975

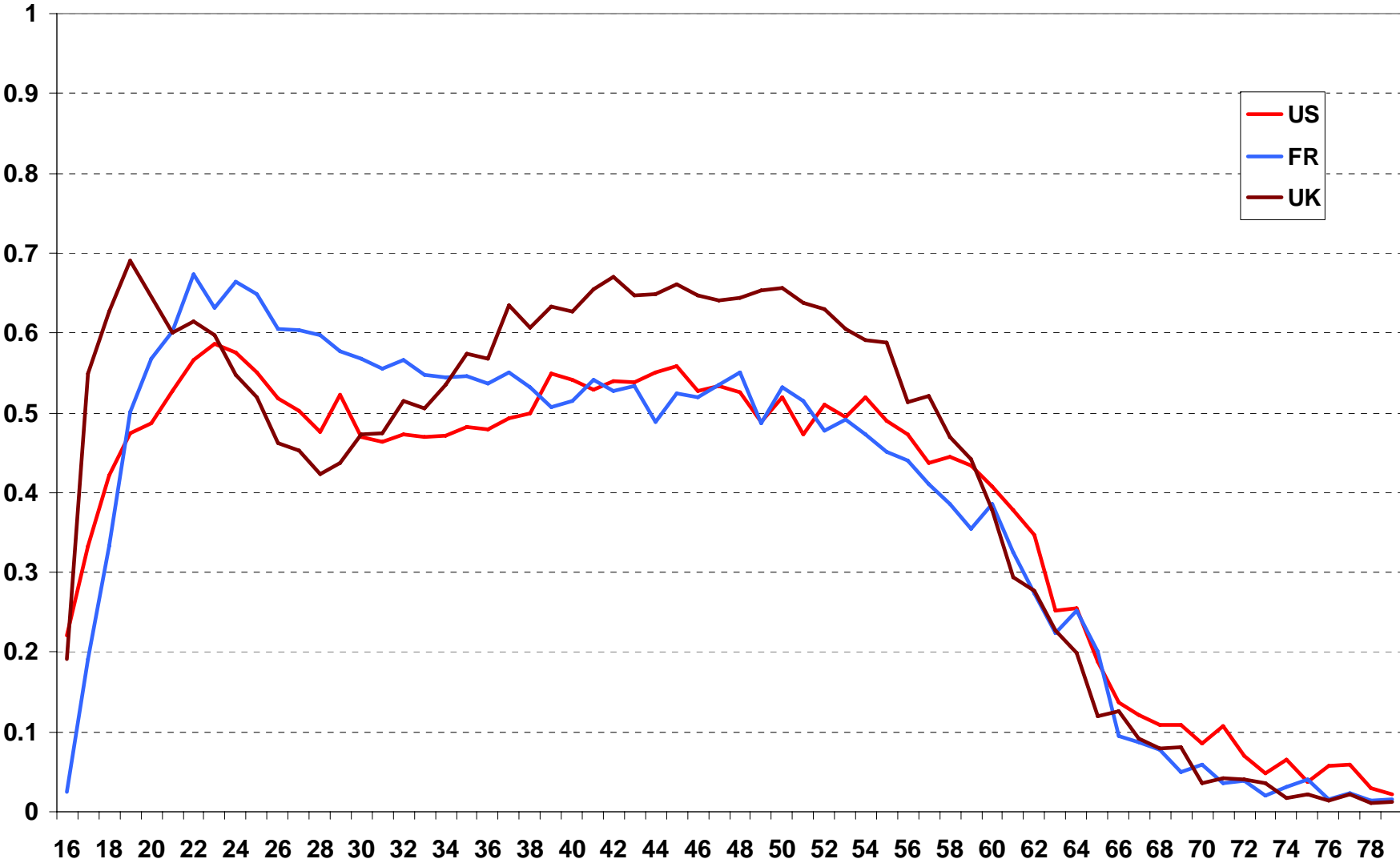


# Male employment by age – US, FR and UK 2005



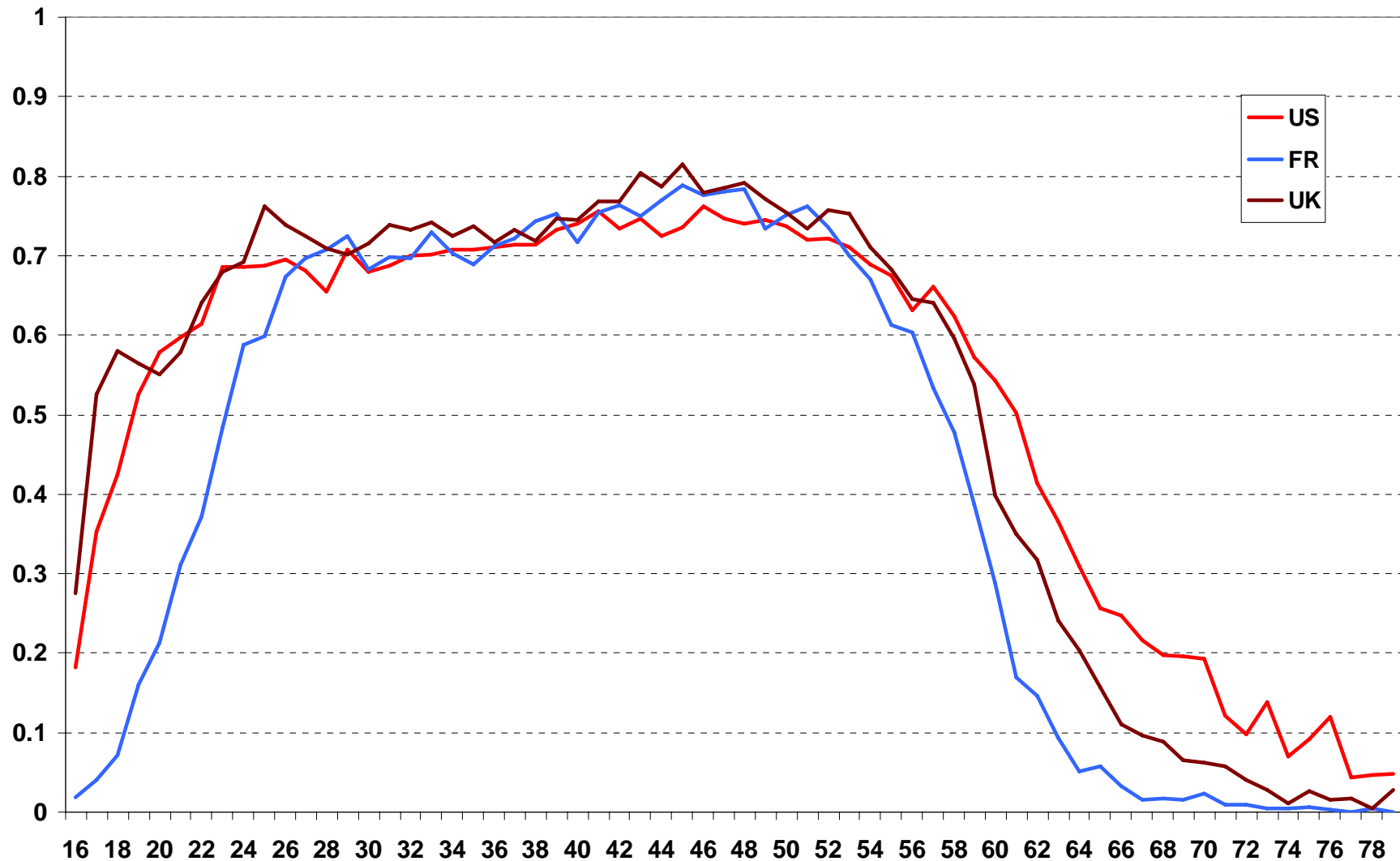
# Female Employment by age – US, FR and UK 1975

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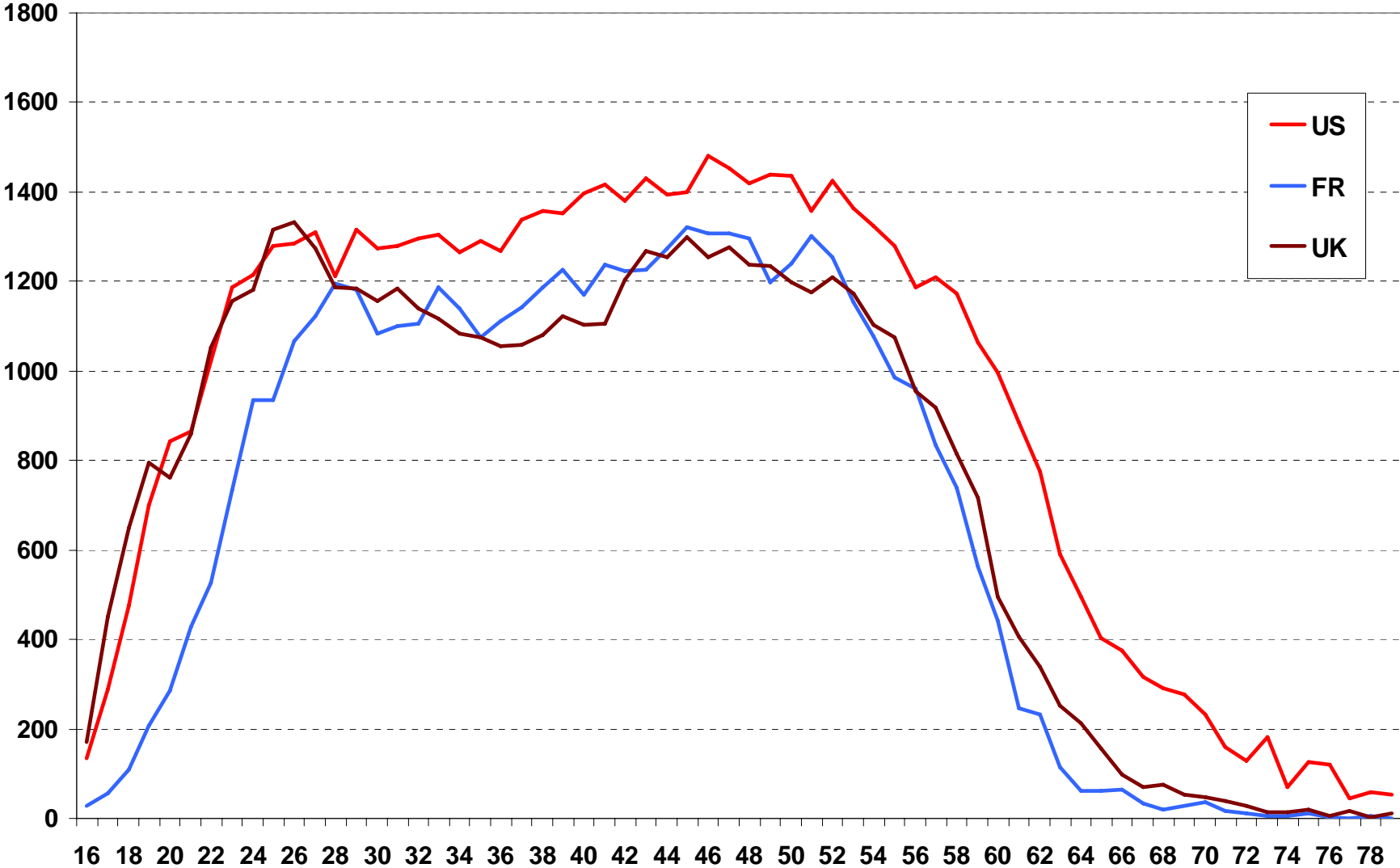




# Female Employment by age – US, FR and UK 2005



# Female Hours of Work by age – US, FR and UK 2005



## Motivated by a changed economic environment

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- Changes in employment patterns
  - growth of female labour supply
  - changes in youth employment
  - changes in ‘early retirement’ behaviour
- Changes in population
  - growth in single person & single parent households
  - growth in migration
- Growth in earnings and wealth inequalities
  - change in nature of income and earnings risks
- Growth in international capital markets
- Growth in home ownership, ....

## ... and increased empirical knowledge

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- labour supply responses for individuals and families
  - at the ‘intensive’ and ‘extensive’ margins
  - by age and demographic structure
- ability to simulate marginal and average rates
  - view the complete distribution of effective tax rates
- taxable income ‘elasticities’
  - using tax administration data
- intertemporal responses
  - for consumption and savings
- mechanisms people use to mitigate adverse shocks
  - how should the tax system provide ‘insurance’?

# Implications for reform

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The Review examines many aspects

- touch on three in this lecture

- Tax Rates on Earned Income
- Taxation of Savings
- Corporate Taxation
- Focus here on the interconnections between the taxation of earnings, savings and corporations
- An integrated and revenue neutral analysis of reform...

# Corporate tax reform

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- Aim for neutrality between debt and equity
  - exempt the normal rate of return on capital
- A progressive rate structure for the shareholder income tax, rather than a flat rate
  - progressive rates are required to for neutral tax treatment of incorporated and unincorporated firms
- A lower progressive rate structure on shareholder income than on labour income reflecting the corporate tax already paid
  - alignment between tax rates on corporate income, shareholder savings and labour income

# The taxation of saving

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- Saving just defers consumption
  - a tax on saving means taxing earnings spent tomorrow more than earnings spent today
- Under certain conditions, this decision to delay consumption tells us nothing about ability to earn
- So taxing saving is an inefficient way to redistribute - Atkinson & Stiglitz (1976)...
  - tax those with high earnings/spending, not those who choose to spend their earnings later
- Implies zero taxation of the *normal return* to capital (“expenditure tax”)

## The theoretical conditions do not hold if:

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- More able people have higher saving rates (eg more patient, longer life expectancy)
  - then saving indicates high ‘ability’, not just consumption preferences
- Individuals have uncertainty about earnings
  - if private productivity information is received after savings decisions, a tax on savings can be optimal
- ‘Standard’ life-cycle savings model is incorrect
  - credit constraints; myopia; self-control problems; framing effects
- Exciting new evidence on all of these



# Implications for reform of taxation of savings

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- Tax returns in excess of the normal rate
  - rents and luck are taxed
  - neutrality across assets and capital gains
- Progression in earnings taxation is a tax on saving
  - *but* in a direction dynamic optimal tax design suggests
- Asset tests can be optimal
  - for example, disability and income support
- Age-based taxation is important
  - related to choice of earnings tax rates in pre-retirement years and to families with young children
- Turn to the taxation of earned income....

# Consider the design of earned income taxation

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- Two questions:
- How do individuals' work decisions respond to taxes?
- Given behaviour, what system best meets policy goals?
- Importance of extensive margin of labour supply
  - for setting tax rates at 'low' earned incomes
- Importance of margins other than 'simple' labour supply
  - for setting 'top' rates
  - human capital choices important here too
- A key input is the 'elasticity' of earnings with respect to the tax incentives – the taxable income elasticity

# An optimal 'top' tax rate 't'

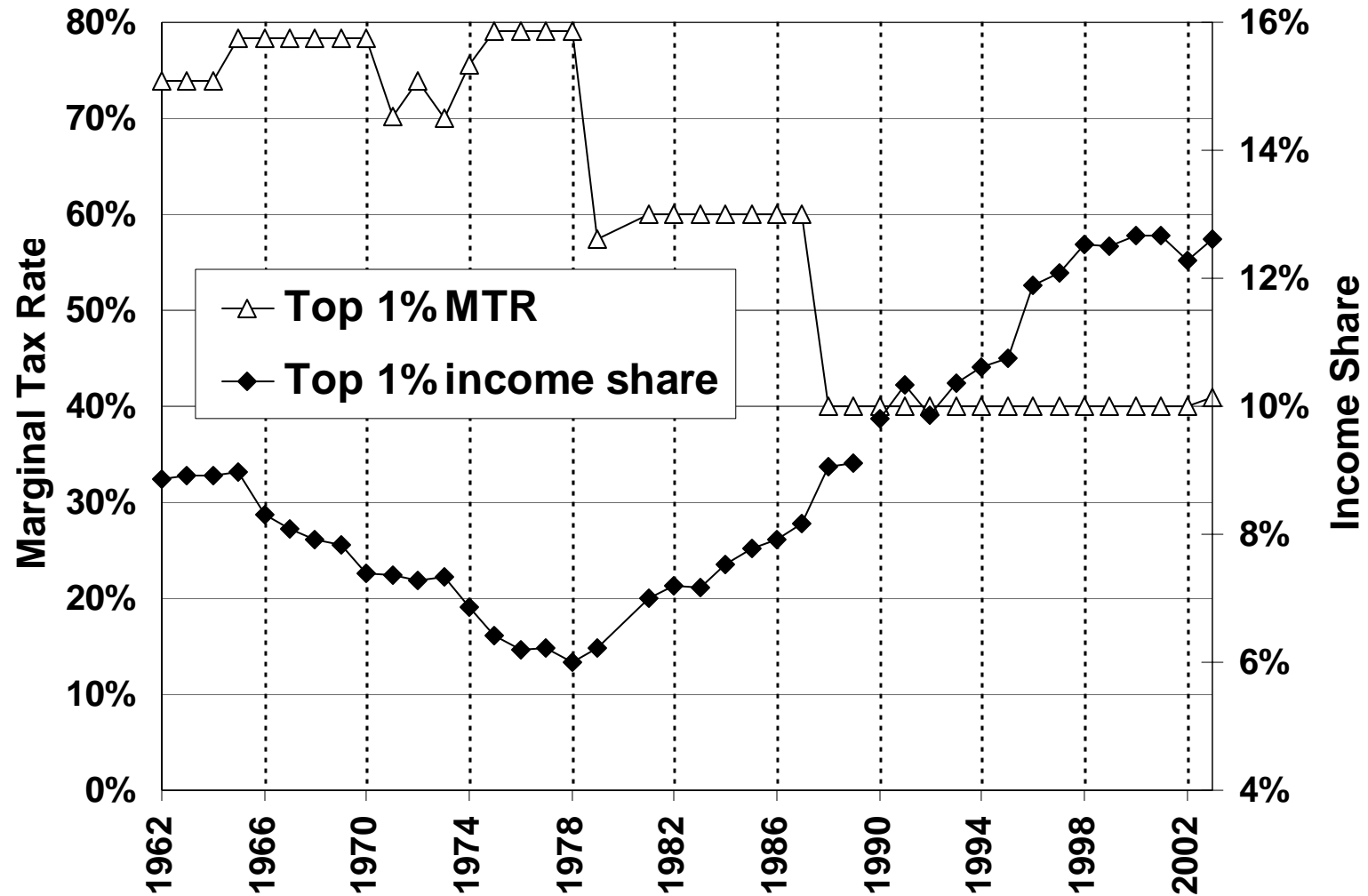
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- $e$  – taxable income elasticity
- with Pareto tail to the income distribution, 'optimal' design follows a simple rule

$$t = 1 / (1 + a \cdot e)$$

- where  $a$  ( $\approx 2$ ) Pareto parameter.
- Estimate  $e$  from the evolution of top 1% of incomes following large top MTR changes

## A. Top 1% Income Share and MTR, 1962-2003



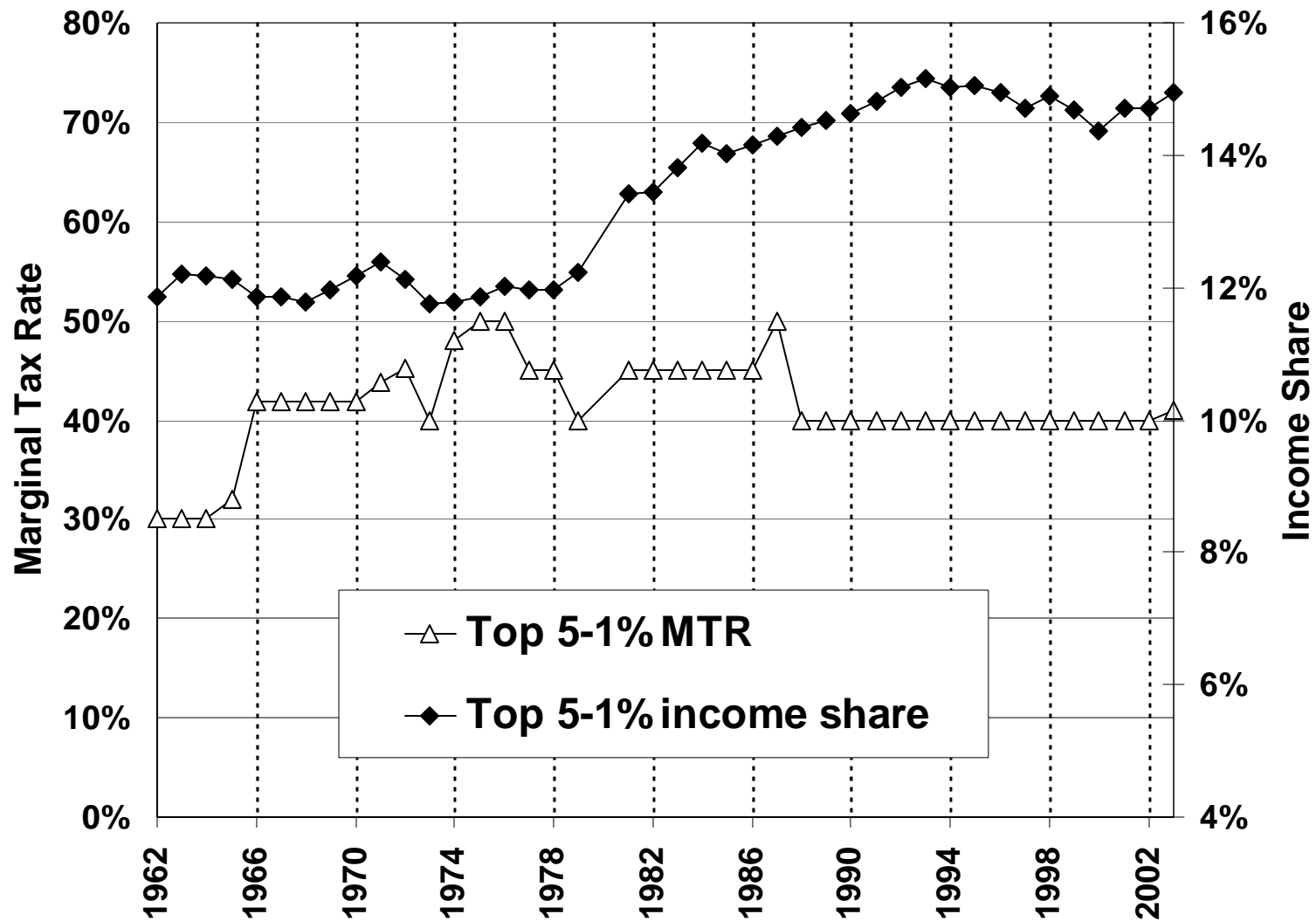
Source: Mirrlees Review

# An optimal top tax rate 't'

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- Top 1% income share increases from 6% to 12%
- Net-of-tax rate increases from 20% to 60%
  - elasticity  $e = 2/3$ ,  $t = 43\%$
- But this is bad evidence...
- Is the relative growth in top 1% due only to tax cuts?
  - unreliable evidence on response elasticity...
  - compare with 1-5% group

## B. Top 5-1% Income and MTR, 1962-2003



Source: Mirrlees Review

# An optimal top tax rate 't'

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- Taxable income elasticity falls to around .45
  - implies an 'optimal' top incomes tax rate a little over 50%
  - not 40%!

# The Nature of (Reliable) Evidence

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- Evidence in this policy area for three slightly different objectives:
  - A clear and accurate impact measure of a specific policy.
  - An ability to examine alternative policy proposals.
  - A mechanism for improving the design of policy
- Three different approaches:
  - Randomised-control experiments
  - Quasi-experimental evaluations
  - Microeconomic estimation/simulations
- Often thought of as competitors - but compliment each other well – we make use of all three!

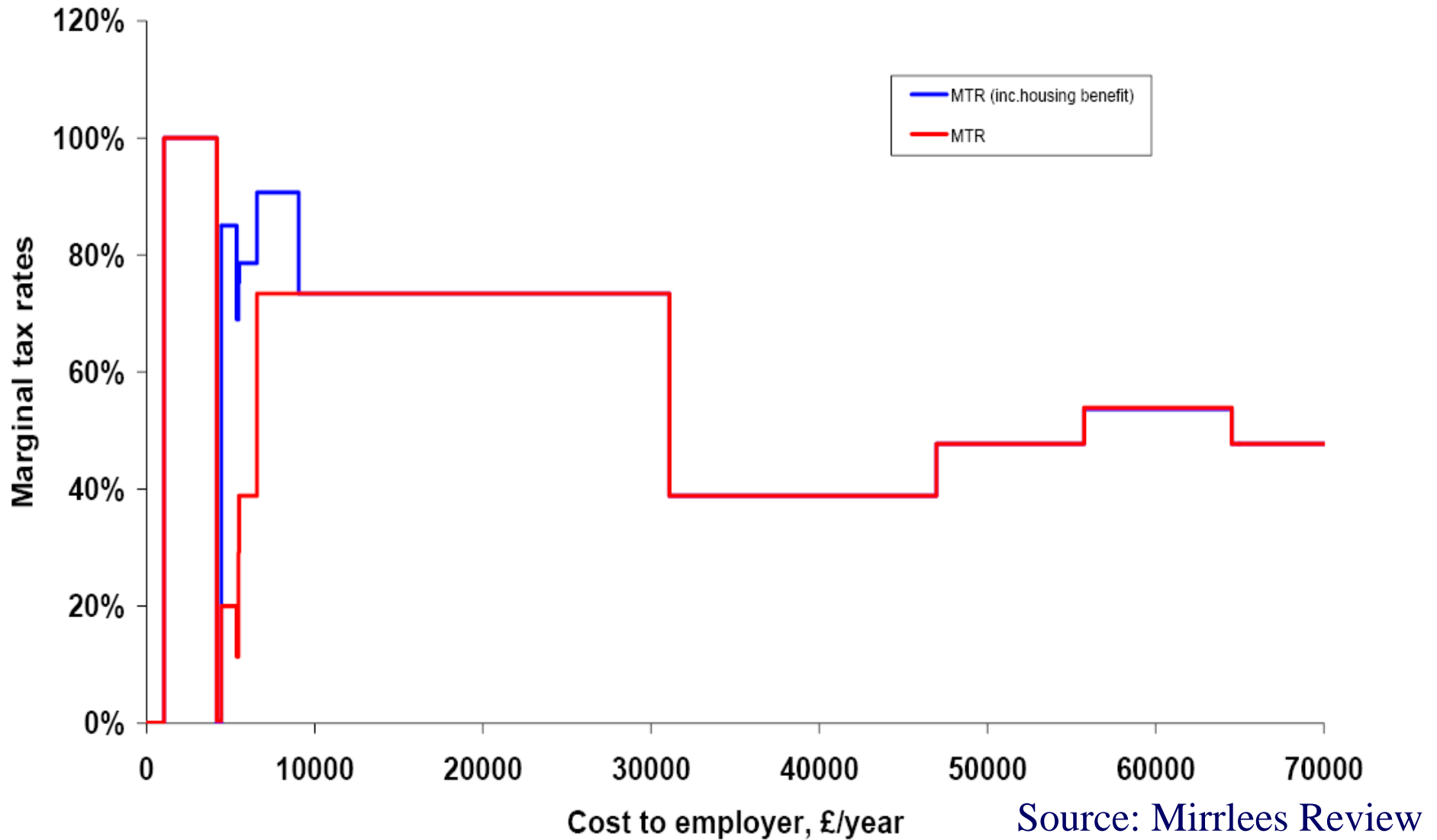


# Tax rates on lower incomes

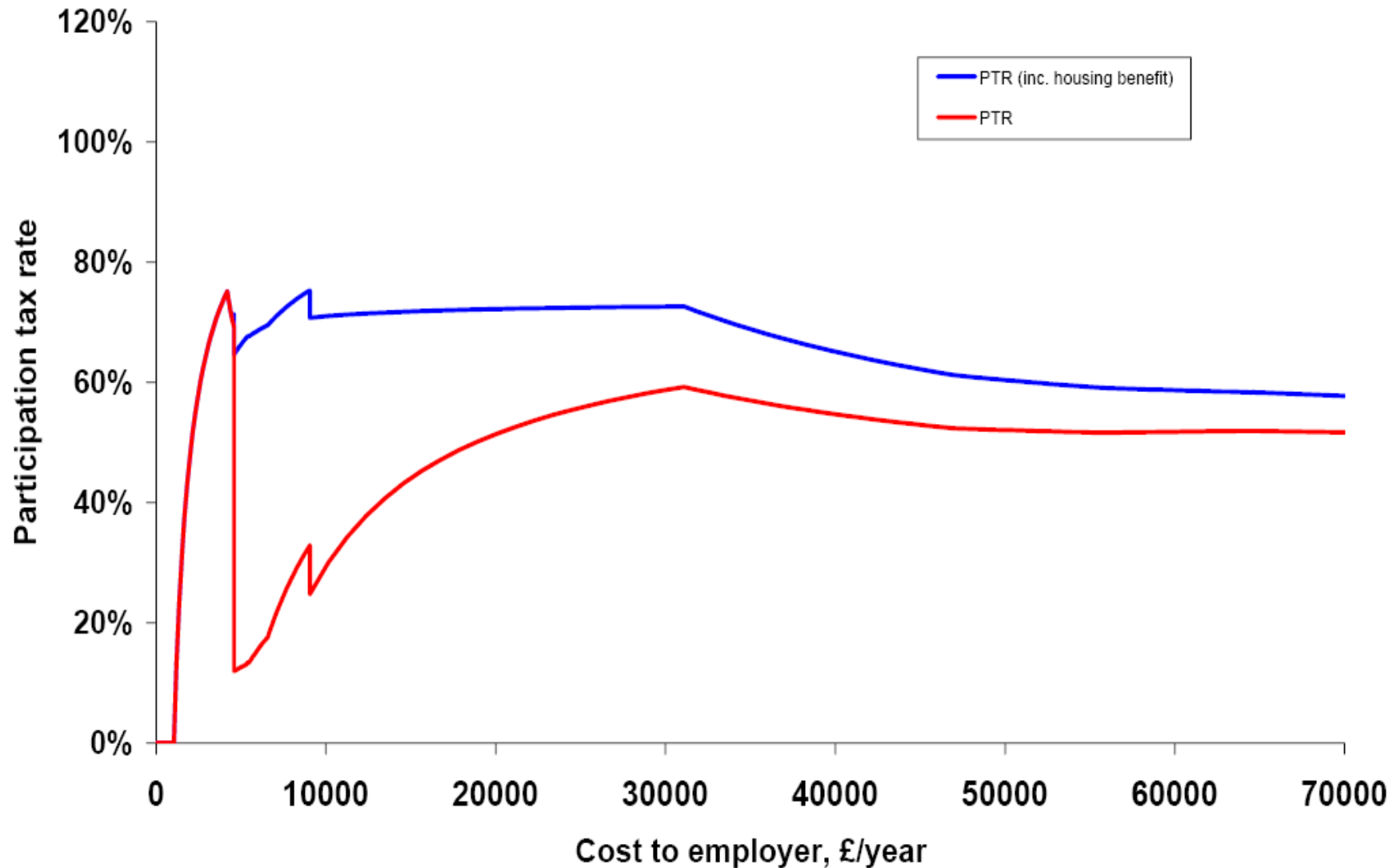
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- Participation tax rates at the bottom are very high
- Marginal tax rates well over 80% for low income working families because of phasing-out of means-tested benefits
  - interactions between benefits, tax credits and the income tax system

# Tax rates on lower incomes - UK



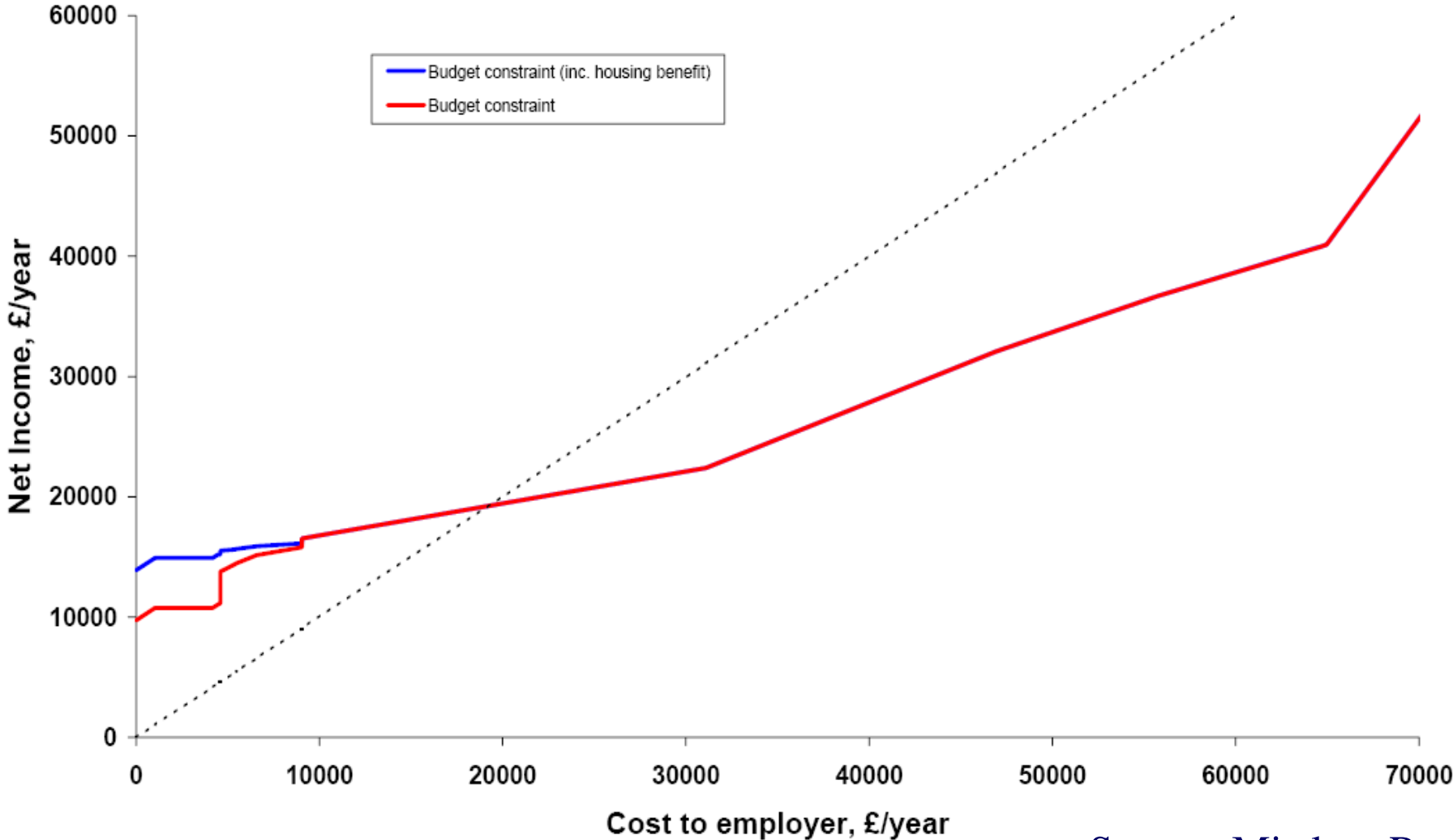
# Effective Participation Tax Rates - UK



Source: Mirrlees Review

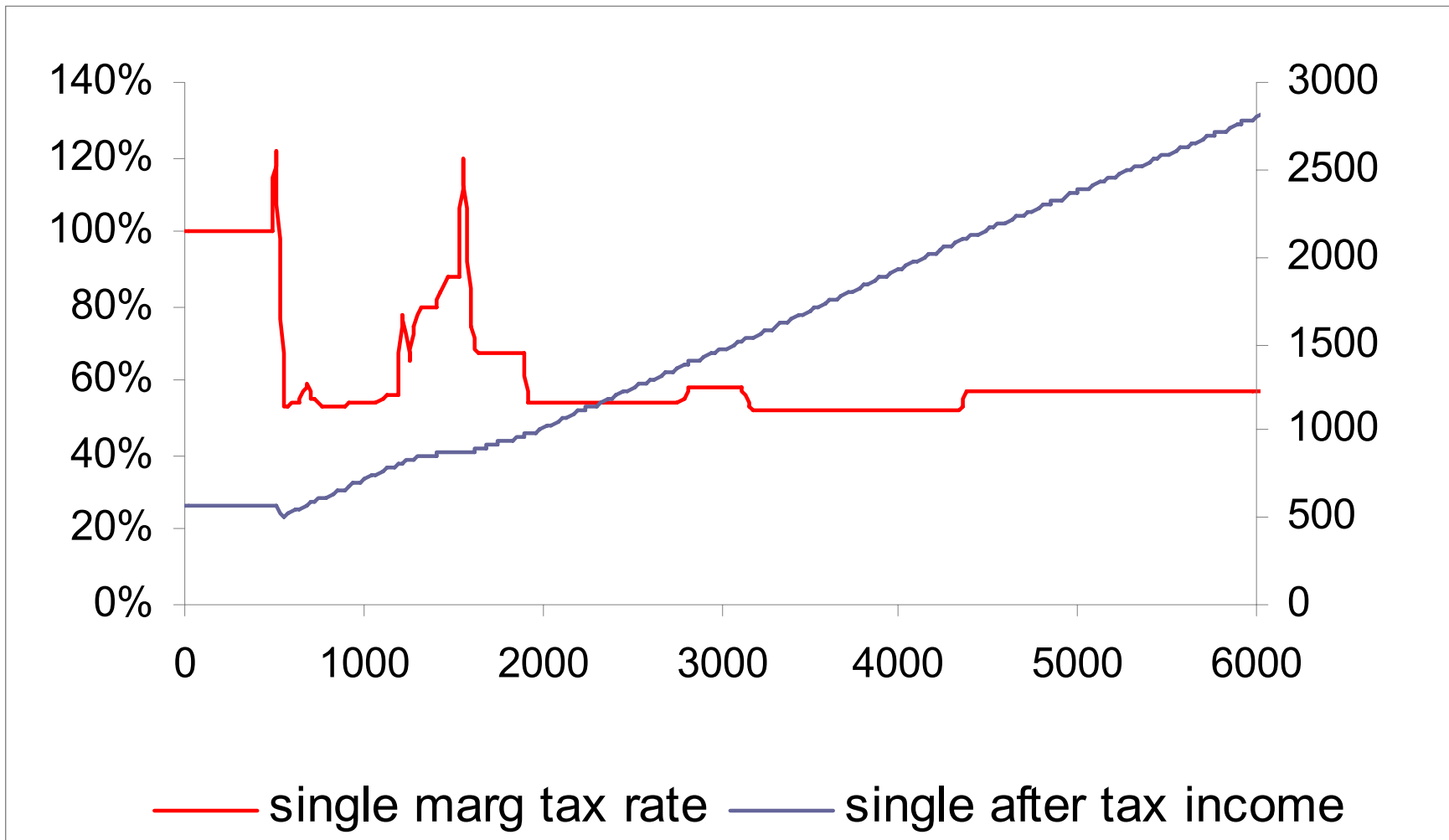
# Tax rates on lower incomes - UK

Figure: Budget constraint, lone parents

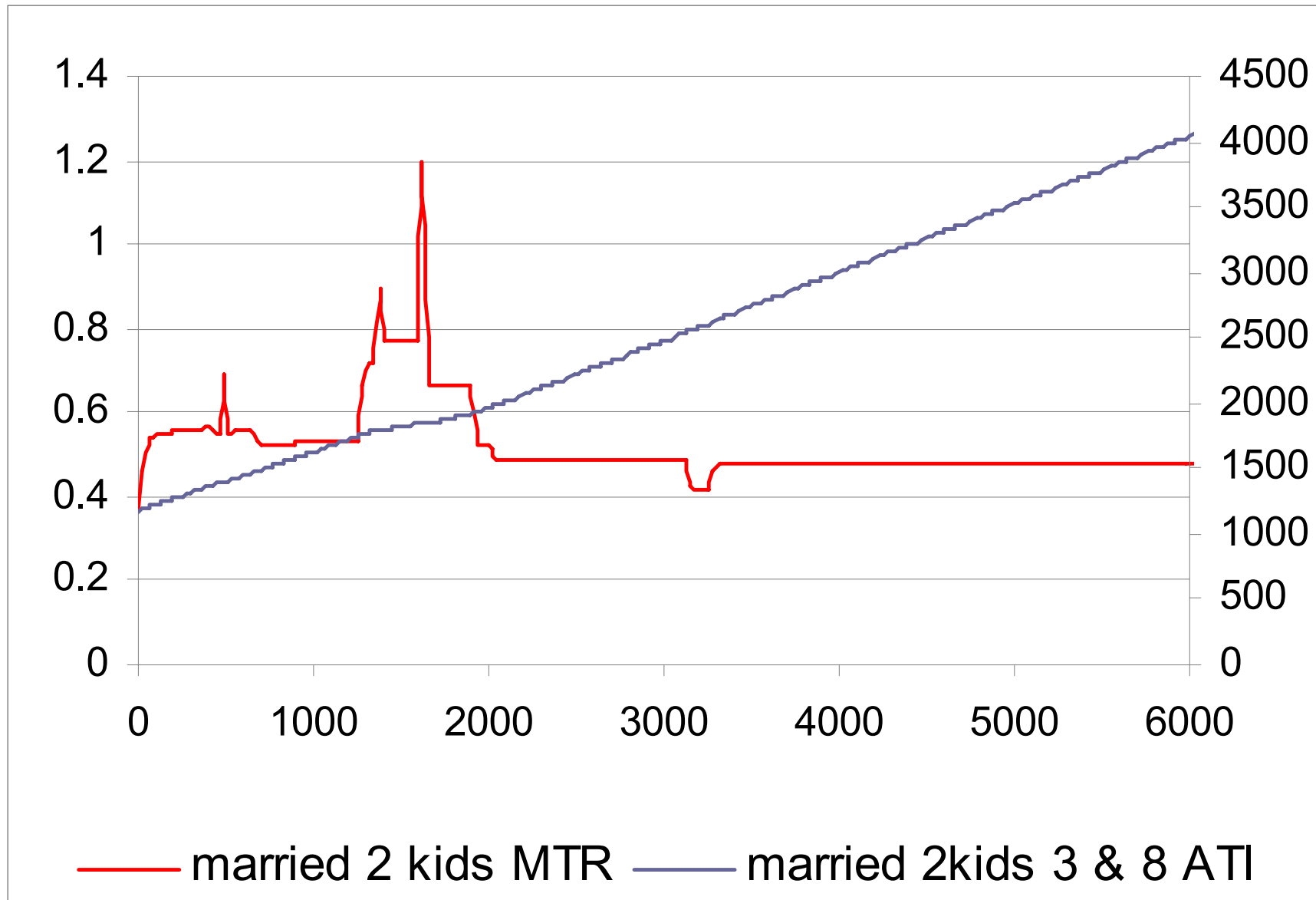


Source: Mirrlees Review

# Tax rates on lower incomes - France



# Tax rates on lower incomes - France



## But are these effective tax rates too high?

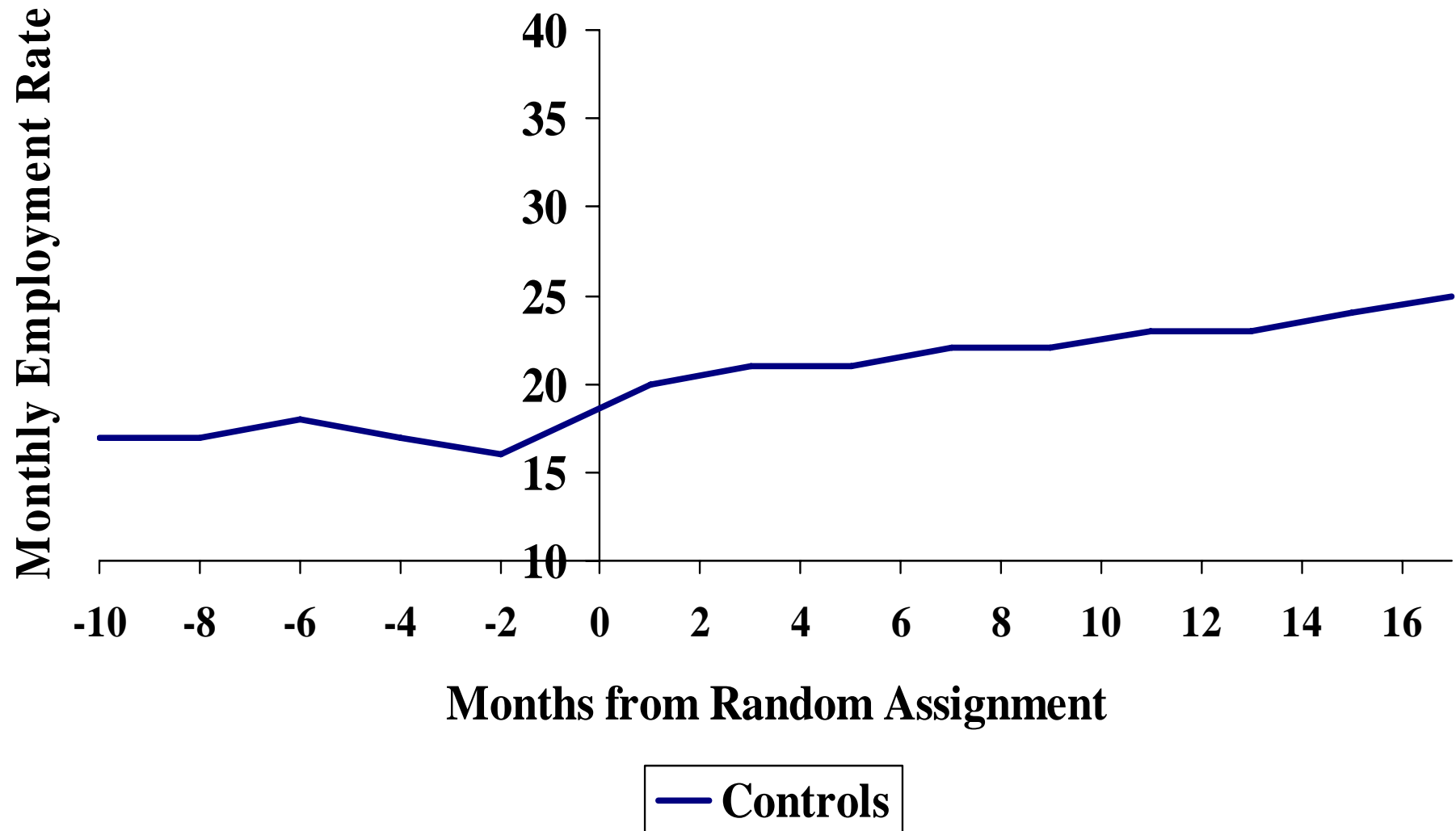
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- New insights from optimal tax theory show even *negative* marginal tax rates can be an optimal design
  - if extensive margin responses are large
  - labour supply estimation suggest extensive margin is more responsive to incentives than intensive margin for some types of low skill individuals
- With participation effects, high tax rates at the bottom are no longer necessarily desirable and negative participation tax rates can be optimal
  - ‘evidence’ suggests especially the case for the lower skilled at pre-retirement ages and for mothers

# What is the evidence at the extensive margin?

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## SSP Experiment: Monthly Employment Rate for a Single Parent with One Child

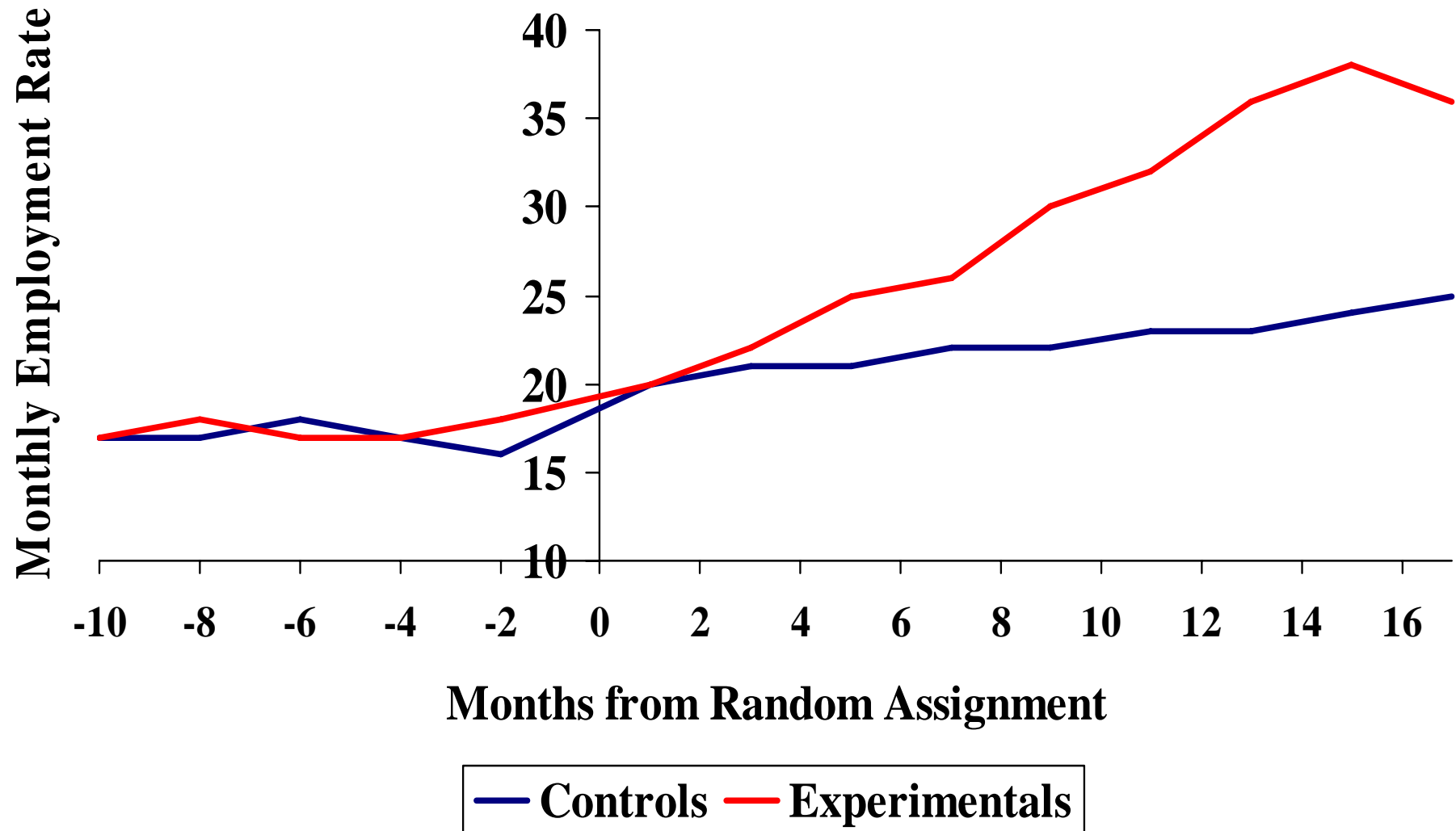




# What is the evidence at the extensive margin?

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## SSP Experiment: Monthly Employment Rate for a Single Parent with One Child



# Labour Supply Elasticities

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## (a) Mother with Youngest Child Aged 11-18

<i>Earnings</i>	<i>Density</i>	<i>Extensive</i>	<i>Intensive</i>
0	0.3966		
80	0.1240	0.5029	0.5029
140	0.1453	0.7709	0.3944
220	0.1723	0.7137	0.2344
300	0.1618	0.4920	0.0829
<i>Participation elasticity</i>		1.1295	

Structural microeconomic estimates

Source: Blundell and Shephard (2008)

# Labour Supply Elasticities

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## (c) Mother with Youngest Child Aged 0-4

<i>Earnings</i>	<i>Density</i>	<i>Extensive</i>	<i>Intensive</i>
0	0.5942		
80	0.1694	0.2615	0.2615
140	0.0984	0.6534	0.1570
220	0.0767	0.5865	0.1078
300	0.0613	0.4984	0.0834
<i>Participation elasticity</i>		0.6352	

Structural microeconomic estimates

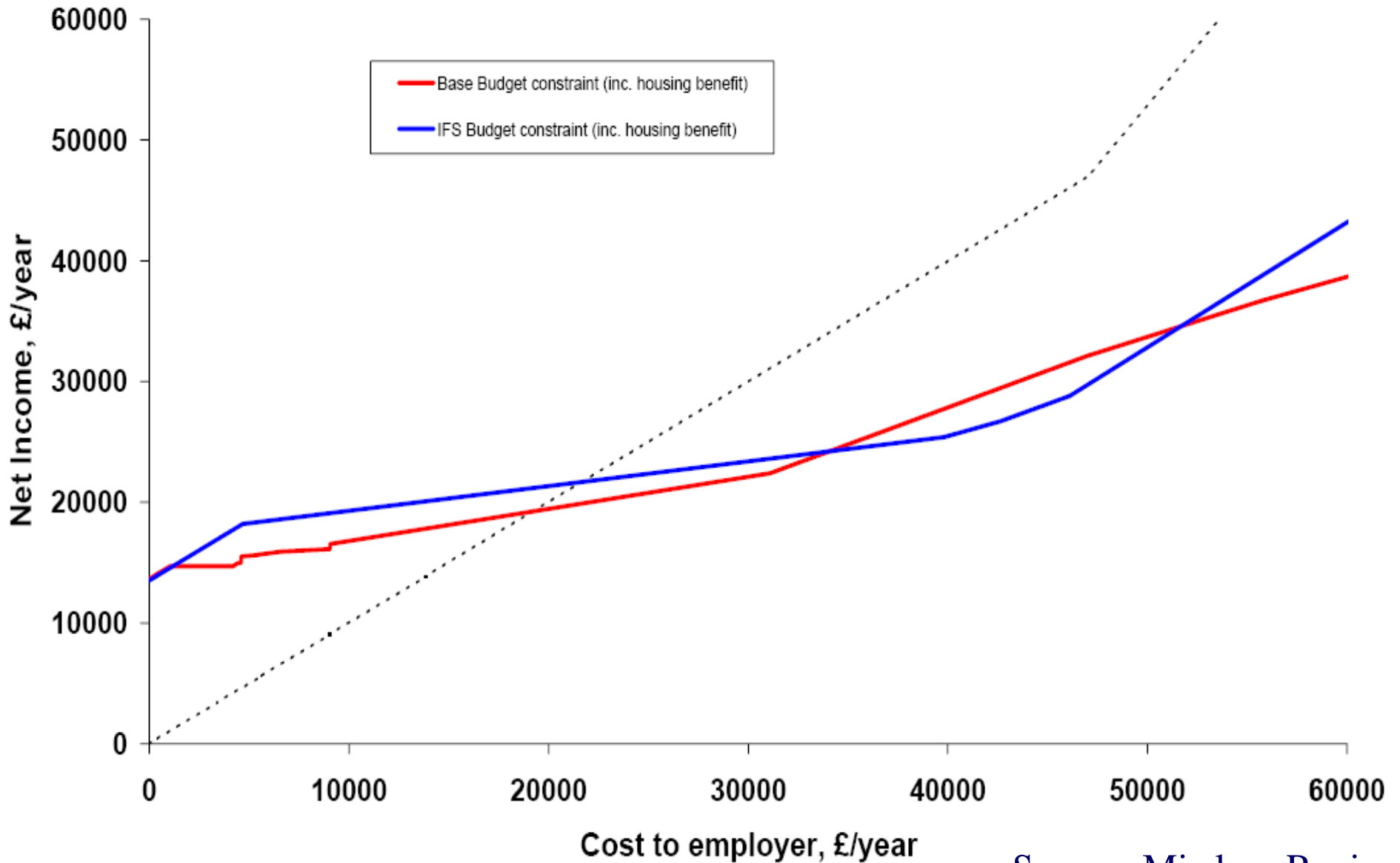
Source: Blundell and Shephard (2008)

## An 'optimal' design

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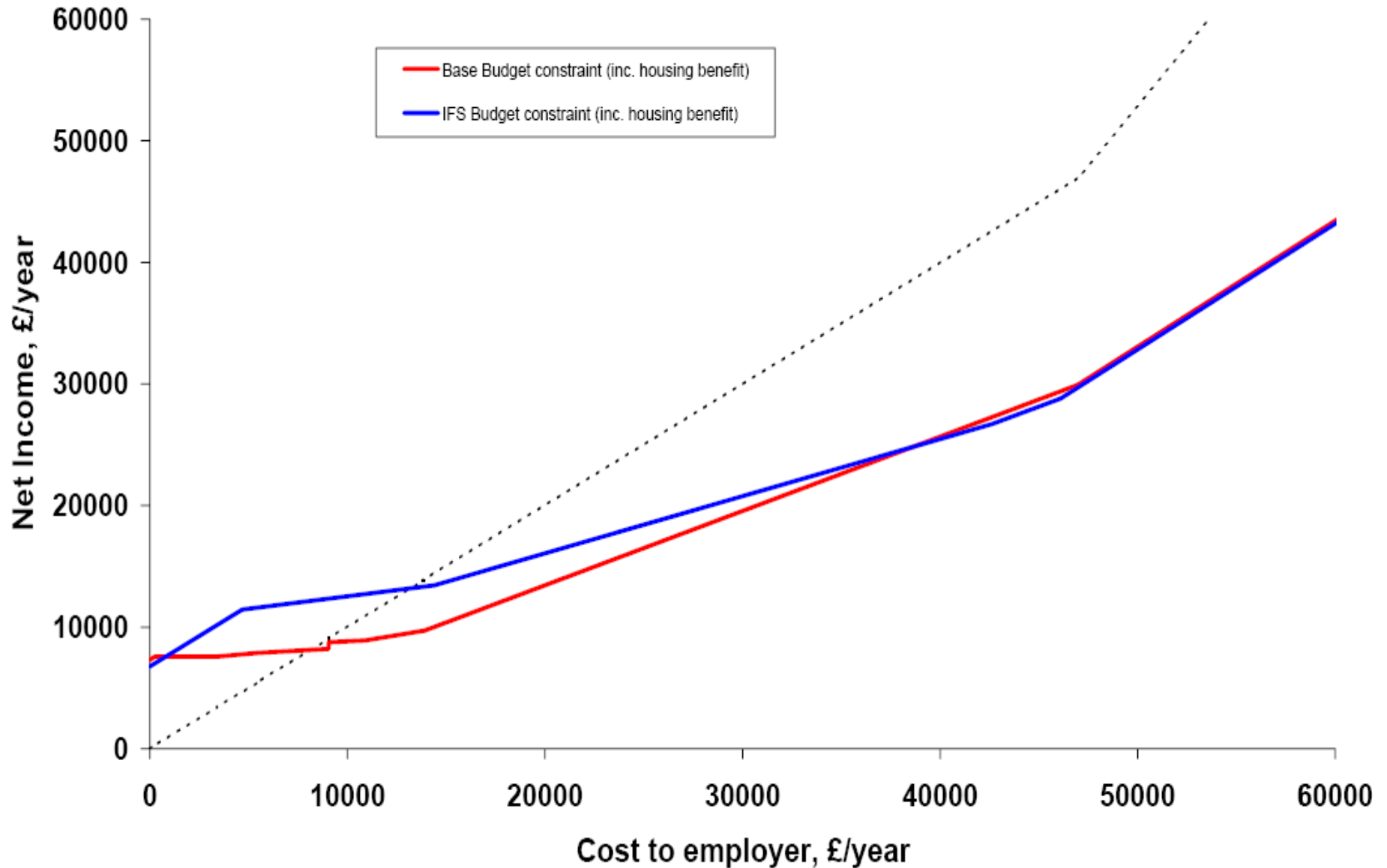
- Given this evidence, insights from optimal tax analysis contrast with the work incentives inherent in many tax systems
  - gross income taken in tax and withdrawal of benefits when people enter work at low earnings is too high
  - some specific benefits, like housing benefit in the UK, have extremely high withdrawal rates. This exacerbates the problem of undesirably high marginal rates
- Matching response elasticities suggests a dynamic age-based tax design, structured around the age of the youngest child and pre-retirement ages.

# IFS Tax Rate Reform: lone parent



Source: Mirrlees Review

# IFS Tax Rate Reform: single with no children



Source: Mirrlees Review

# Many more specific examples

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- [www.ifs.org.uk/mirrleesreview](http://www.ifs.org.uk/mirrleesreview)
- Consider the tax system as an integrated whole
- Take a life-cycle view of the way taxation impacts on behaviour
- Use new ideas from tax design theory
- Use robust empirical evidence
- Draw lessons for
  - taxation of earnings
  - taxation of saving and human capital
  - taxation of companies

# Long-term tax reform and recession policies

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- An issue of transition to where we want to be, e.g
- Earned Income Tax Credit design
  - increasing the difference between employed costs and employee net earnings for the lower skilled
- Cash flow corporation tax
  - exempts the normal return
  - provides up-front cash and tax payments when returns are earned
  - provides loss insurance through symmetric treatment of losses
- Others,... temporary VAT cut, environment tax, but I don't have time...



The End!

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Designing a Tax System for the 21st Century:  
The Role of Theory and Evidence

*2008 Prix Jean-Jacques Laffont Lecture*

for more theory and evidence see

The Mirrlees Review:

Tax by Design

<http://www.ifs.org.uk/mirrleesreview/>