

Designing a Tax System for the 21st Century:

The Role of Theory and Evidence

Prix Jean-Jacques Laffont Lecture

Auditorium du Museum d'Histoire Naturelle

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Why re-design taxes?

Changes in the world:

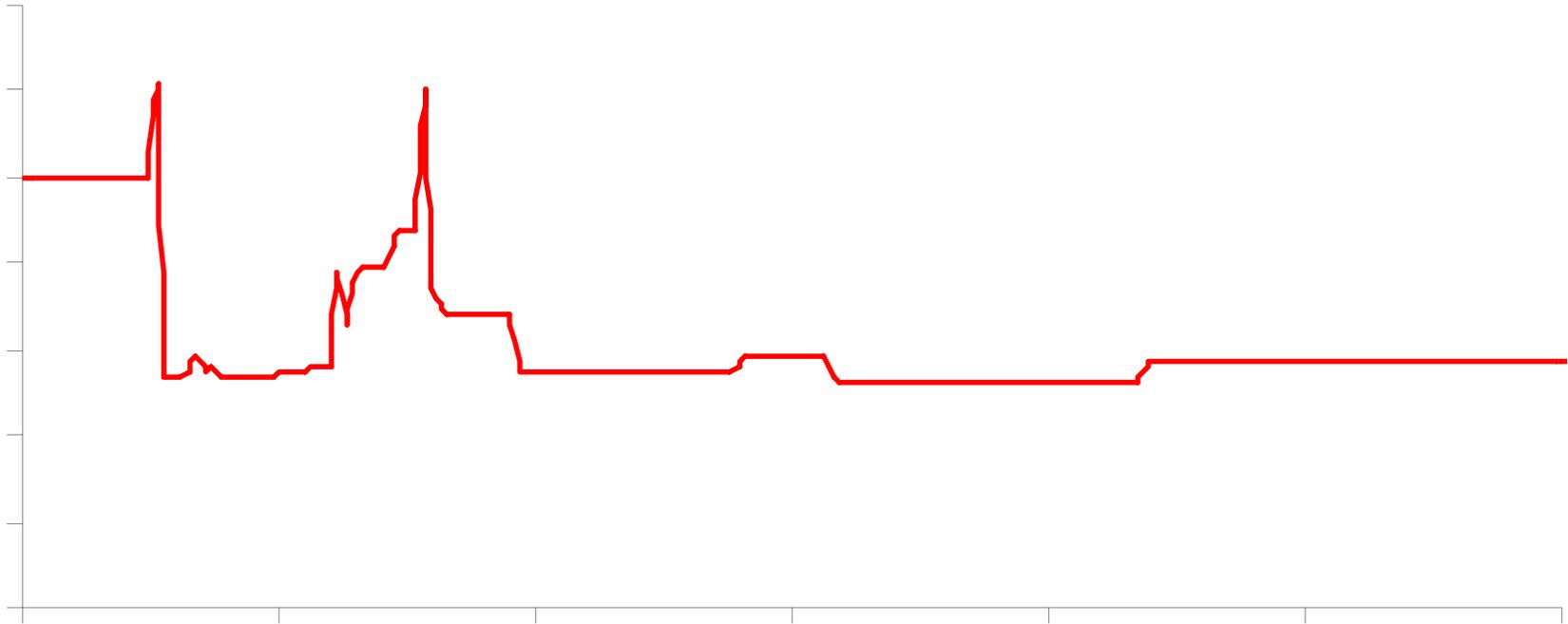
- Capital income harder to tax (globalisation)
- Challenges to indirect taxes (VAT fraud, IT)
- Policymakers have new objectives (environment)
- Changing institutional environment/players (ECJ)
- Demographic change (ageing, lone parenthood)
- Growth in wage and wealth inequalities
- Mobility of firms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

Why re-design taxes?

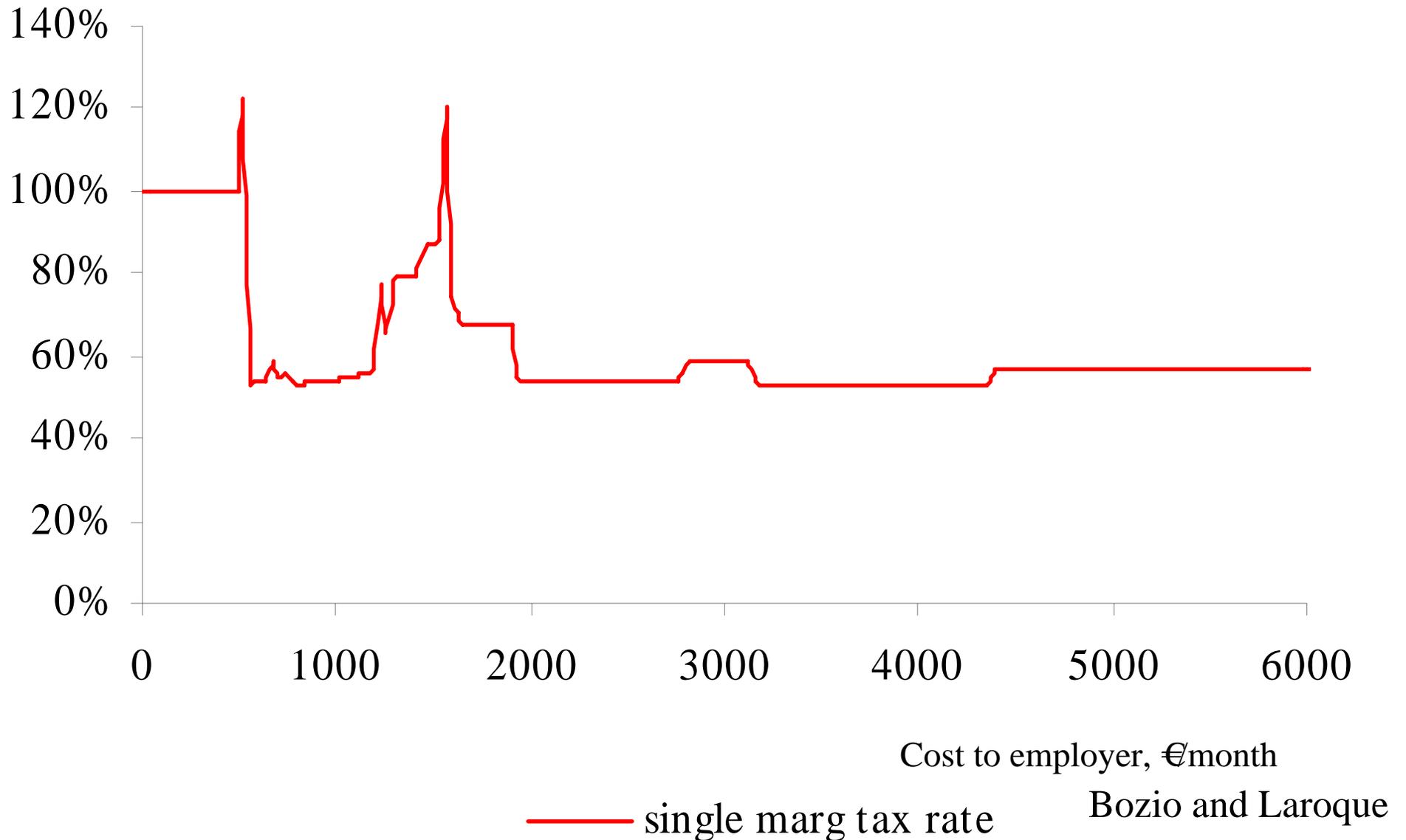
Changes in our understanding:

- 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

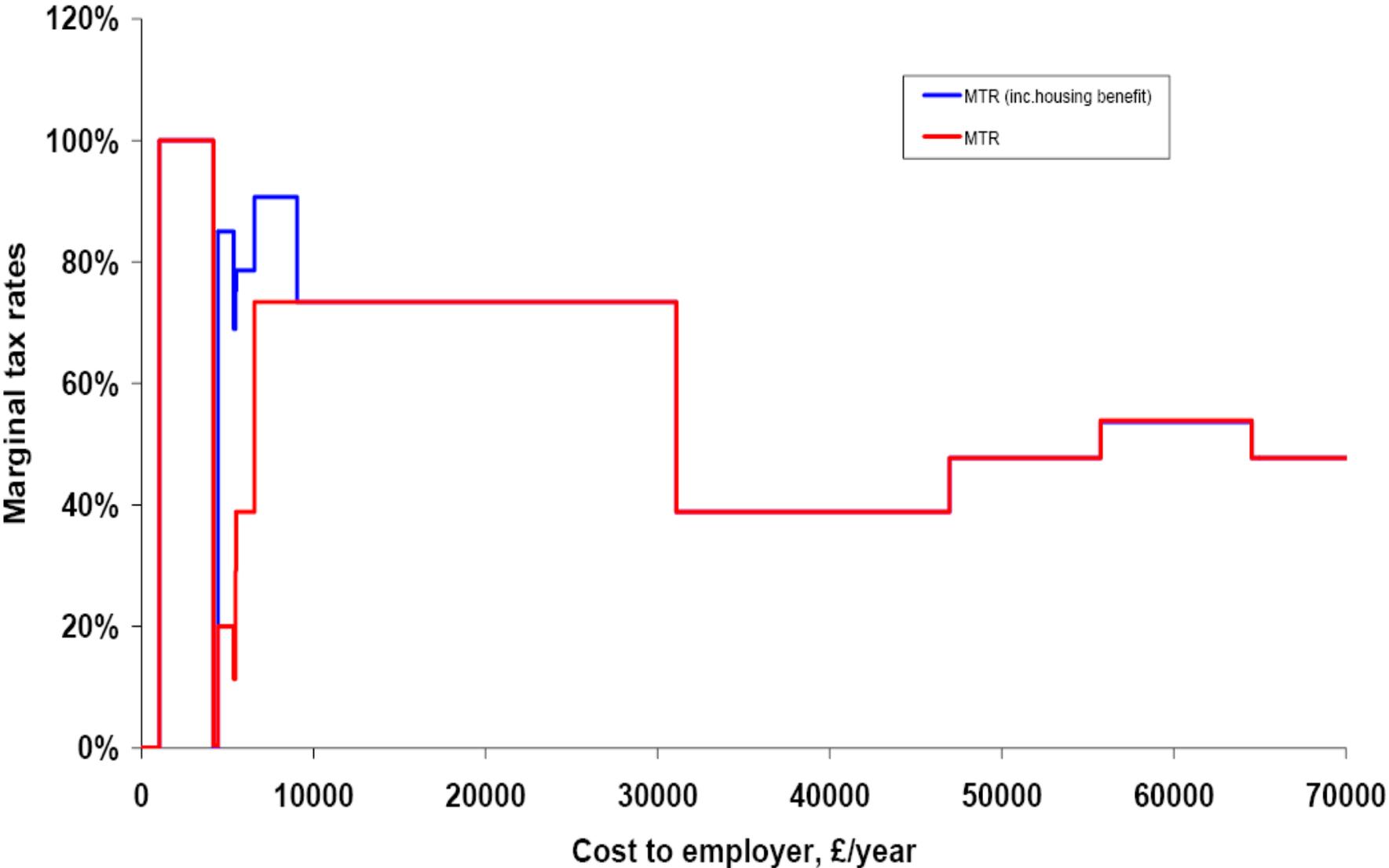
A Futuristic 21st Century city skyline?



No! Effective marginal tax rates in 21st Century France



Effective marginal tax rates on earned income in UK



However, simple designs are not always the best

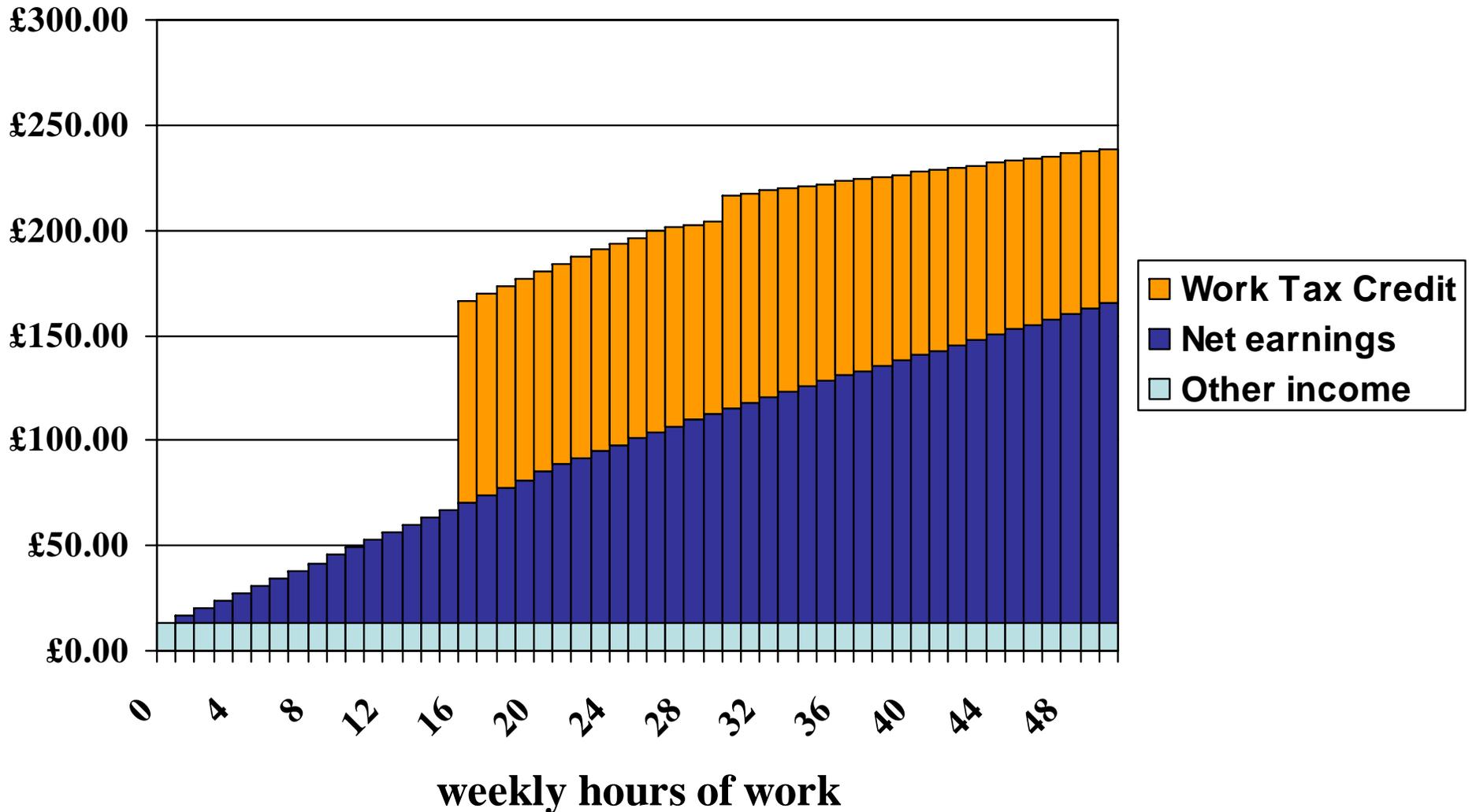
for skylines

- 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.

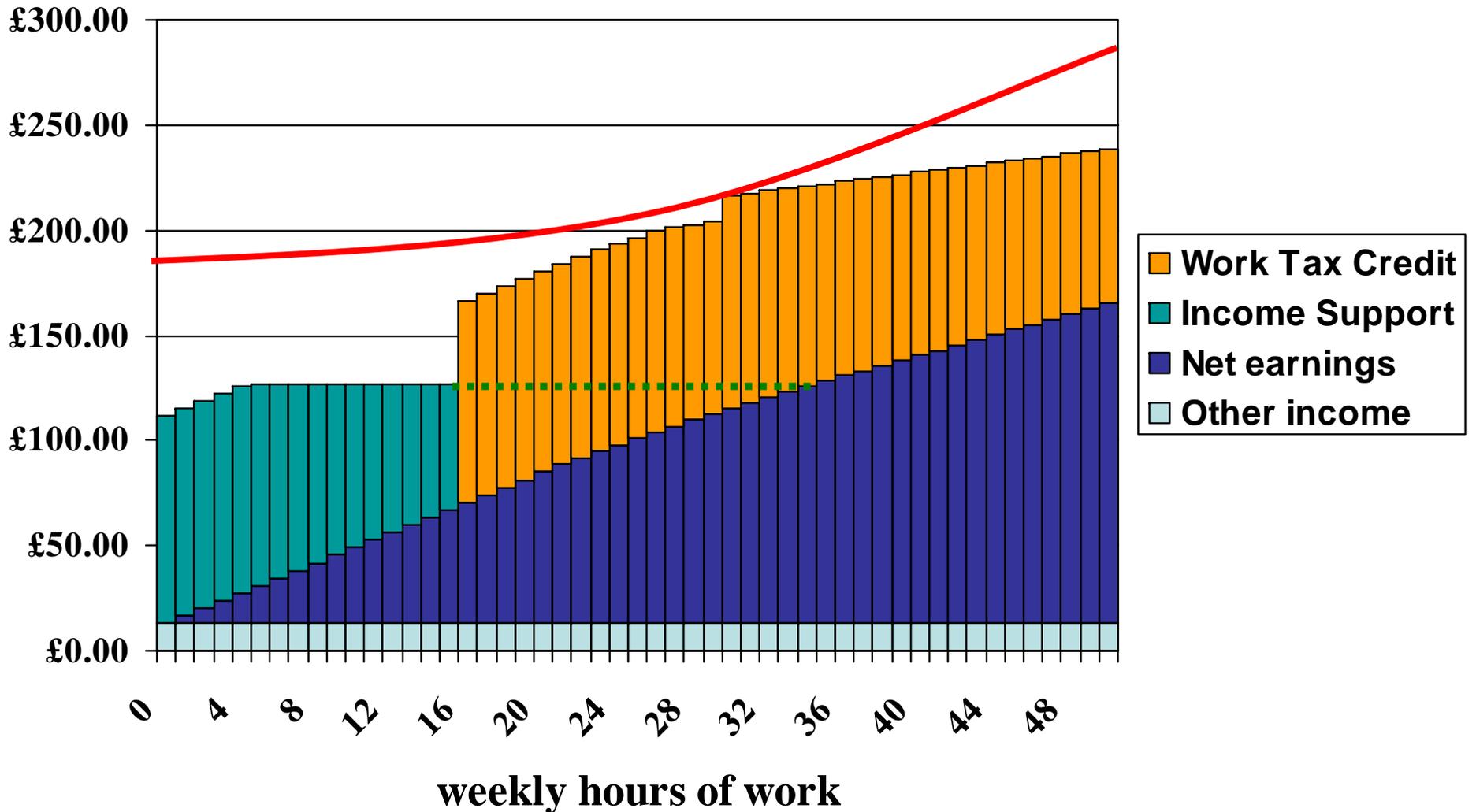
Complexity often arises via unintended policy interactions

The interaction of taxes and benefits in the UK



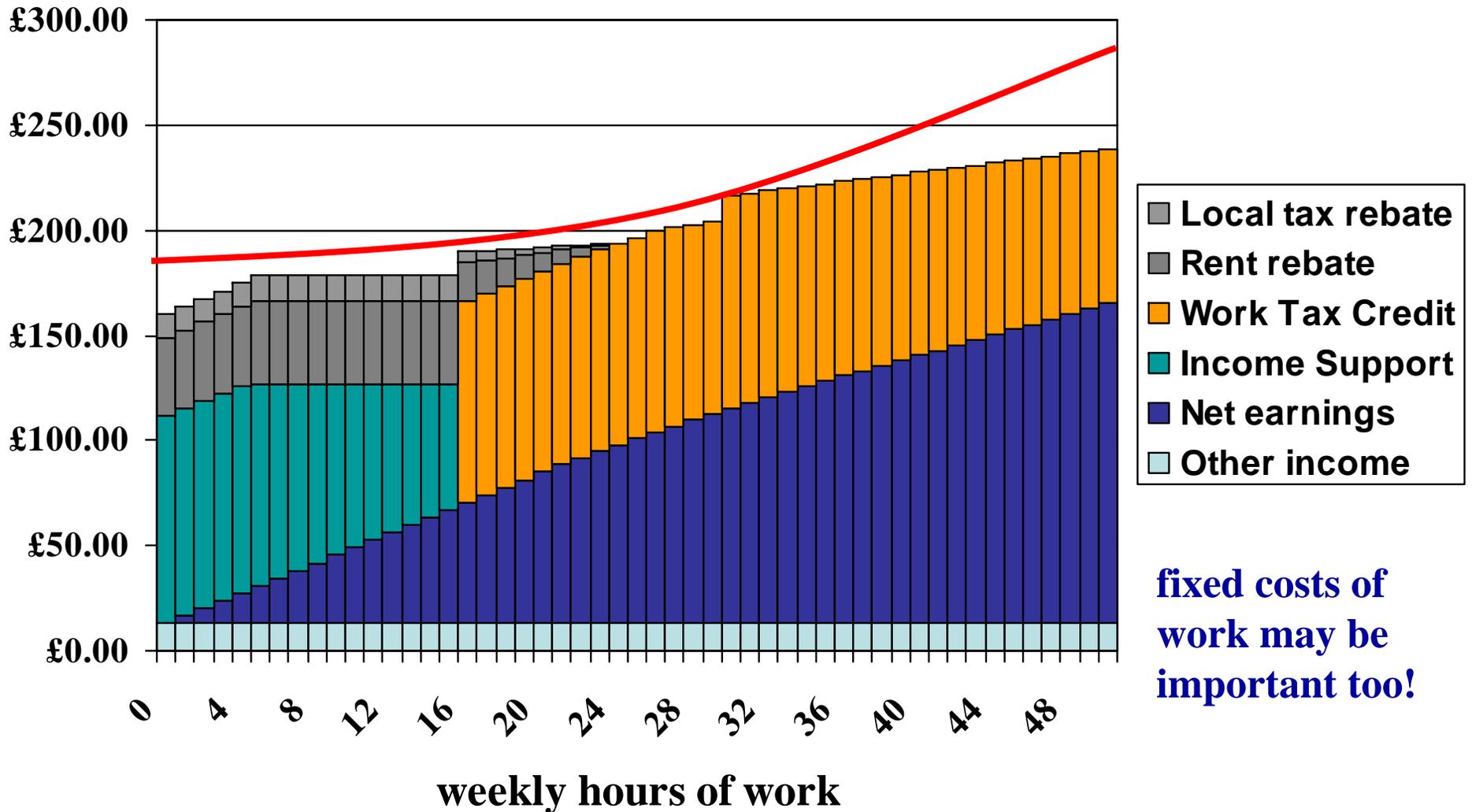
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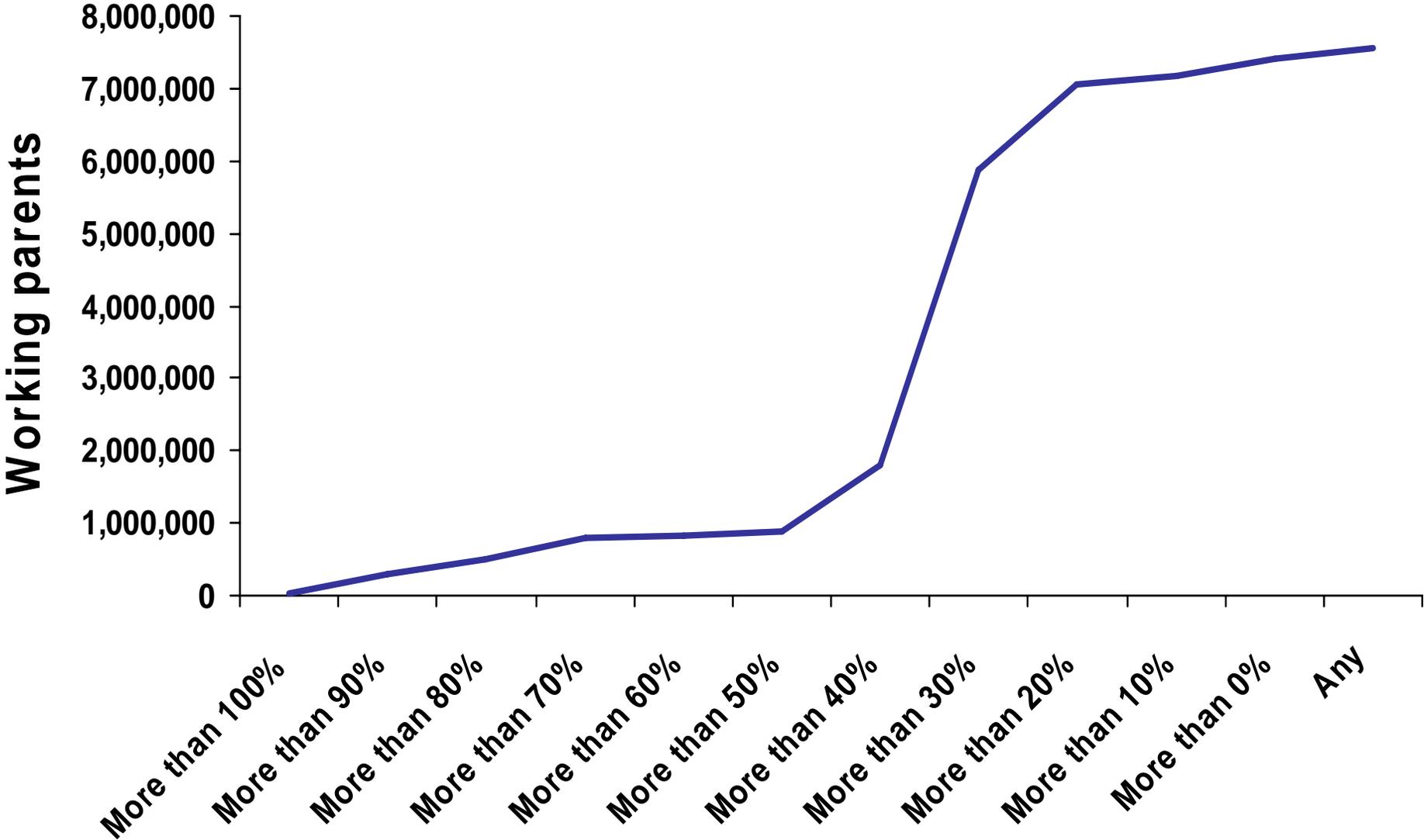


Complexity often arises via unintended policy interactions

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

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

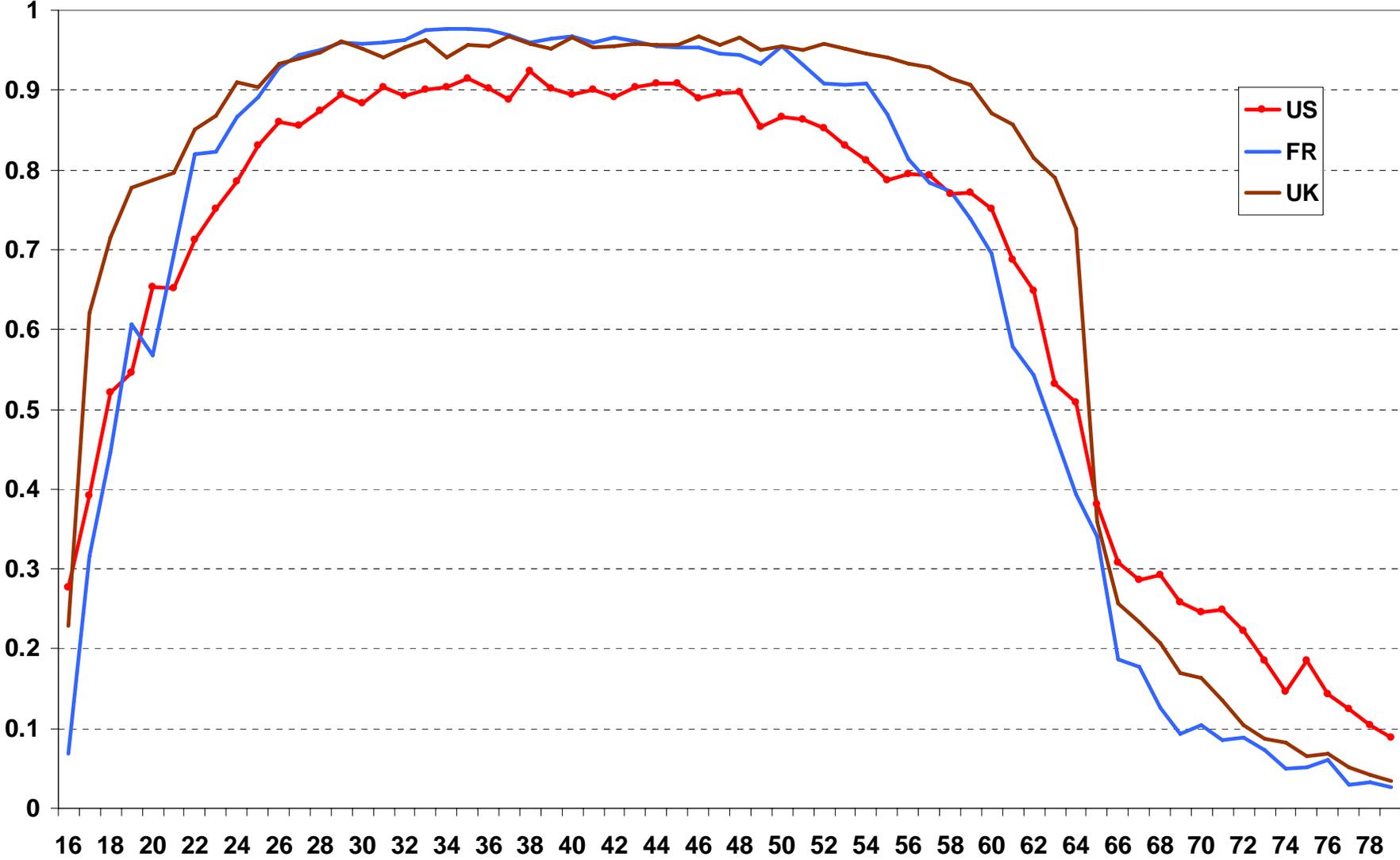
- pre-publication versions available online:

www.ifs.org.uk/mirrleesreview

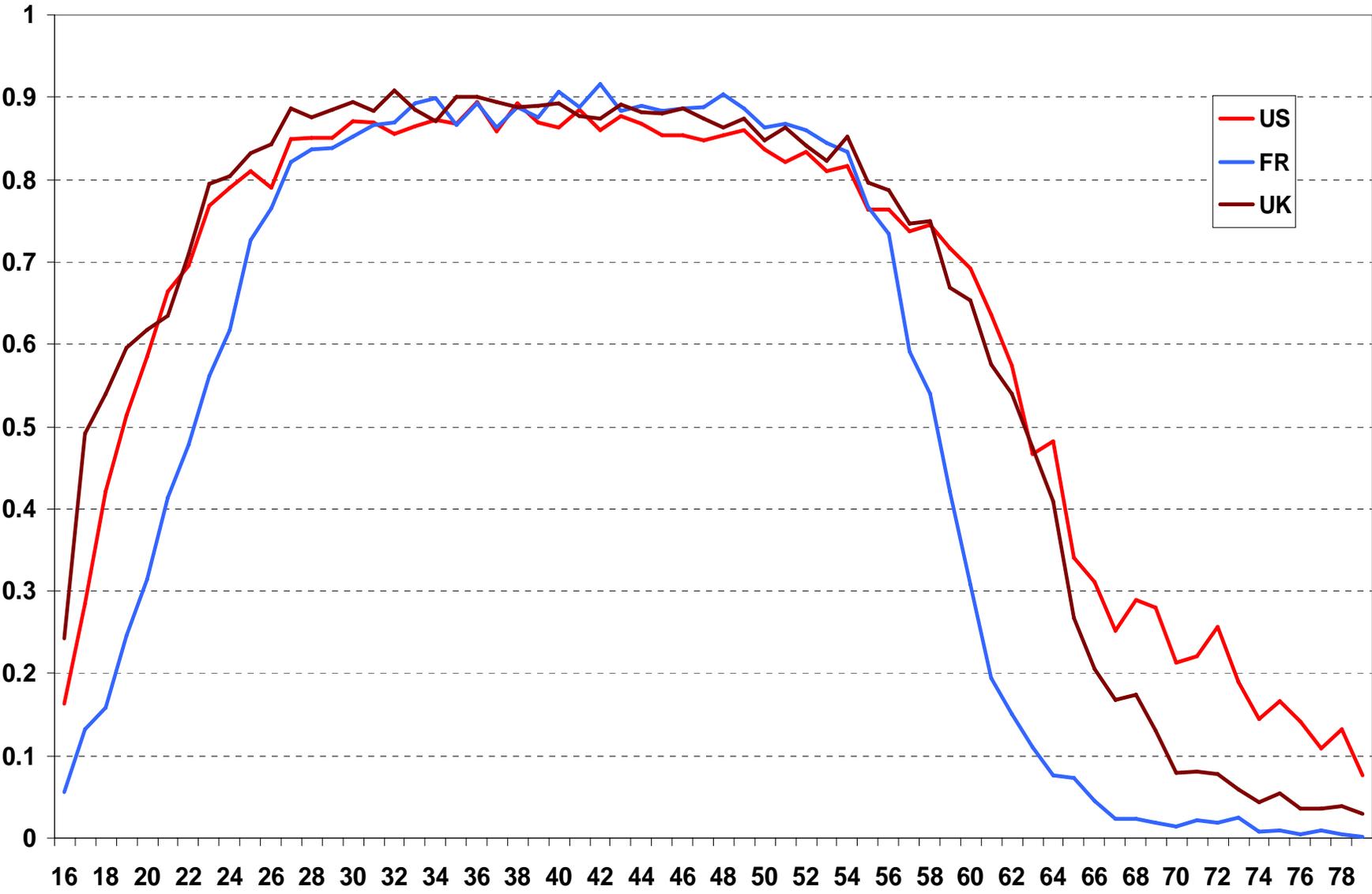
Draw on - The Mirrlees Review: Tax by Design

- 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..

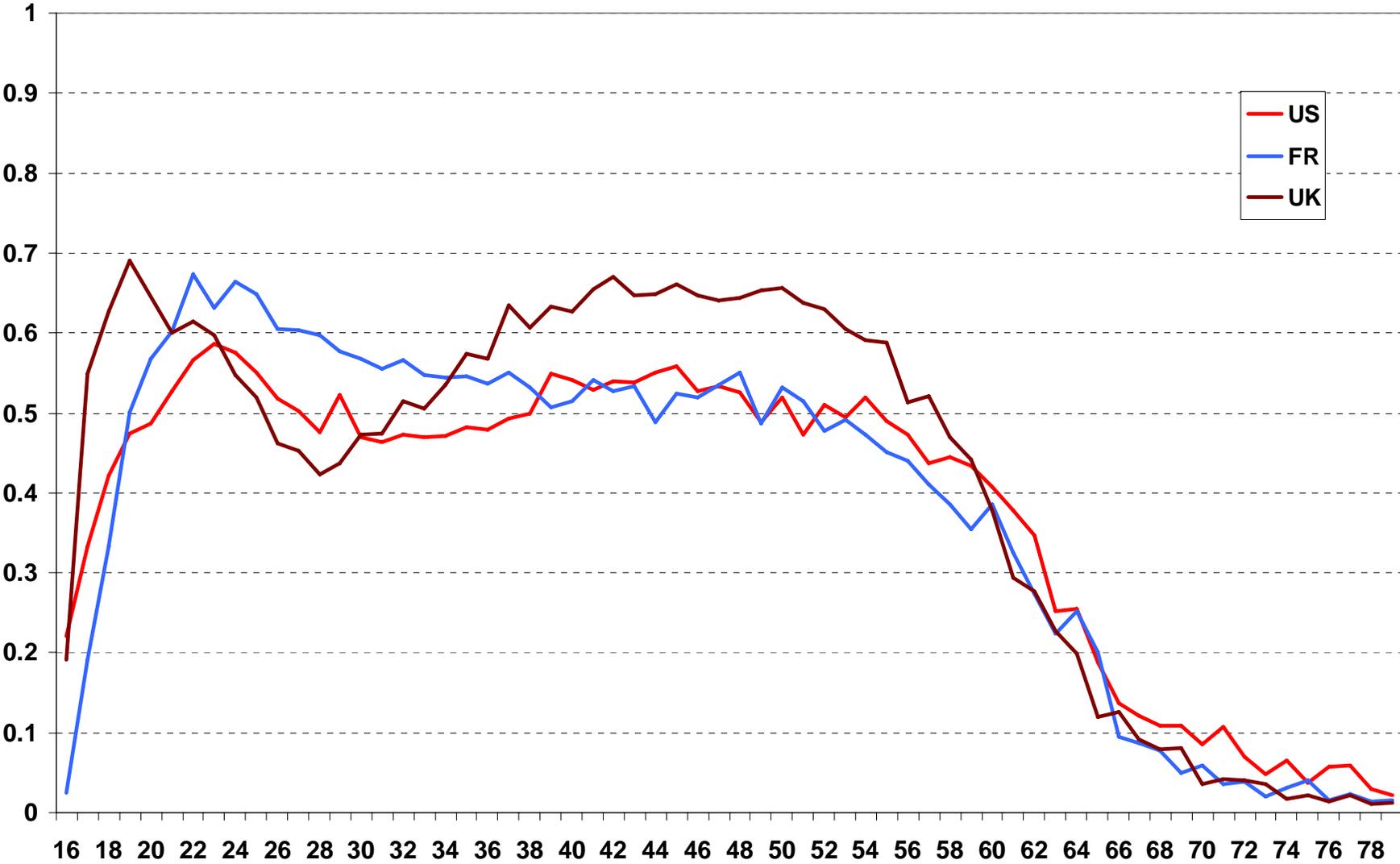
Male employment by age – US, FR and UK 1975



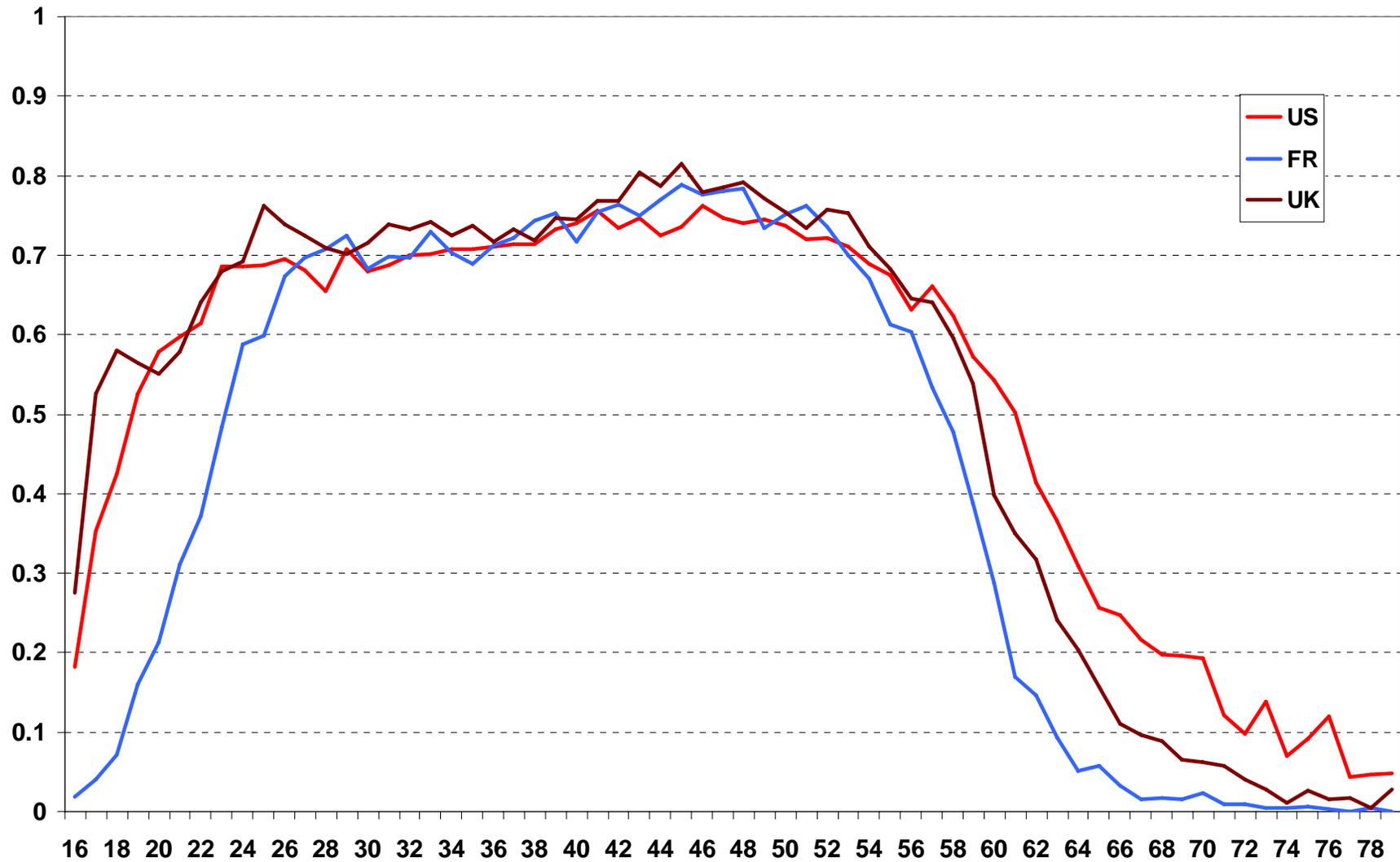
Male employment by age – US, FR and UK 2005



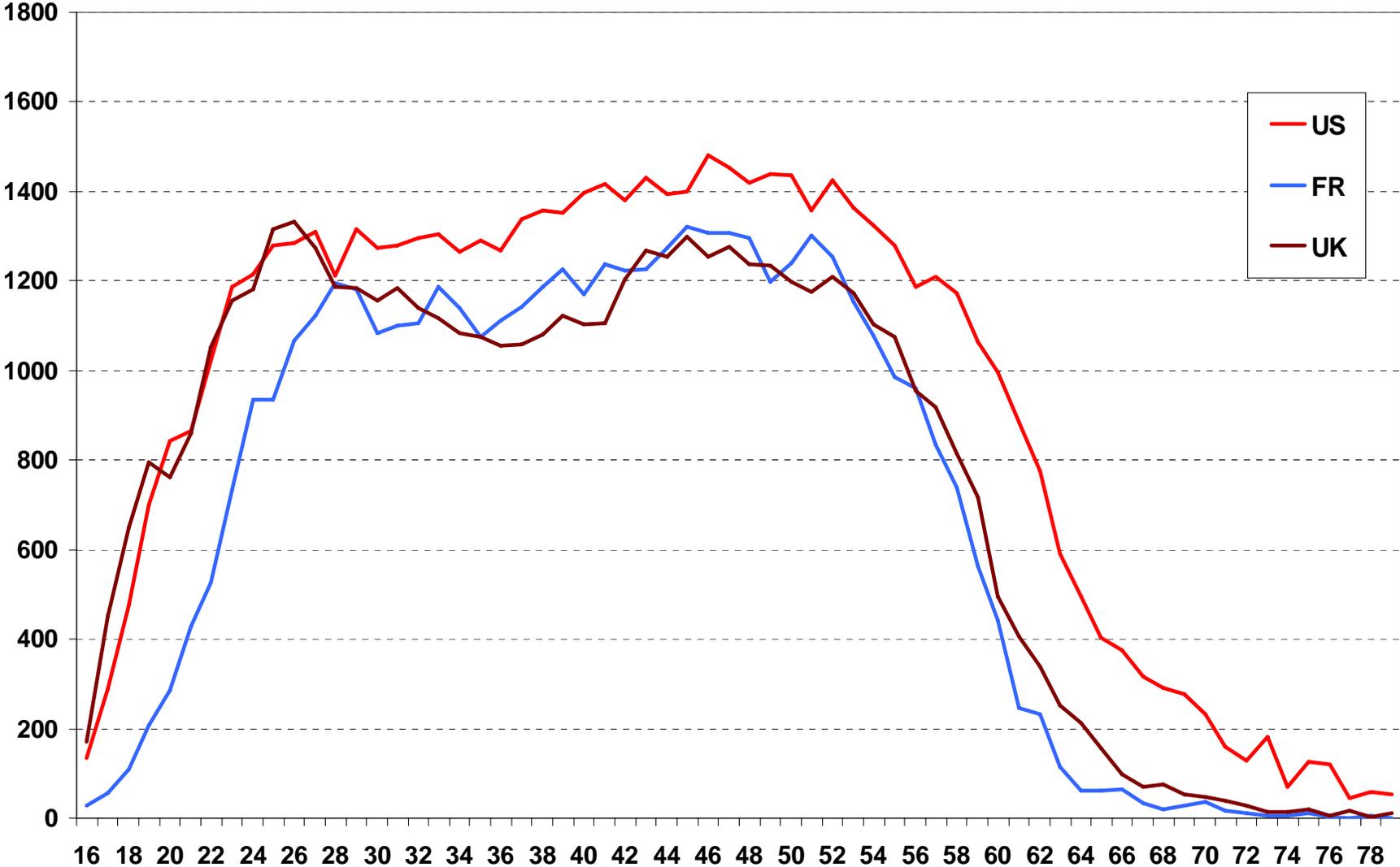
Female Employment by age – US, FR and UK 1975



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

- 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

- 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

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

- 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

- 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:

- 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

- 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

- 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

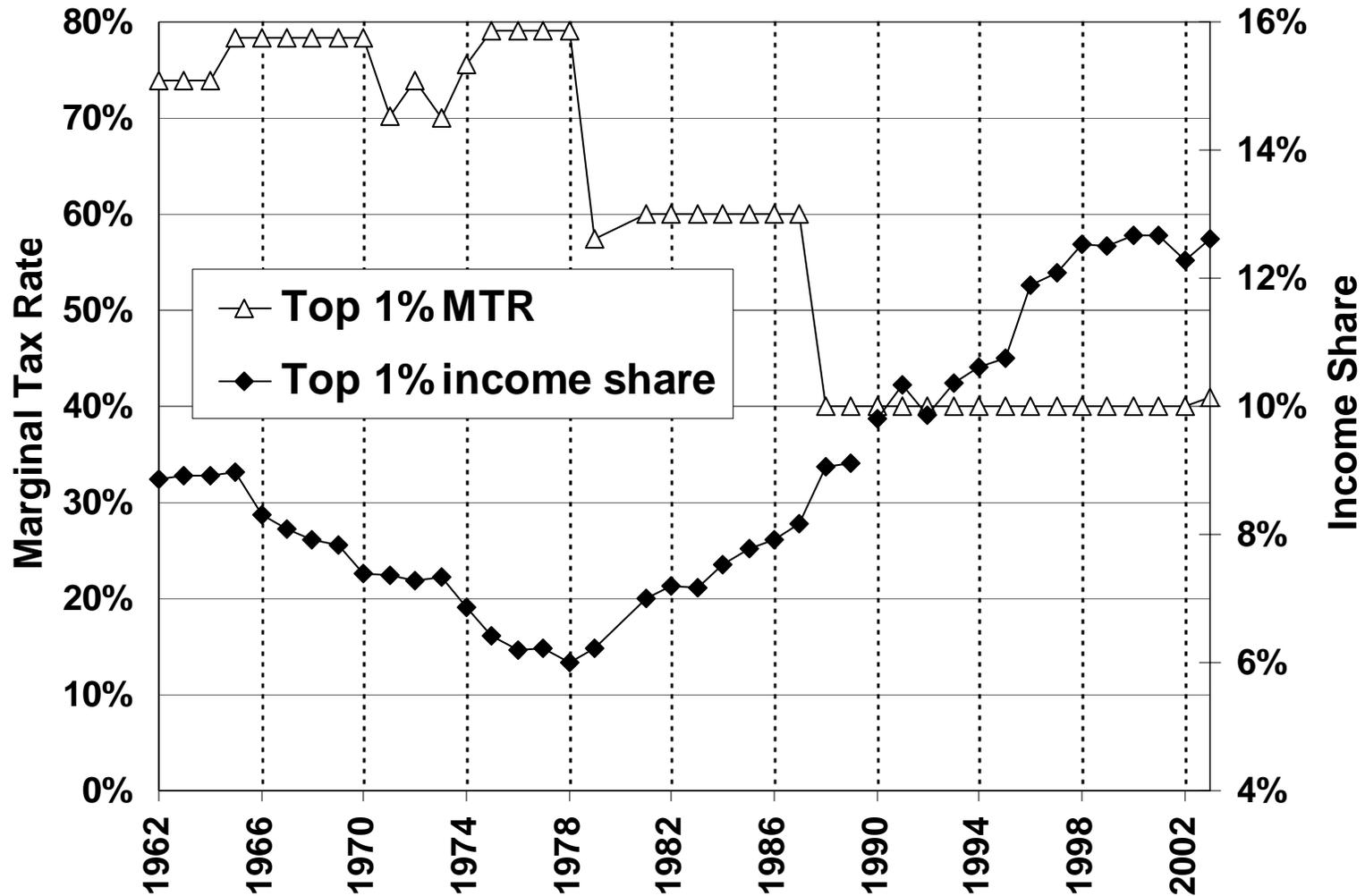
An optimal 'top' tax rate 't'

- 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 (≈ 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

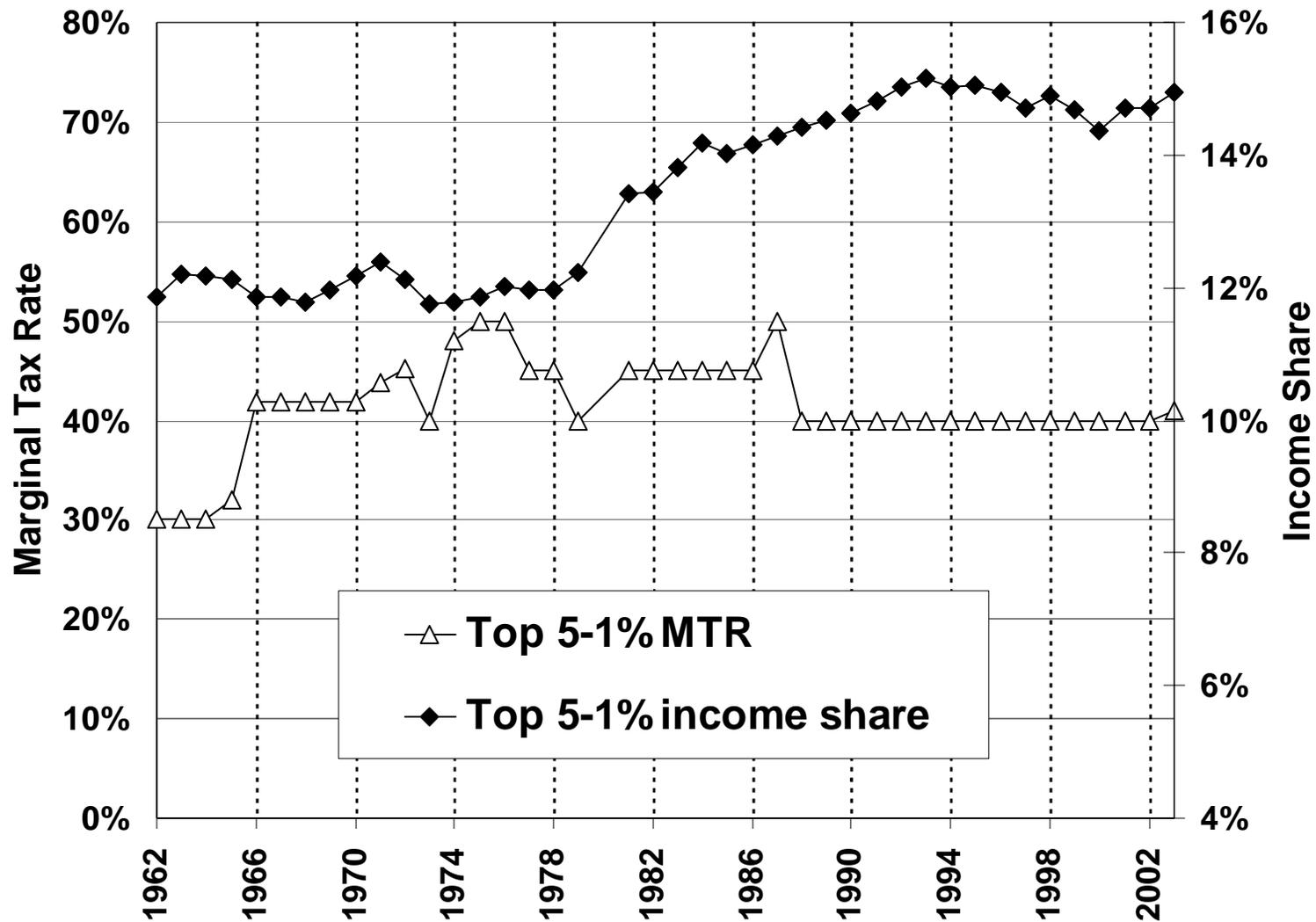


Source: Mirrlees Review

An optimal top tax rate 't'

- 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'

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

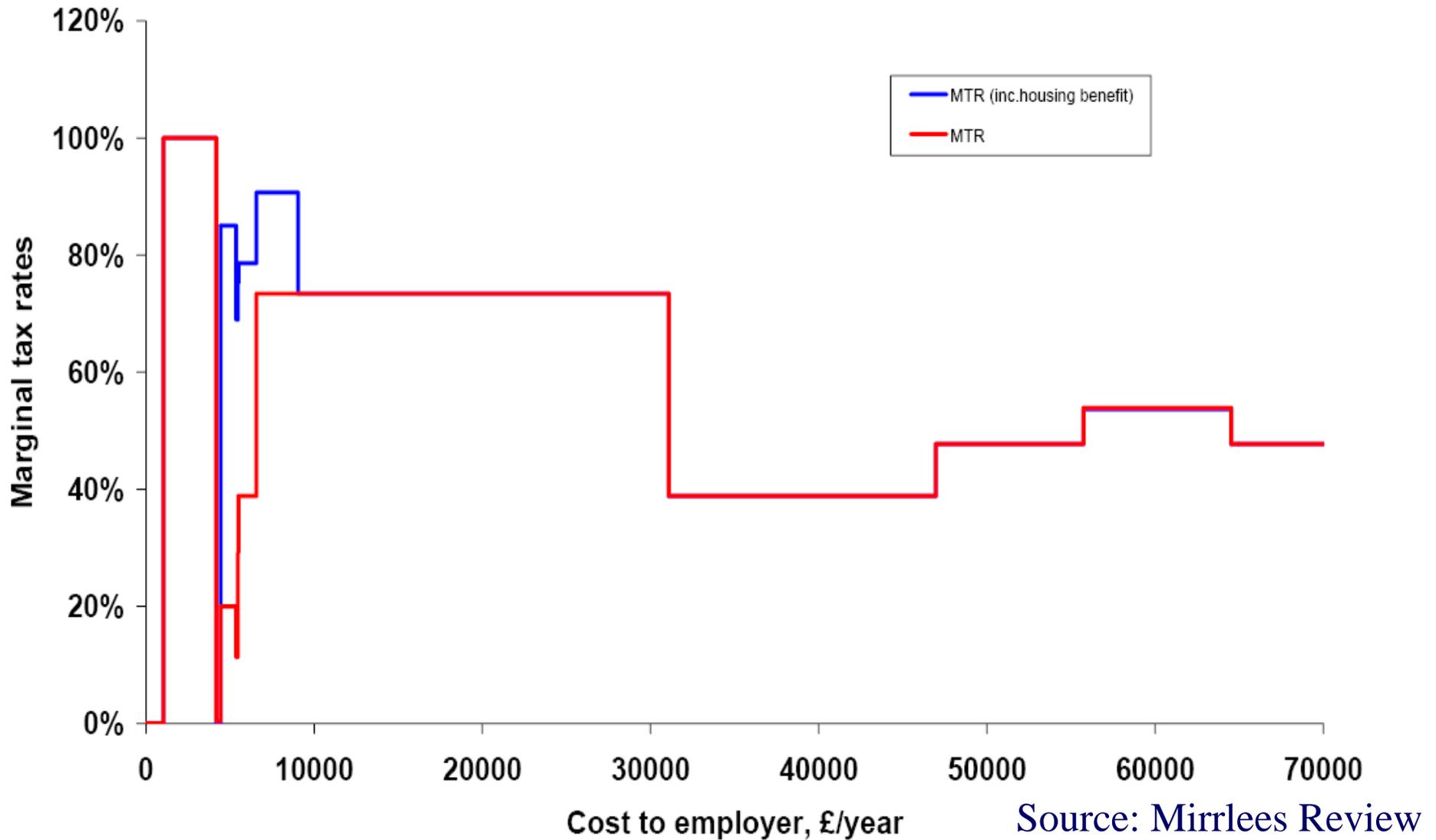
The Nature of (Reliable) Evidence

- 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!

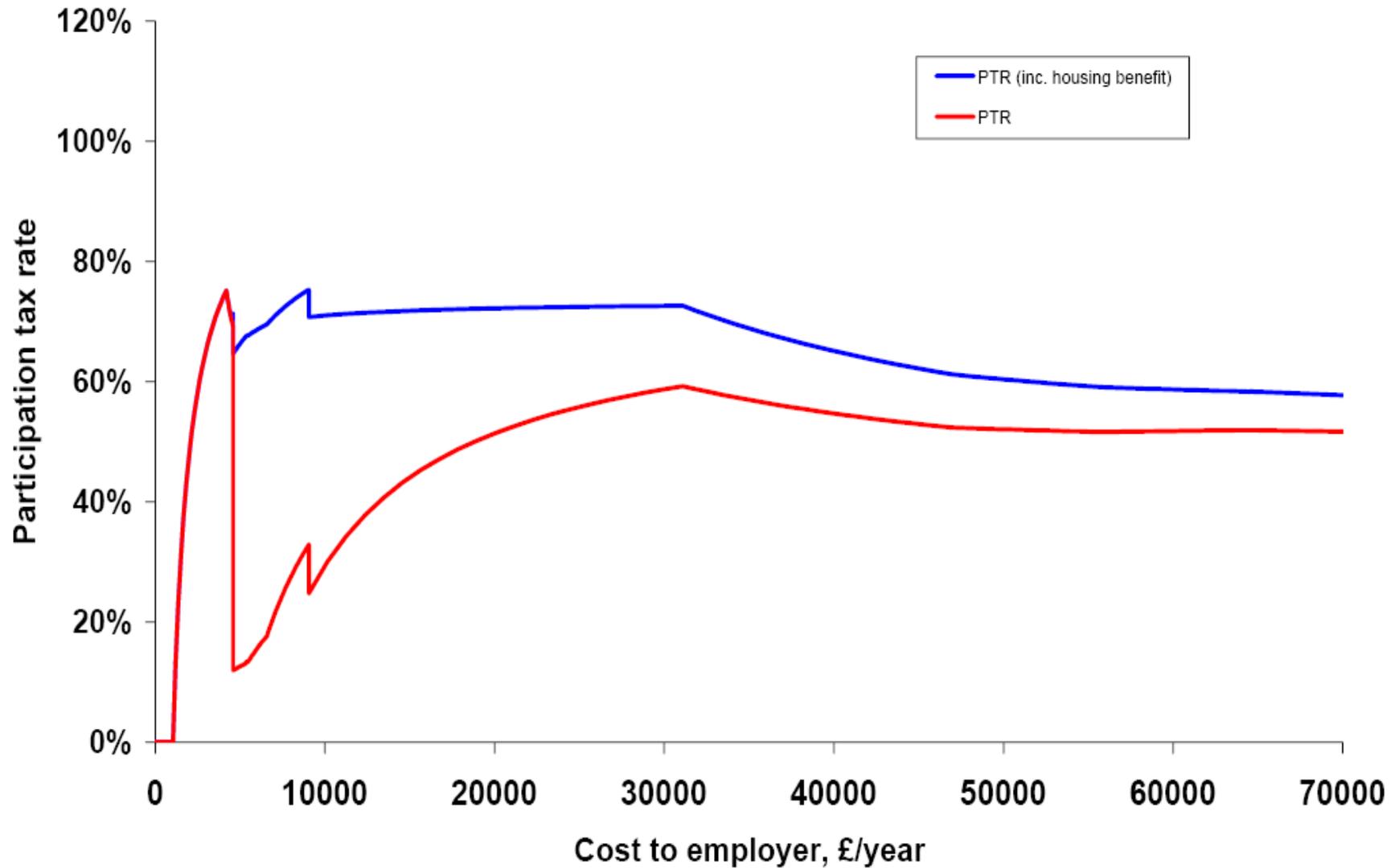
Tax rates on lower incomes

- 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



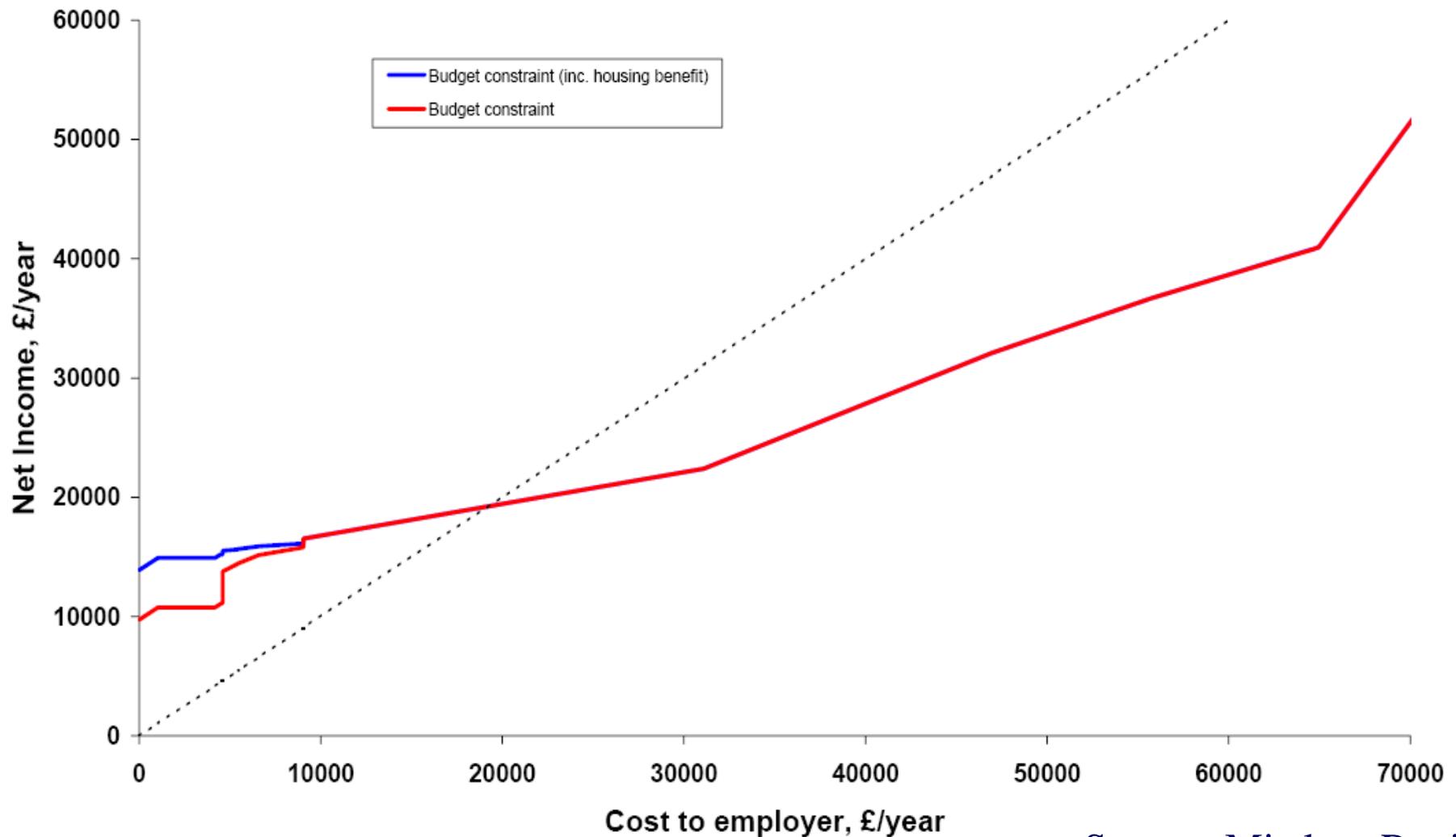
Effective Participation Tax Rates - UK



Source: Mirrlees Review

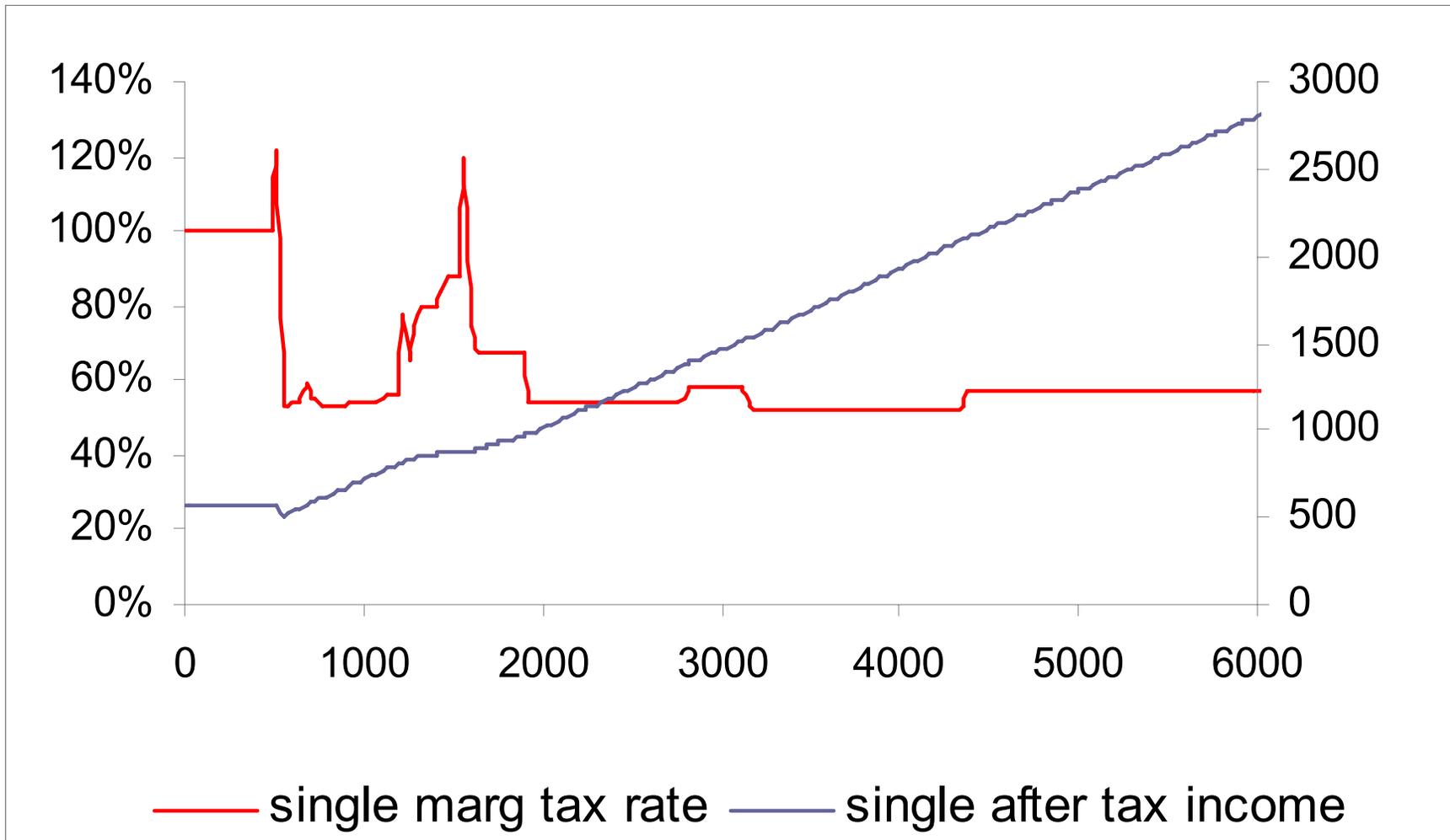
Tax rates on lower incomes - UK

Figure: Budget constraint, lone parents

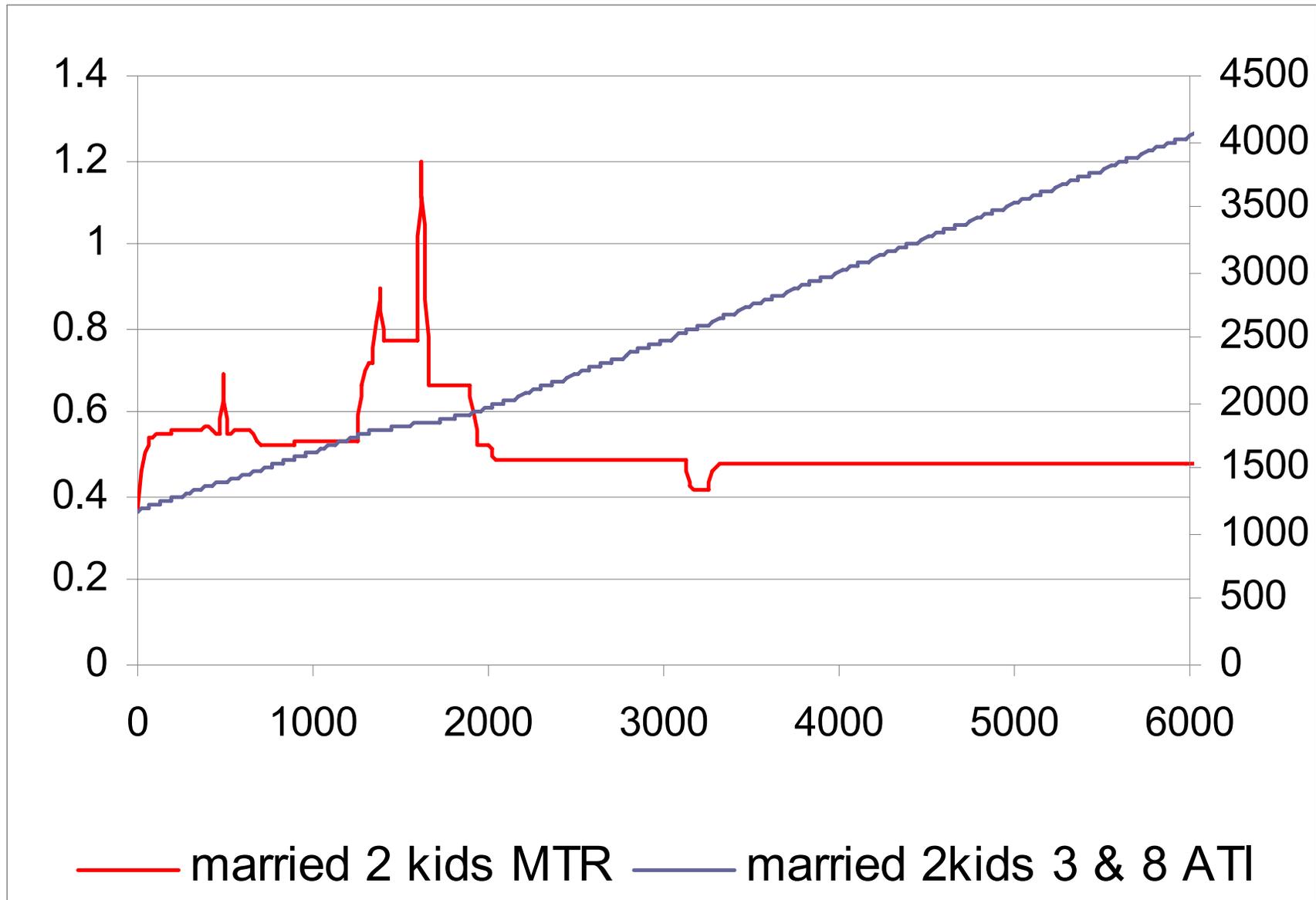


Source: Mirrlees Review

Tax rates on lower incomes - France



Tax rates on lower incomes - France

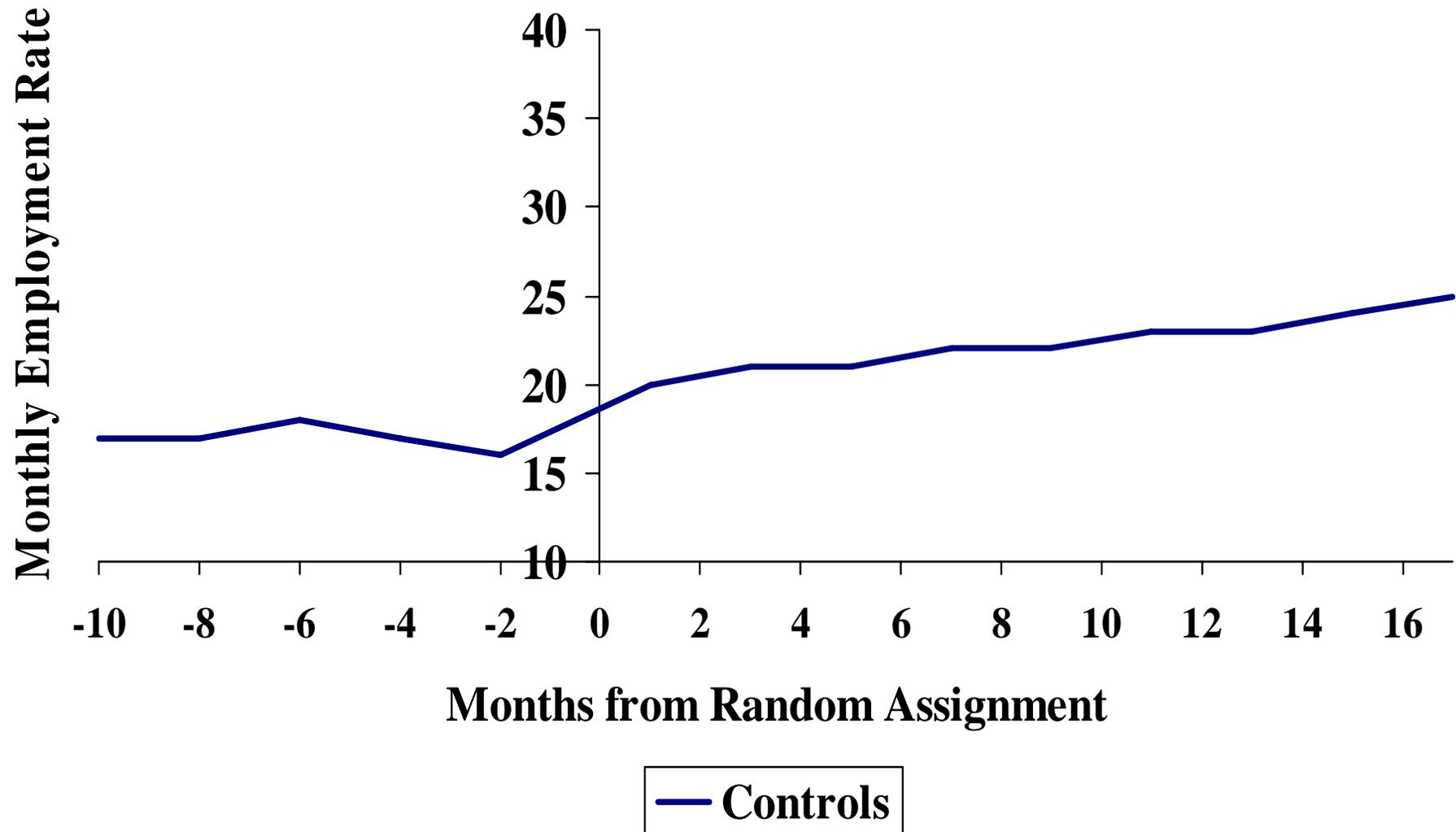


But are these effective tax rates too high?

- 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

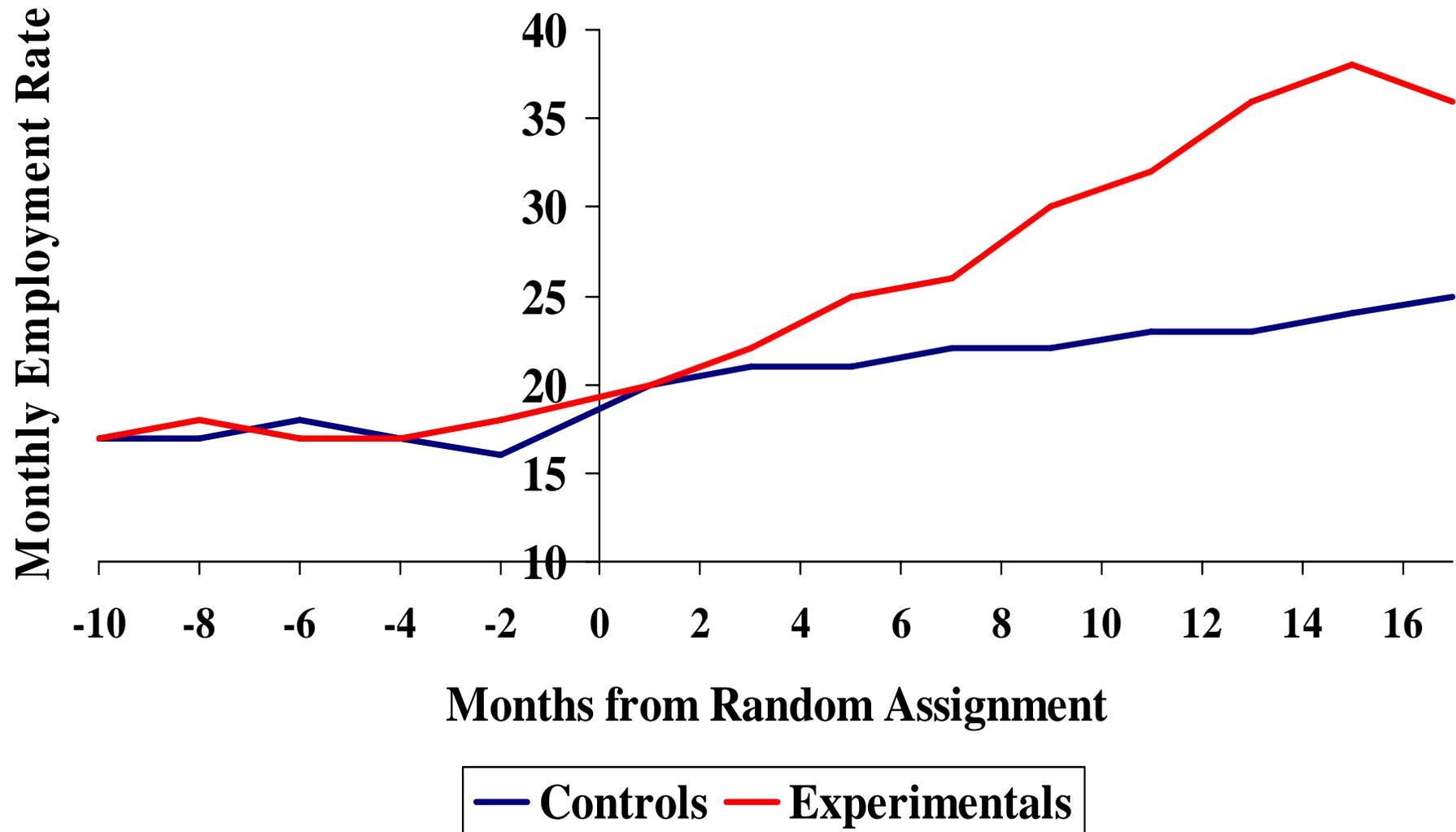
What is the evidence at the extensive margin?

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



What is the evidence at the extensive margin?

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



Labour Supply Elasticities

(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

(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	

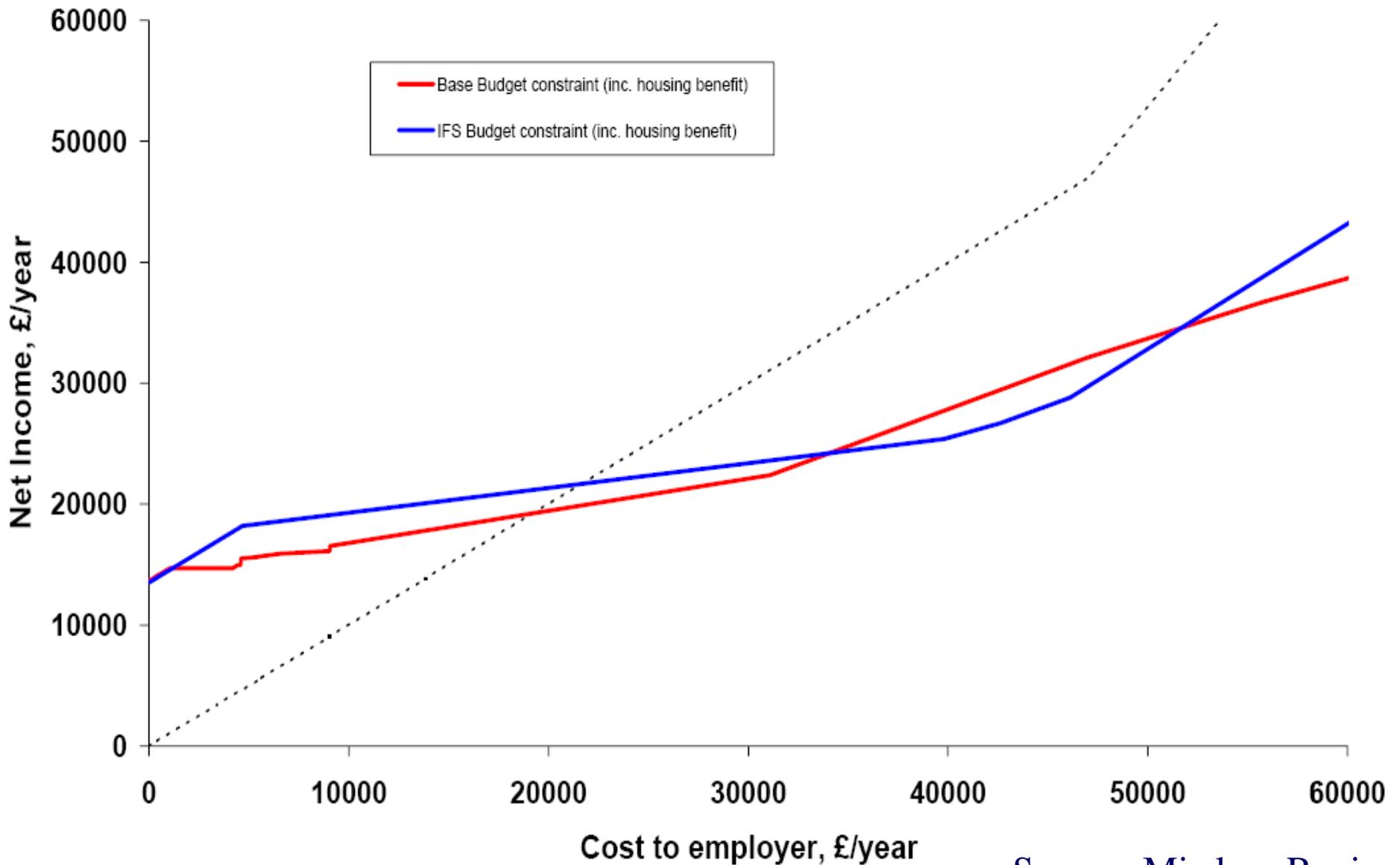
Structural microeconomic estimates

Source: Blundell and Shephard (2008)

An 'optimal' design

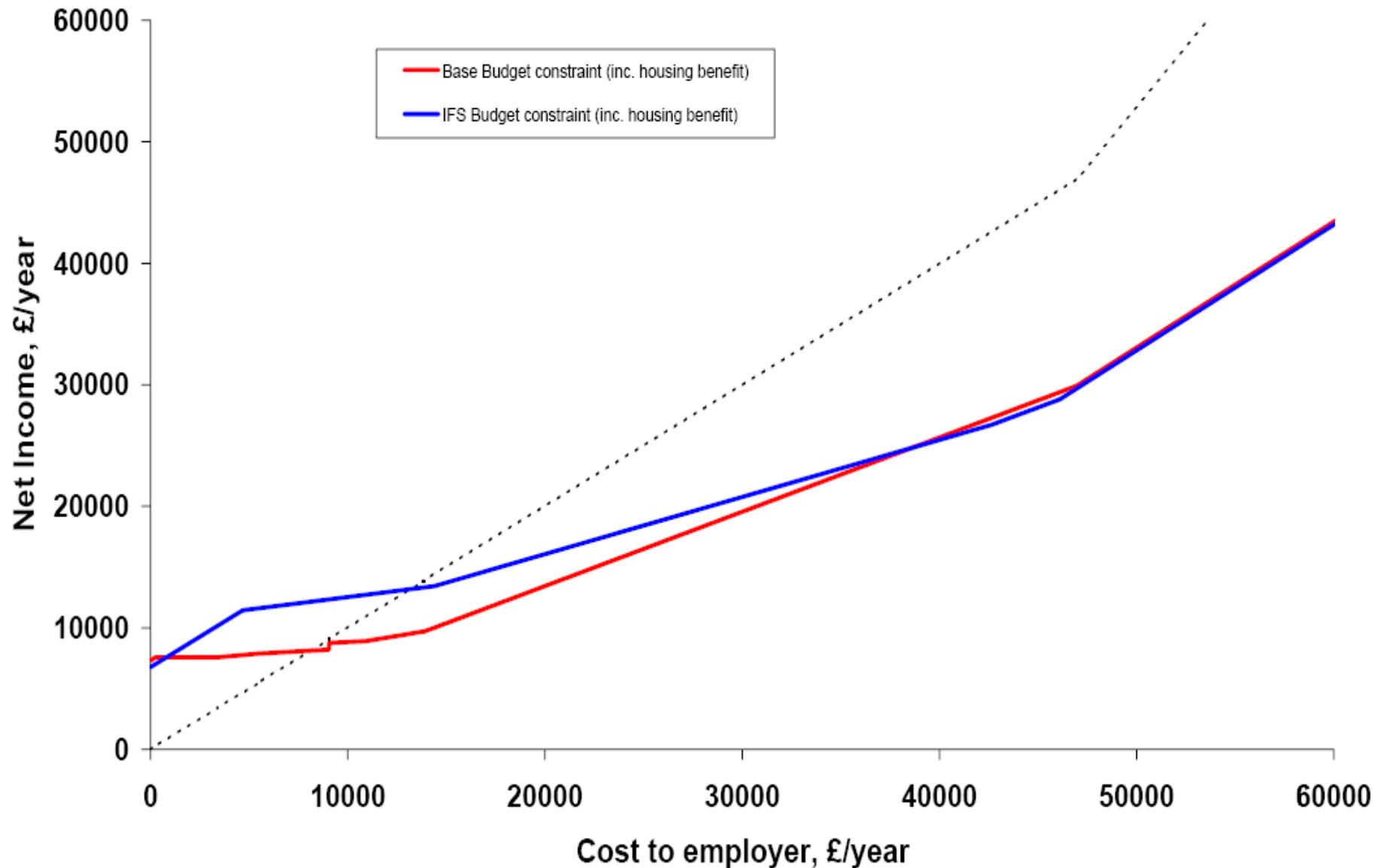
- Given this evidence, insights from optimal tax analysis contrast with the work incentives inherent in many tax systems
 - gross income taken in tax and withdrawal of benefits when people enter work at low earnings is too high
 - some specific benefits, like housing benefit in the UK, have extremely 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

- 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

- 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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for more theory and evidence see

The Mirrlees Review:

Tax by Design

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