

# Inequality, Redistribution and the Labour Market

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2020 Vilfredo Pareto Lecture

Collegio Carlo Alberto

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**Motivating theme:** Can't address all the concerns about low wages and earnings inequality through the tax and welfare system alone.

**Key challenge:** How do we balance tax/benefit policy with other policies: min wages, human capital policies, competition policy, etc?

**COVID-19:** => exacerbated existing inequalities and created new ones.

First, a little background on:



## The IFS-Deaton Review: Inequalities in the 21st Century

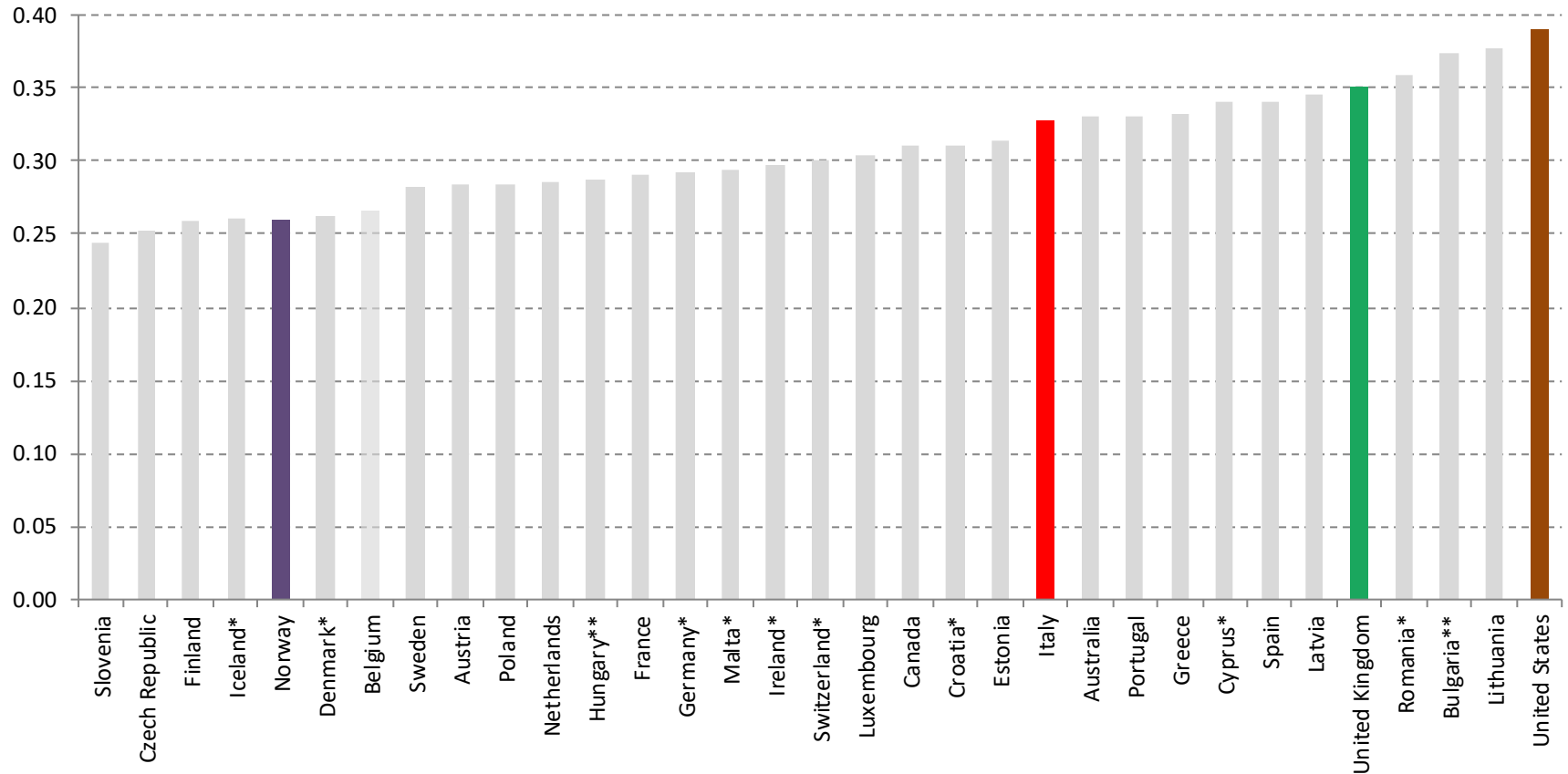
<https://www.ifs.org.uk/inequality/>

A 5-year study, bringing together the best available evidence from across the social sciences to answer the big questions:

- Which inequalities matter most?
- How are different kinds of inequality related?
- What are the underlying forces that come together to create them?
- What is the right mix of policies to tackle adverse inequalities?
- For developed economies with the UK as the running example, but comparative in nature....

# Measured by the Gini, the UK is unequal by European standards

Gini coefficient of equivalised net household incomes in selected countries, 2016



Figures from 2015 are marked with an asterisk (\*). Figures from 2014 are marked with two asterisks (\*\*).

Note: Data on EU states that joined in or before 2004 are from the OECD. Data on other countries are from the World Bank.

Source: Joyce and Xu, IFS, 2019



The IFS Deaton Review

# Inequality is not just about income

- Income inequality is important, but so are inequalities in
  - wages, wealth, consumption, health, political voice, .....
- Need to look at inequalities between groups as well as individuals
  - gender, ethnicity, generations, geography, .....
- The focus of the Review is on understanding the *drivers* of these inequalities and the *best policy mix* to mitigate their adverse impacts.
- A comparative and interdisciplinary project....

# The IFS Deaton Review: An International Panel

## Chair



The IFS Deaton Review



**Angus Deaton**  
Princeton University

## Panel



**Orazio Attanasio**  
IFS & Yale



**James Banks**  
IFS & Manchester University



**Lisa Berkman**  
Harvard University



**Tim Besley**  
London School of Economics



**Richard Blundell**  
IFS & UCL



**Pinelopi Goldberg**  
Yale University & World Bank



**Paul Johnson**  
IFS & UCL



**Robert Joyce**  
IFS



**Kathleen Kiernan**  
University of York



**Lucinda Platt**  
London School of Economics



**Imran Rasul**  
IUCL & IFS



**Debra Satz**  
Stanford University



**Jean Tirole**  
Toulouse School of Economics



The IFS Deaton Review

# Format of the Review

Much like the *IFS Mirrlees Review*, this Review will be published in two volumes:

- I. A volume of commissioned studies and commentaries
  - detailed studies on different aspects of inequality, with commentaries that offer complementary perspectives or alternative views.
- II. A book written by the panel, aimed at the general public
  - sets out what has happened to inequality, why, and what can be done.
- Country studies across Europe and North America
  - and implications from the covid pandemic....

# Commissioned studies and areas - with commentaries and interactions...

1. Why inequality, what inequality?
2. Political economy and political polarisation
3. Attitudes to inequality
4. Gender
5. Immigration
6. Health
7. Race and criminal justice
8. Geographical (im)mobility and spatial inequality
9. Family dynamics and social mobility
10. Early child development
11. Education systems and access
12. Labour markets
13. Firms and market power
14. Trade and globalisation
15. Corporate, capital and top taxes
16. Transfers, tax and tax credits at the bottom

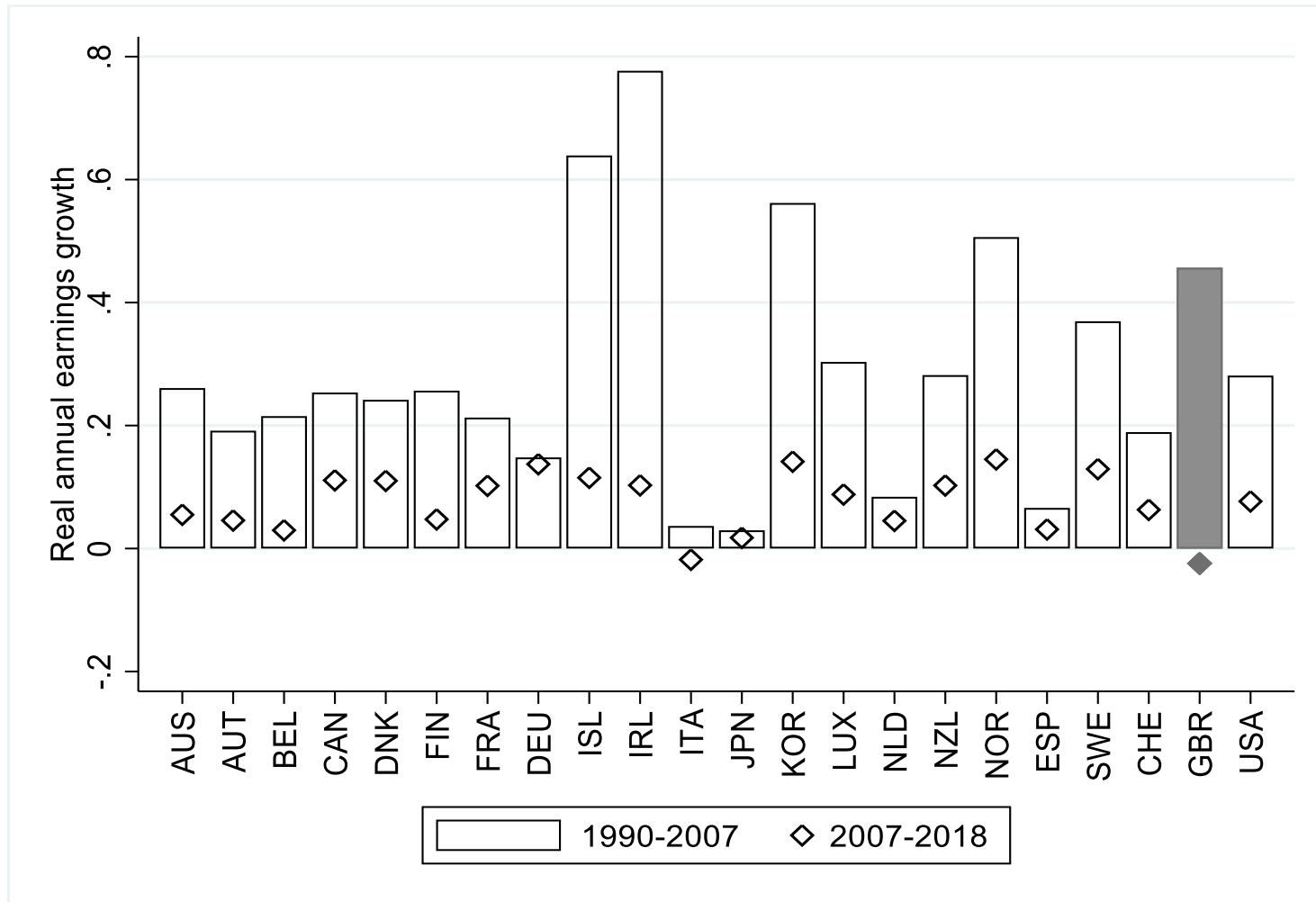
## Focus in this Pareto Lecture on:

### *Inequality, Redistribution and the Labour Market*

- The structure of work and of families has changed over the last three decades and continues to change apace,
  - growing earnings inequality for men and women, with adverse labour market ‘shocks’ for the low educated, especially men.
- When we place people in families with childcare, savings and human capital decisions we get a different take on some key tax and welfare design questions.
  - in a dynamic context, redistribution and insurance become intrinsically linked.
- ‘Tax and welfare reform: the challenge of labour market inequality’
  - how should we balance tax and welfare-benefit policies with min wages, human capital policies, etc?
- **Let’s turn to some facts**



# Real earnings growth across countries

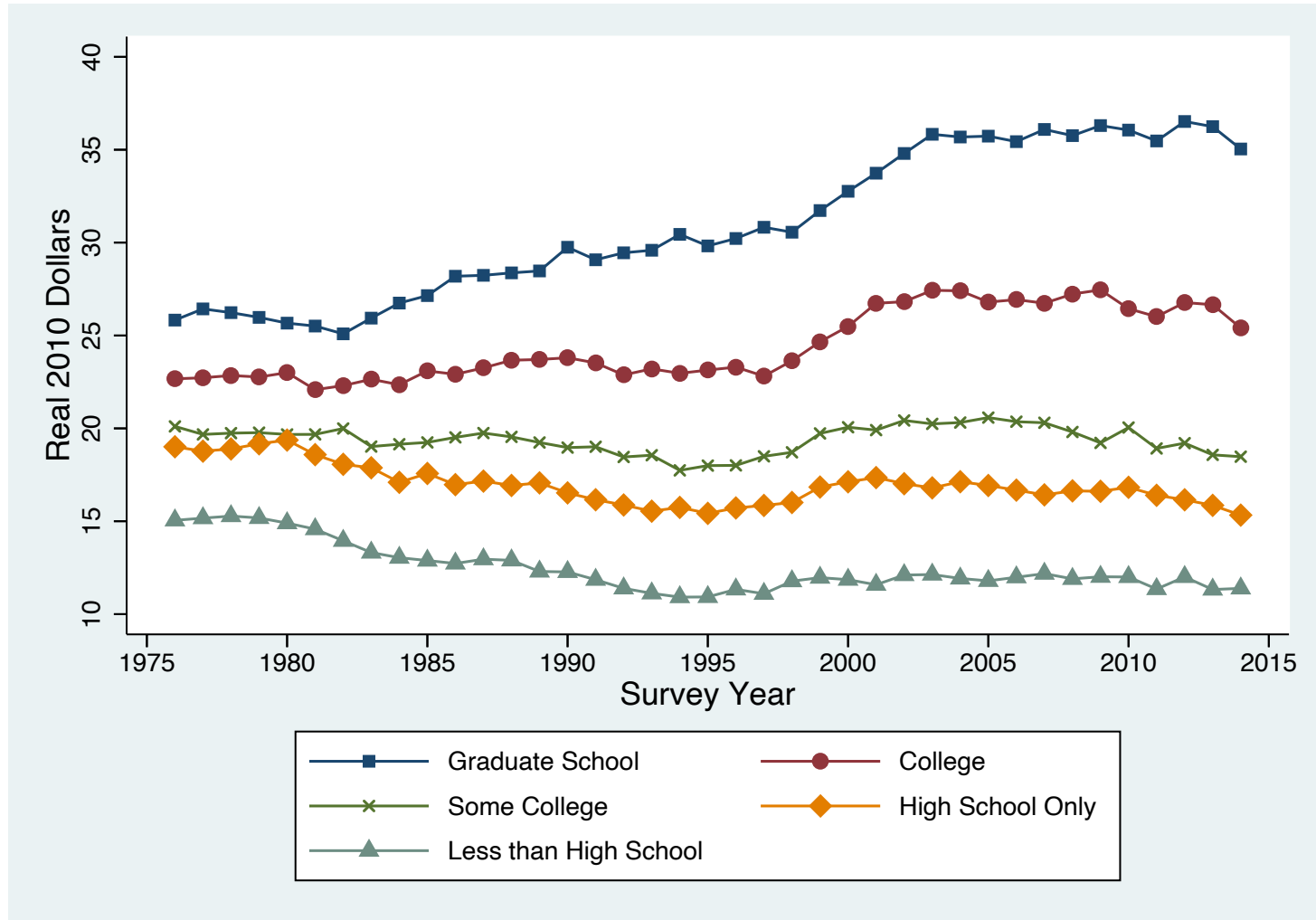


Note: OECD. Data for Germany start in 1991.

Source: Giupponi and Machin (Deaton Review, IFS, 2020).

# Earnings inequality:

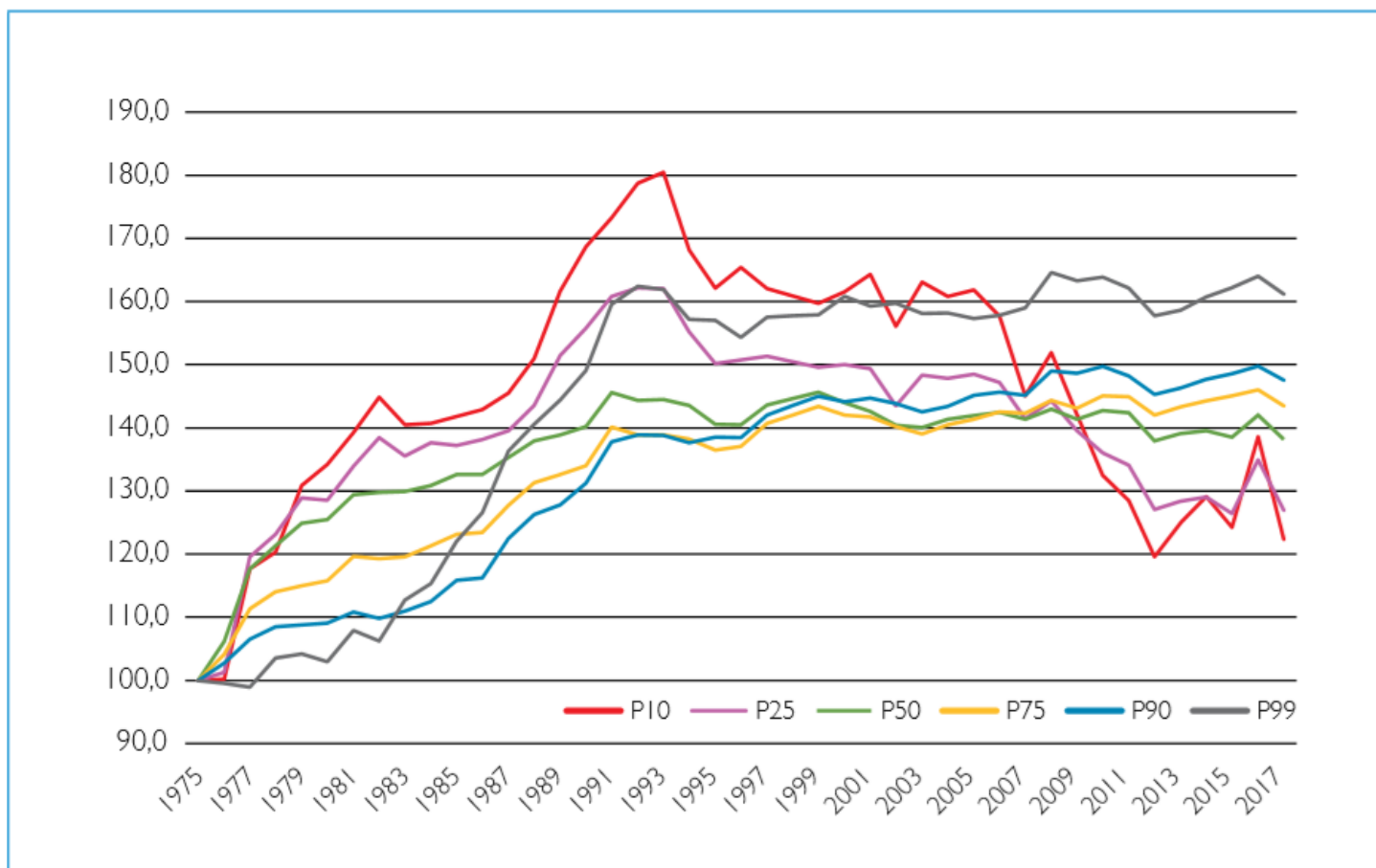
Growth in median male wages in the US by education group: US 1974/5 to 2015/6



Notes: CPS, Includes self employment income and self-employed households.

Source: Blundell, Joyce, Norris Keiller and Ziliak (2018)

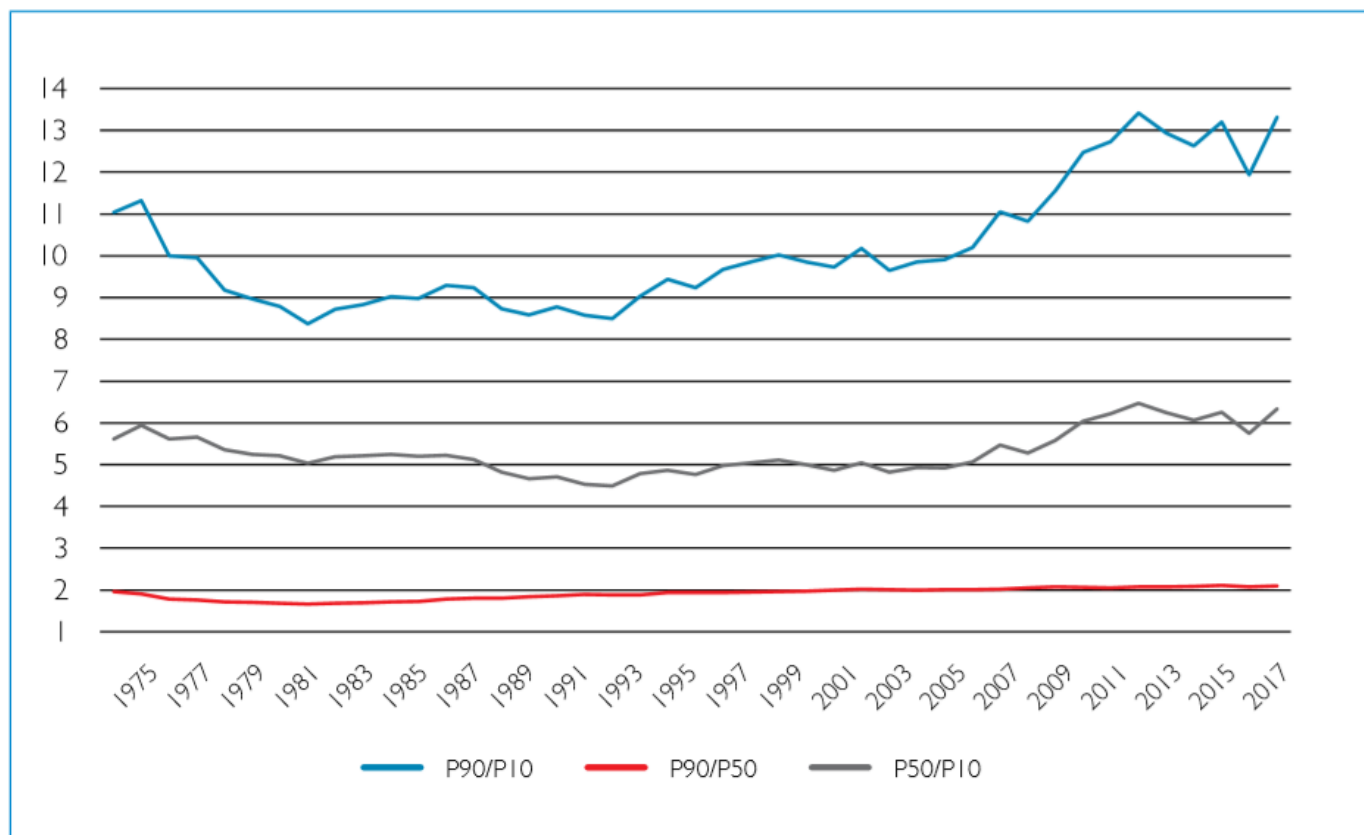
# Evolution of percentiles of real annual labor earnings: Italy 1975 to 2017



Notes: Employees in the private sector, gross earnings

Source: INPS Annual Report 2019

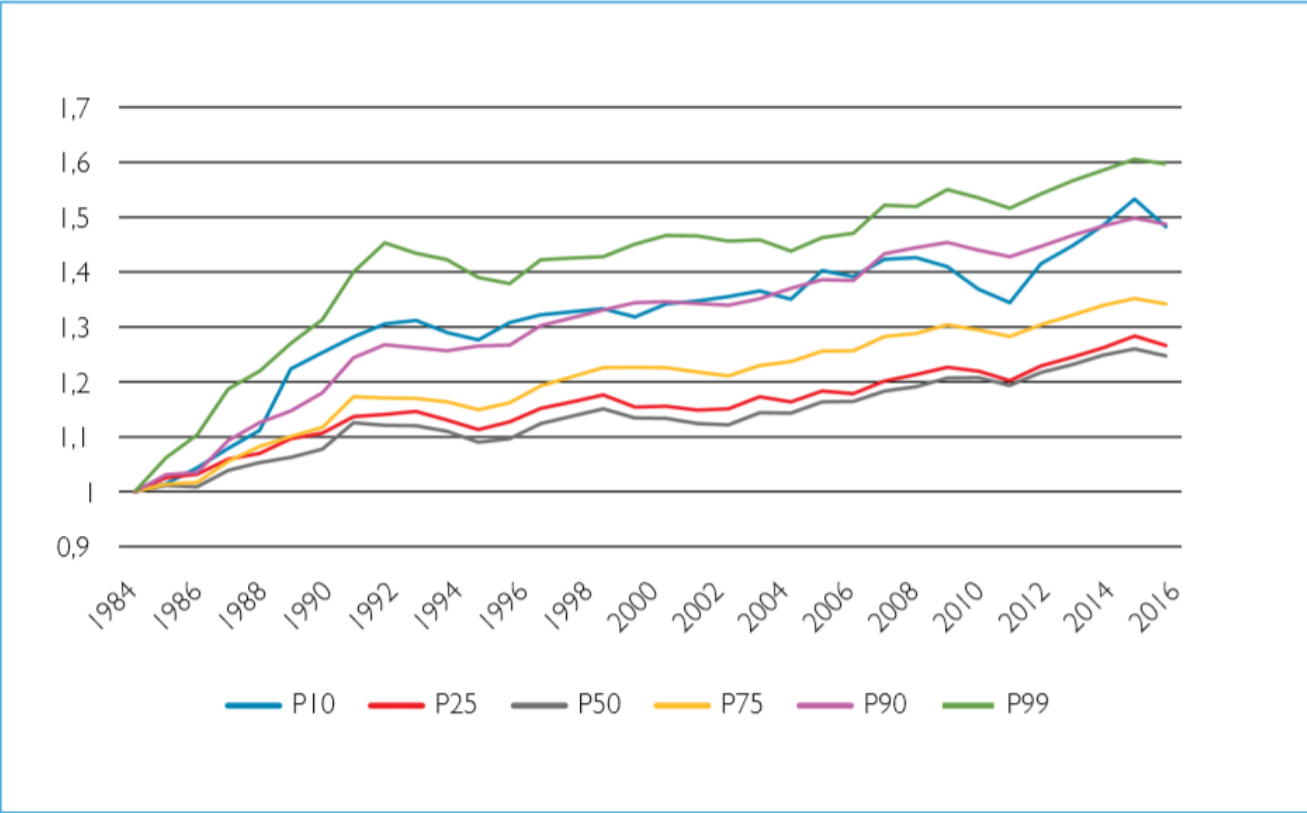
# Percentile ratios: real annual labor earnings: Italy 1975 to 2017



Notes: Employees in the private sector, gross earnings

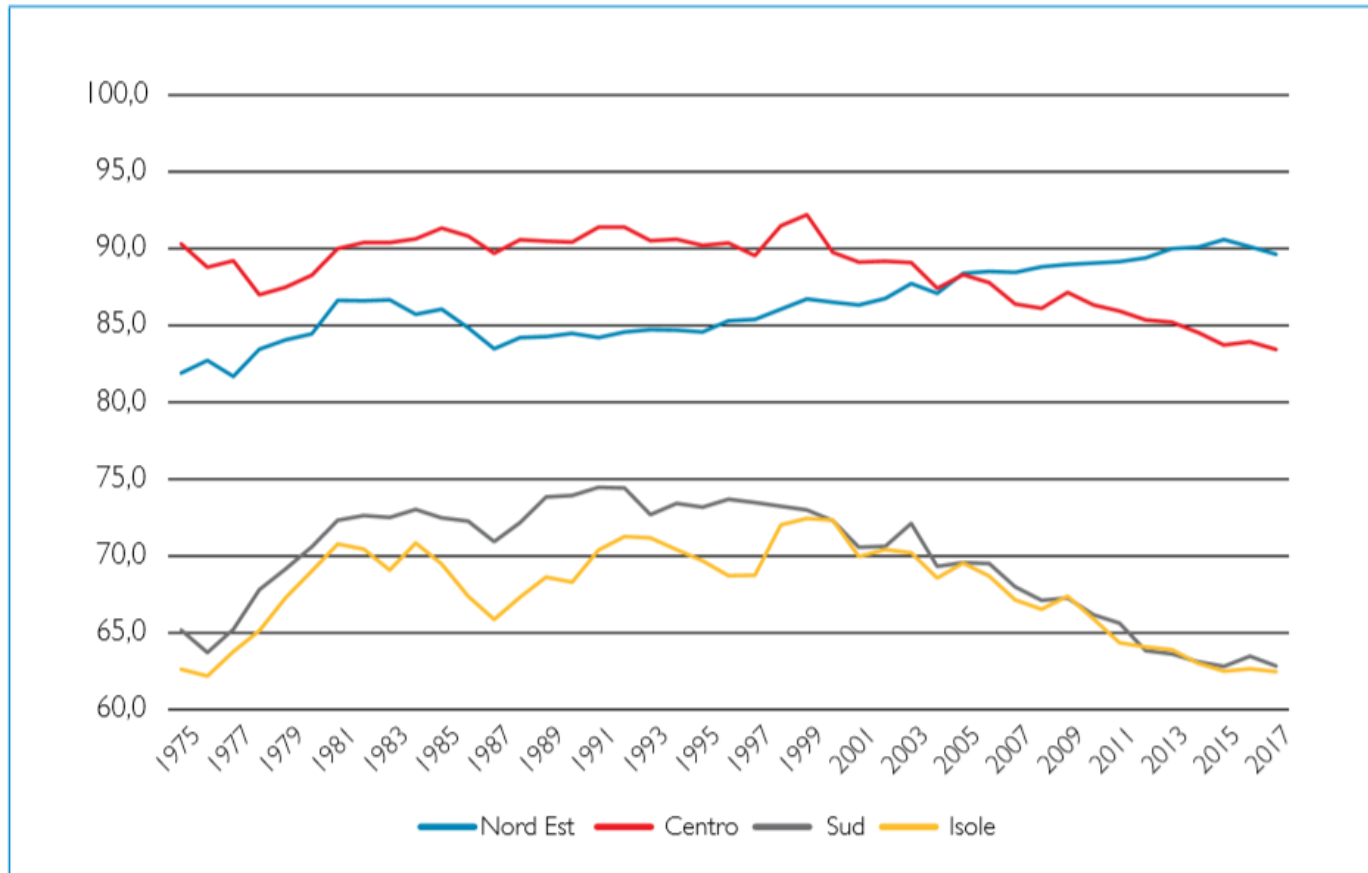
Source: INPS Annual Report 2019

# Evolution of percentiles of full time real weekly earnings, Italy: 1984 - 2016



Notes: Employees in the private sector, gross earnings  
Source: INPS Annual Report 2019

# Geographical disparities: Evolution of real average annual labor earnings in macro regions in Italy, relative to the North West (=100): 1975 to 2017

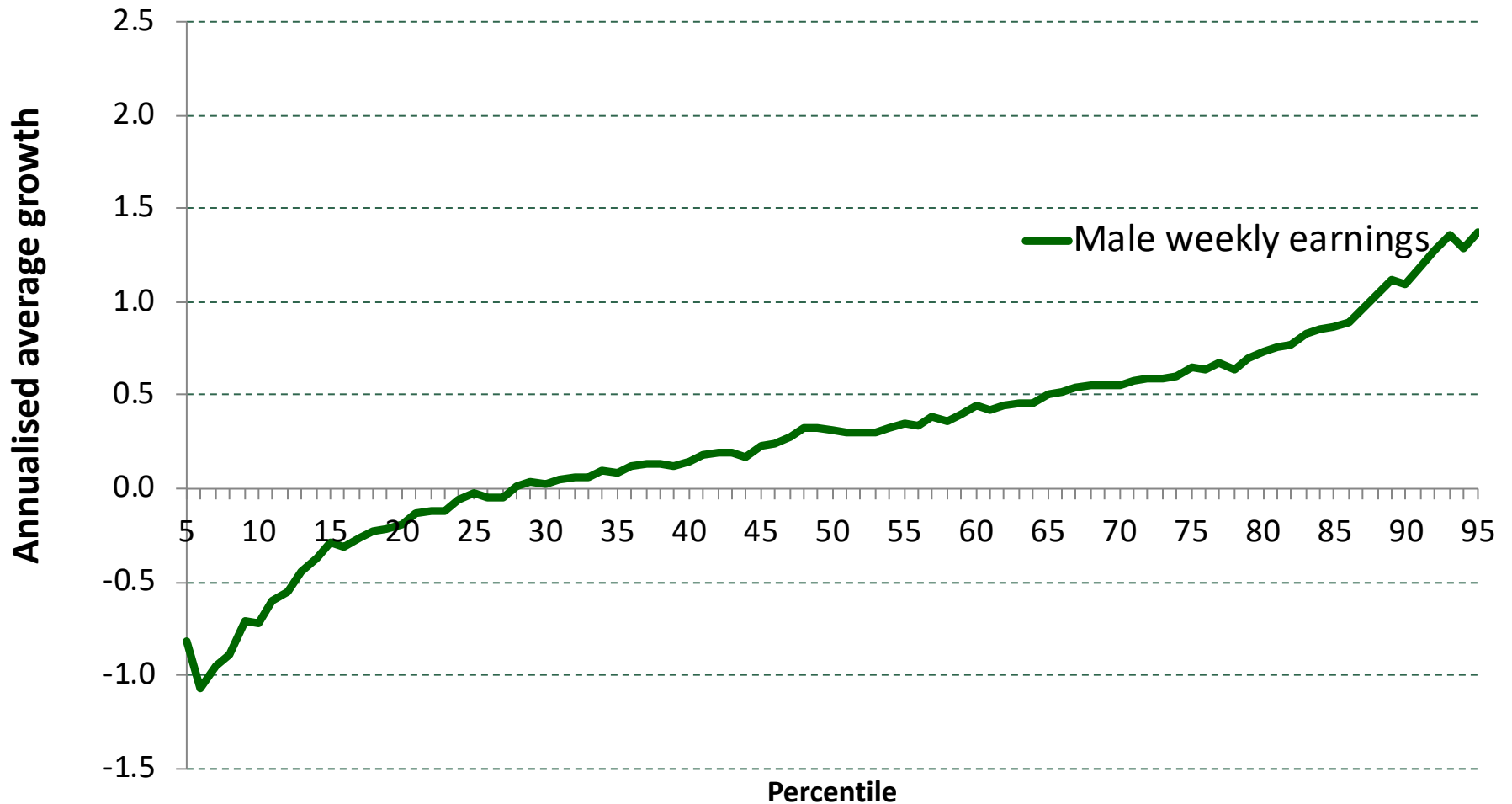


Notes: Employees in the private sector, gross earnings

Source: INPS Annual Report 2019

# Growth in UK male weekly earnings:

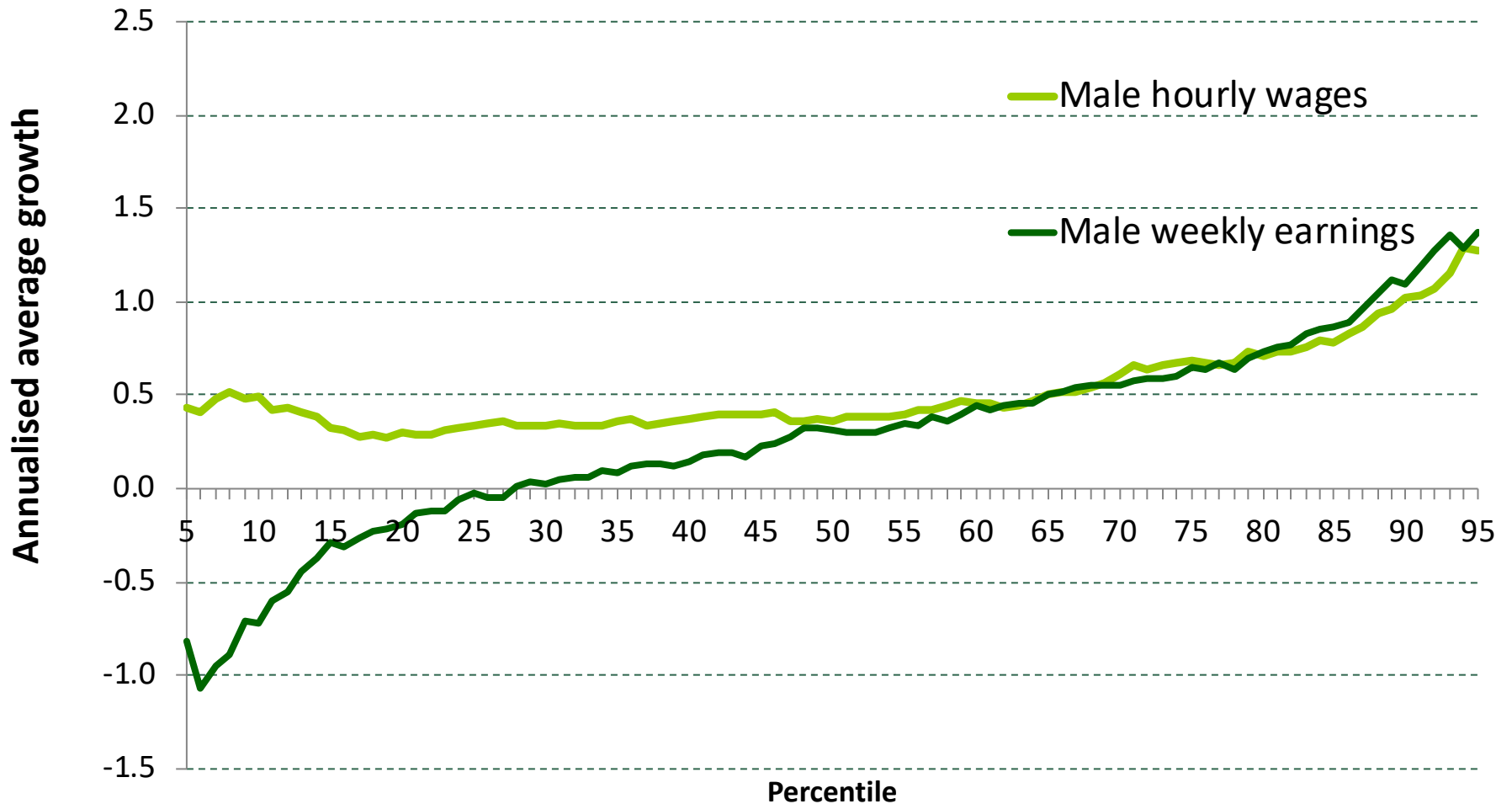
1994/95 – 2015/16



Source: Blundell, Joyce, Norris Keiller and Ziliak (2018):

[www.ifs.org.uk/publications/10031](http://www.ifs.org.uk/publications/10031). Data used is UK FRS 1994-95 and 2015-16.

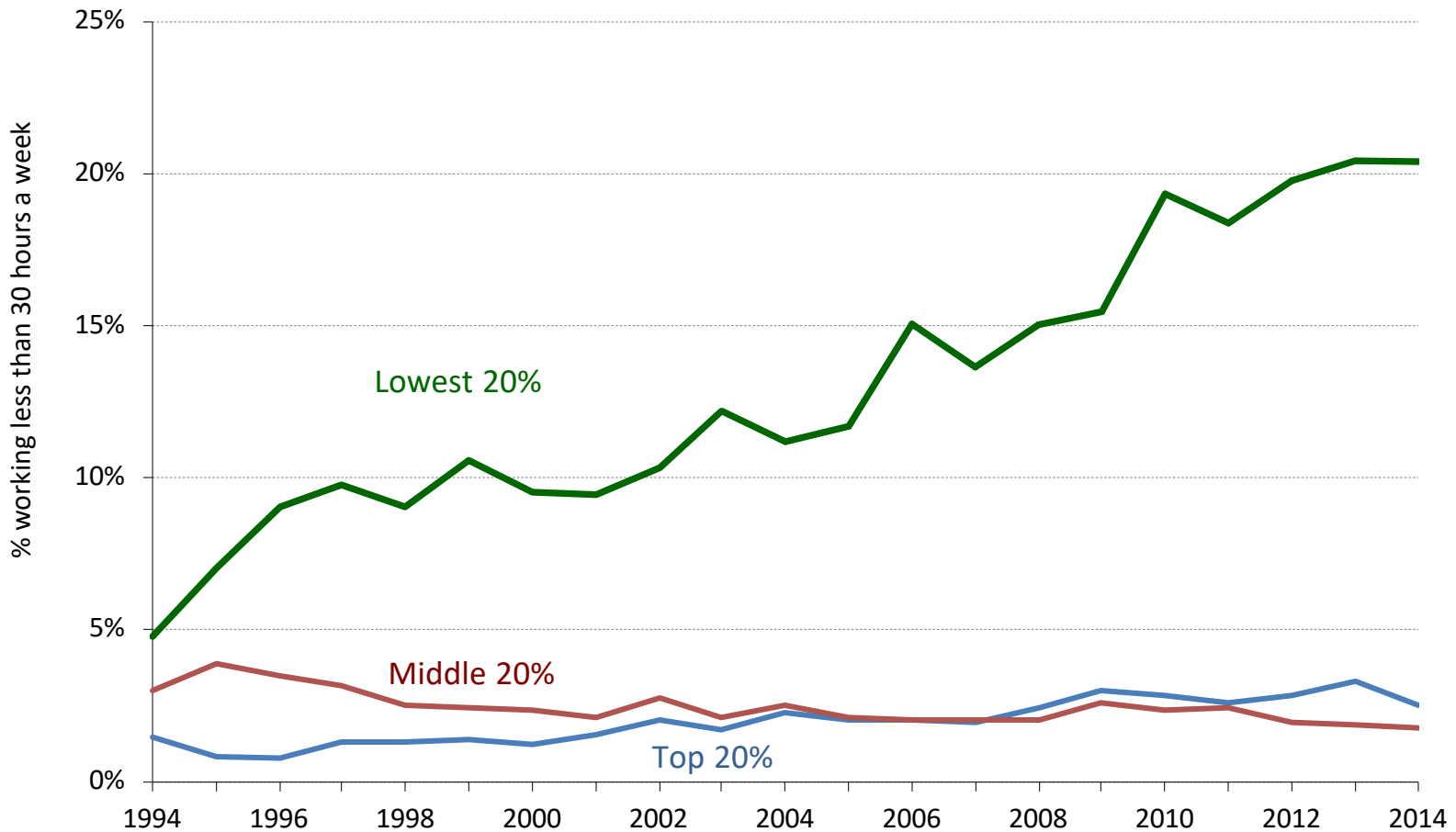
# Growth in UK male weekly earnings and hourly wages: 1994/95 – 2015/16



Source: Blundell, Joyce, Norris Keiller and Ziliak (2018):  
[www.ifs.org.uk/publications/10031](http://www.ifs.org.uk/publications/10031). Data used is UK FRS 1994-95 and 2015-16.



# Proportion of men working less than 30 hours in the UK by hourly wage quintile – aged 25-55



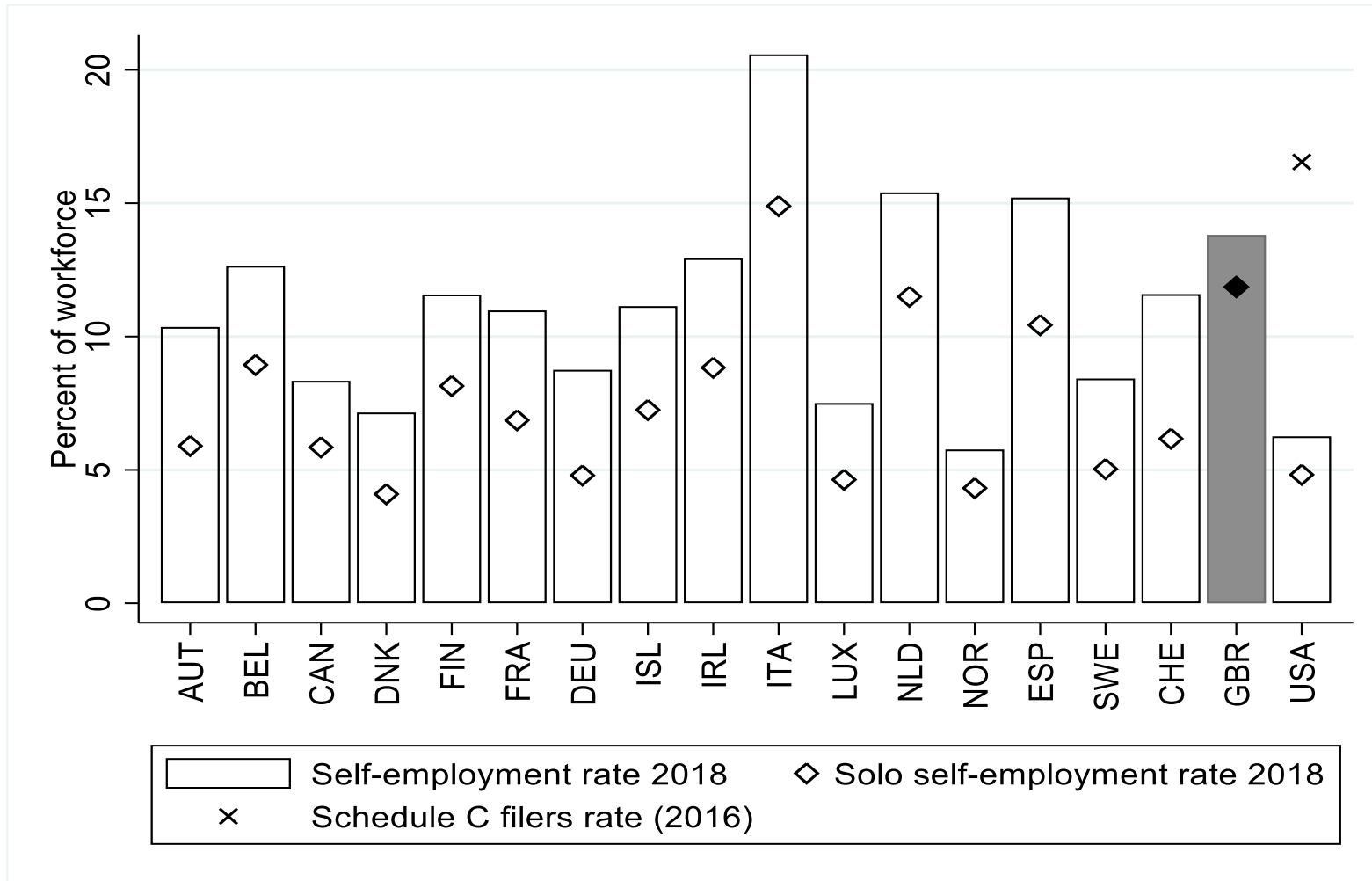
Source: IFS calculations using Labour Force Survey

Notes: LFS: Male employees aged 25-55.

Giupponi and Machin (2020) show even stronger for self-employed since 2008 where there has been a growing rate of solo self-employed and part-time hours.

# Self-employment across countries

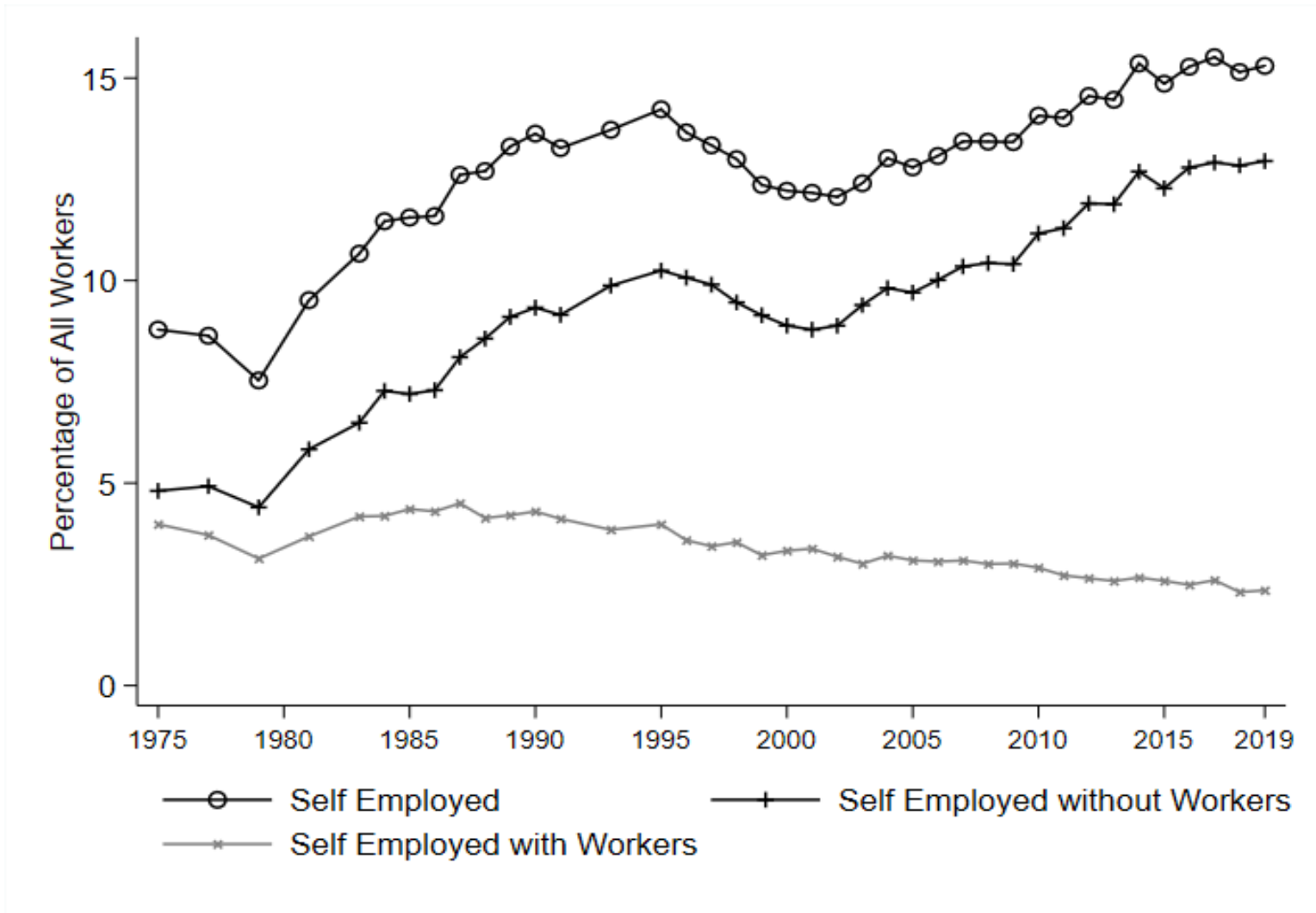
## Self-employment as percent of workforce



Source: Giupponi and Machin (Deaton Review, IFS, 2020)

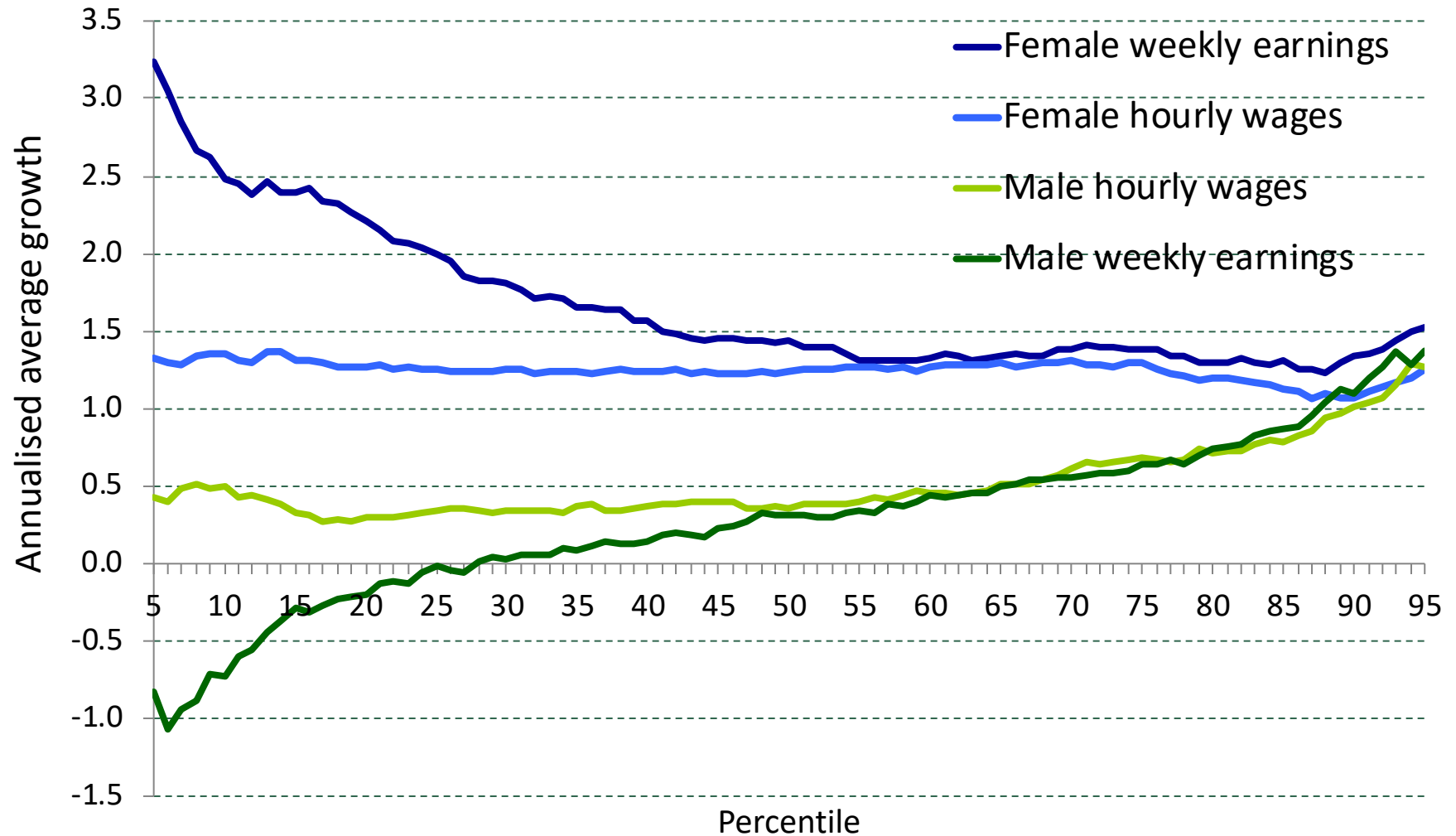
# Self-employment and 'alternative work arrangements'

## Self-employment as percent of workforce



Source: Giupponi and Machin (Deaton Review, IFS, 2020)

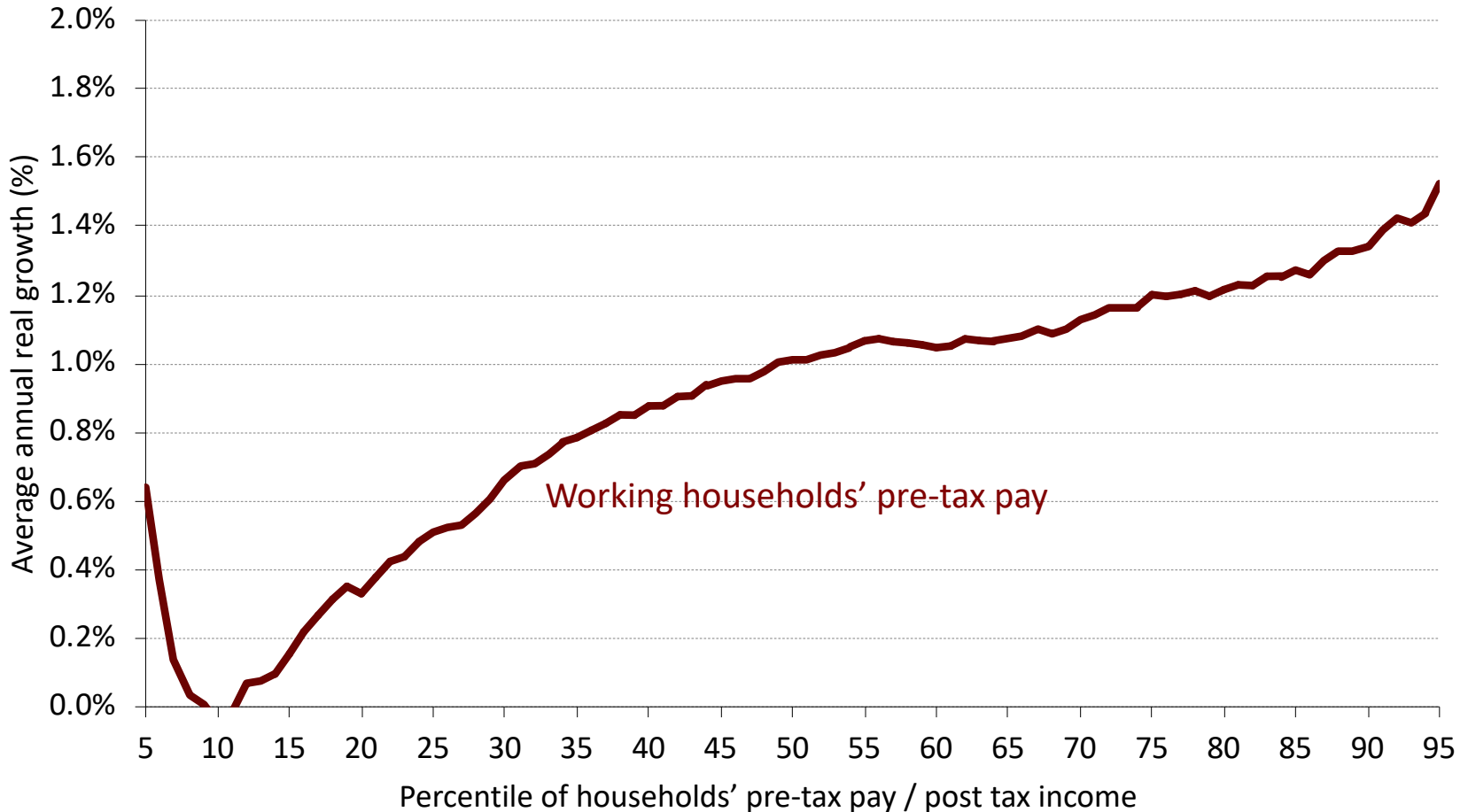
# Very different growth in female hourly wages and weekly earnings: UK 1994/95 – 2015/16



But assortative partnering and the low female earnings share implies this has not improved between family inequality.... Similar results in the US.

# Earnings and Incomes:

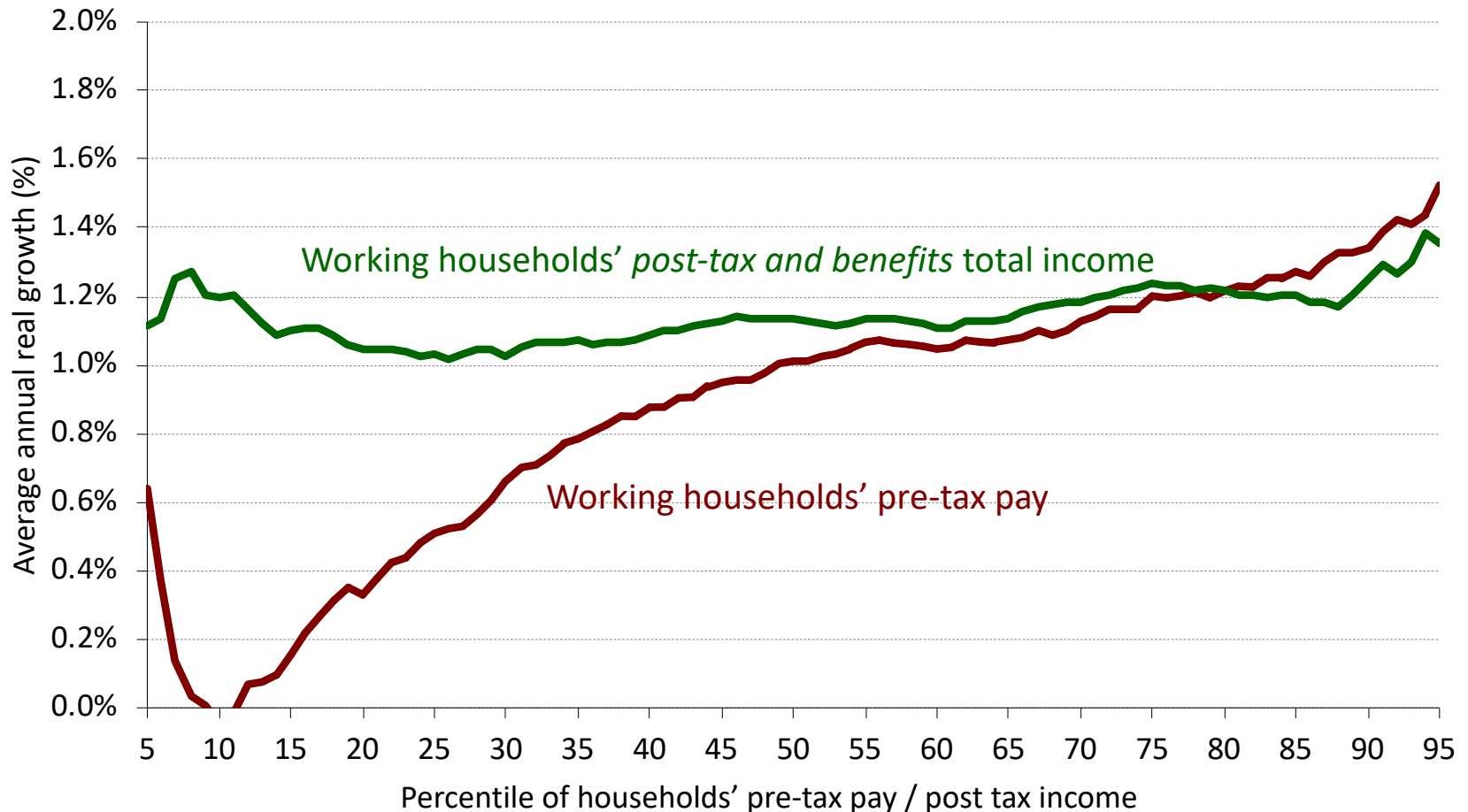
## Growth in pre-tax earnings for working households in UK 1994/5 to 2015/6



Notes: Includes self employment income and self-employed households. Family Resources Survey. All income measures are equivalised.  
Source: Blundell, Joyce, Norris Keiller and Ziliak (2018)

# Family Earnings and Family Incomes:

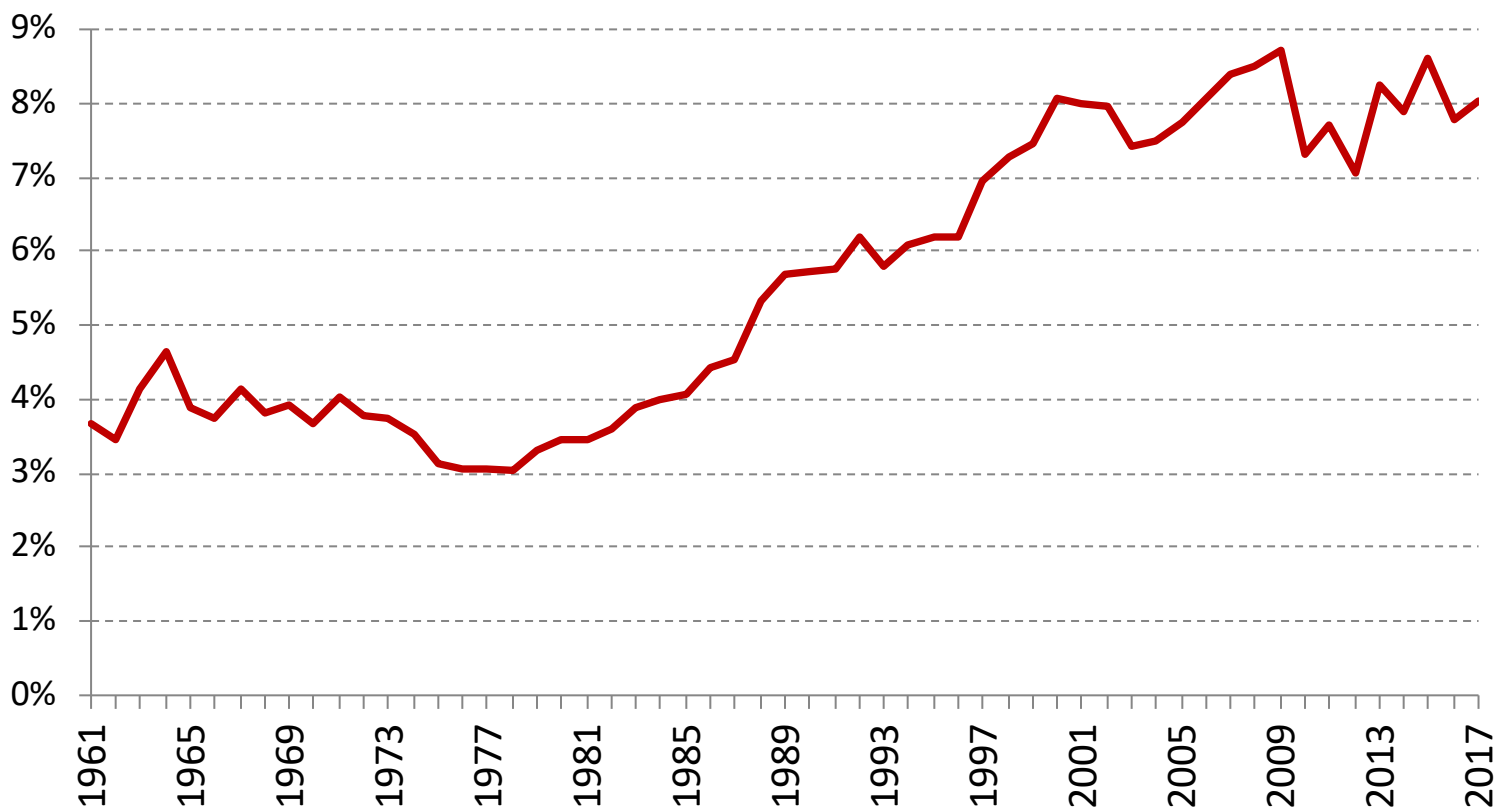
## Household income growth for working households in UK 1994/5 to 2015/6



Notes: Includes self employment income and self employed households. Family Resources Survey. All income measures are equivalised.  
Source: Blundell, Joyce, Norris Keiller and Ziliak (2018)

# The top 1% share has nearly tripled in the last 4 decades

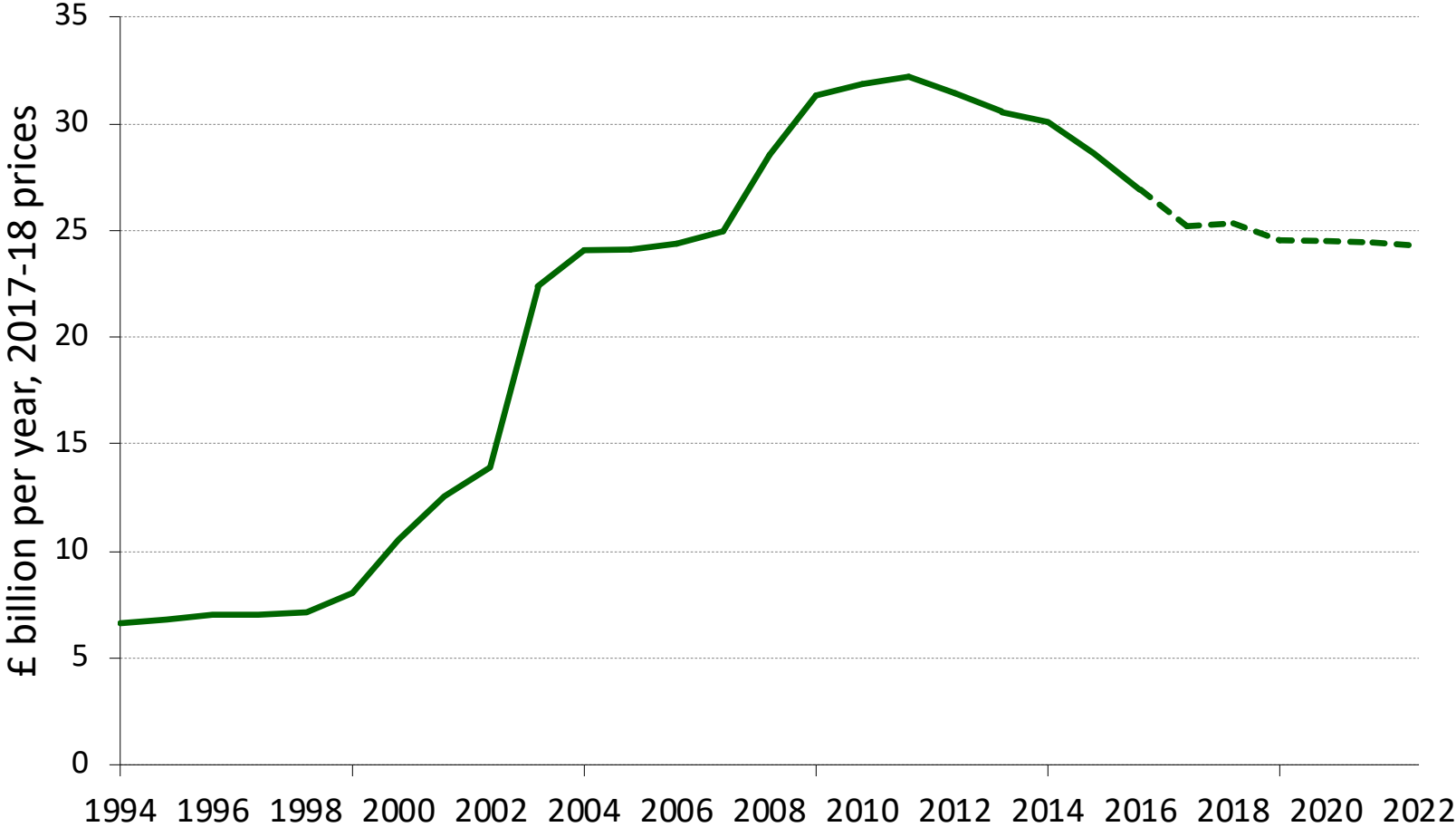
## Top 1% share of net household income, UK 1961–2017



Gini and household survey income data do not capture the very top well!

Note: Years refer to calendar years up to and including 1992 and to financial years from 1993–94 onwards, corrected with tax data. Source: Joyce and Xu, 2019

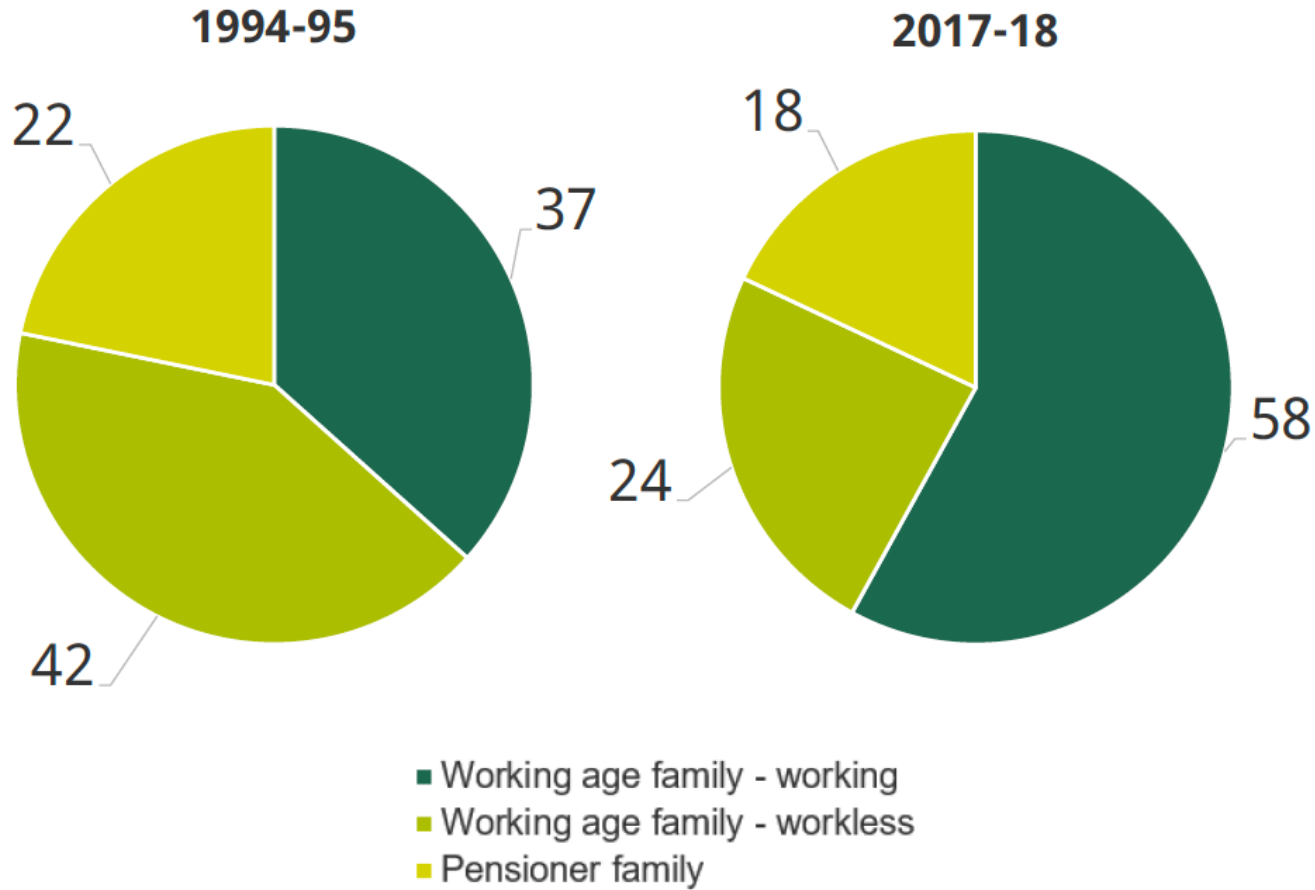
# Real spending on work-related tax credits and equivalents in the UK



Source: IFS calculations from DWP (UK) benefit expenditure tables.

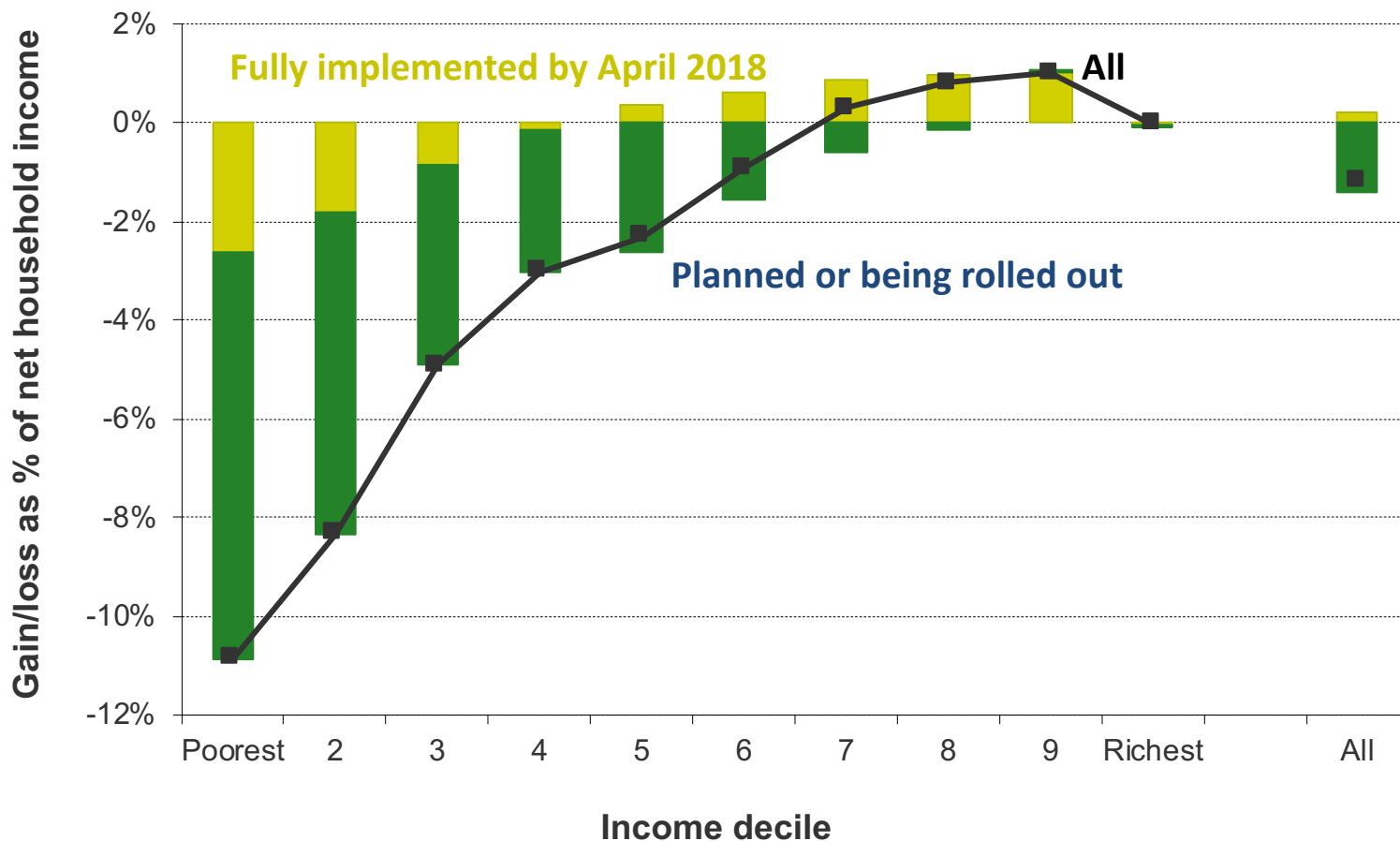


# % of those in poverty by work and family type



Source: IFS calculations for the UK, see Figure 1 of Bourquin et al. (2019)

# Long run distributional impact of personal tax/benefit reforms in the UK since 2015 going forward...

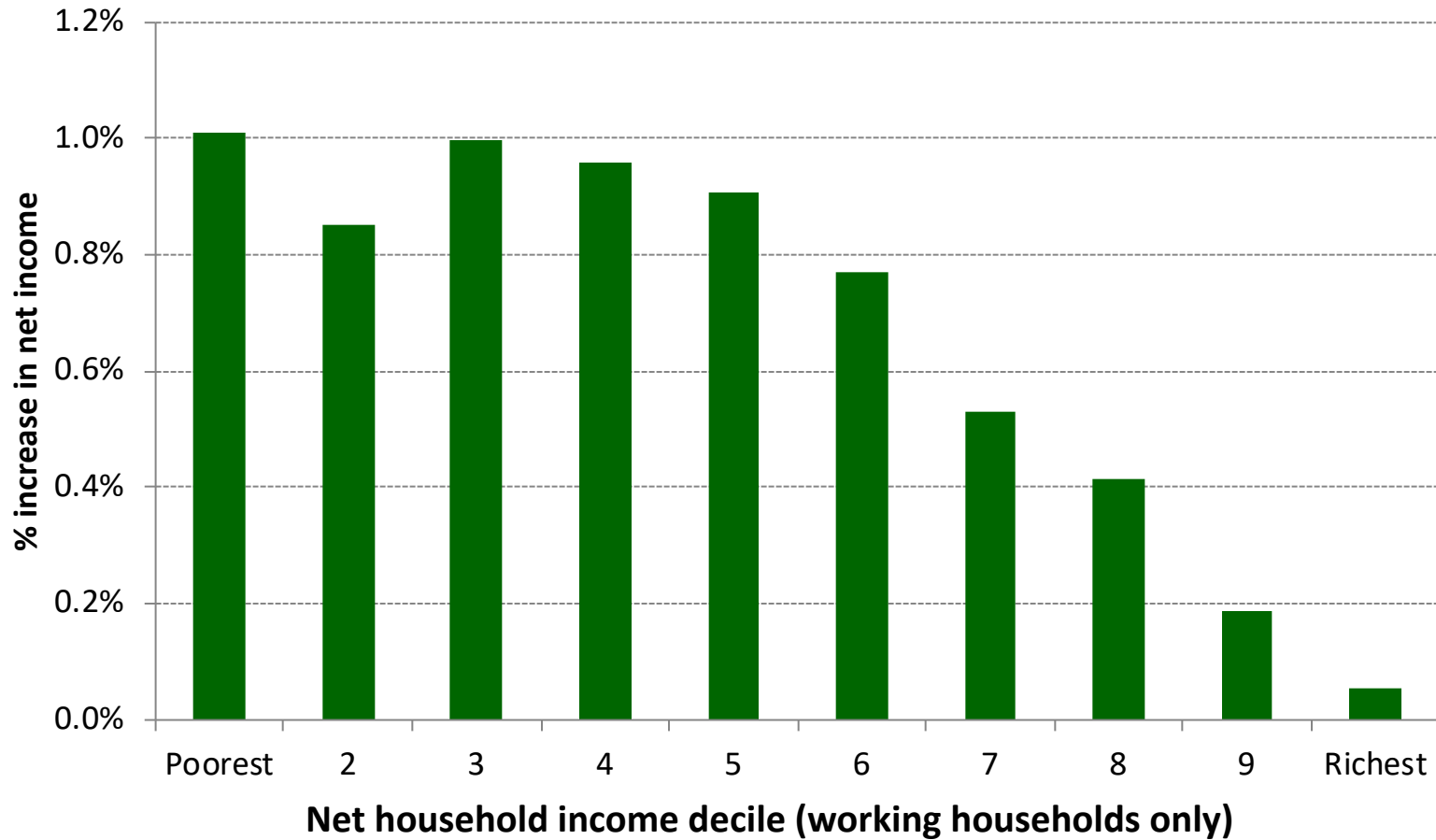


Note: Assumes full take-up of means-tested benefits and tax-credits. Policies partially rolled are Universal Credit, the 2-child limits, the replacement of DLA with PIP and the abolition of the WRAG premium in ESA.

Source: IFS calculations using the IFS micro-simulation model run on the 2015–16 FRS and 2014 LCFS.

# Higher minimum wage targets the lowest-wage people, *not* the lowest-earning households

Figure shows the increase in the minimum wage between now and 2020 in the UK. Which *working households* get the extra money?

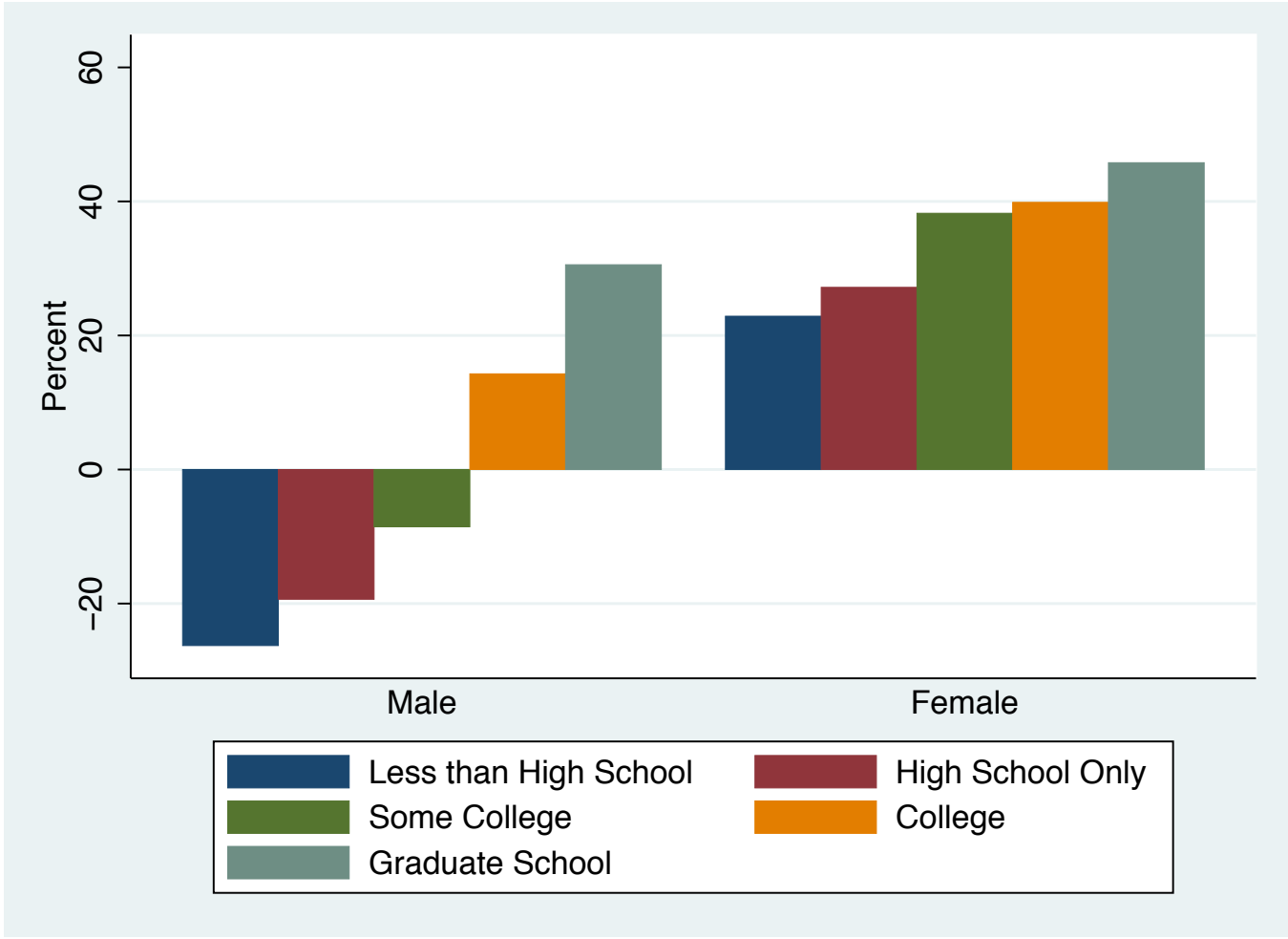


Note: Shows mechanical increase in net income arising from minimum wage rises planned between now and 2020, allowing for interaction with tax payments and benefit entitlements.

Source: Calculations using data underlying Figure 9 of Cribb, Joyce and Norris Keiller (2017):

[www.ifs.org.uk/publications/9205](http://www.ifs.org.uk/publications/9205)

# Growth in pre-tax earnings in US: 1974/5 to 2015/6



Notes: CPS, Includes self employment income and self employed households.

Source: Blundell, Joyce, Norris Keiller and Ziliak (2018)

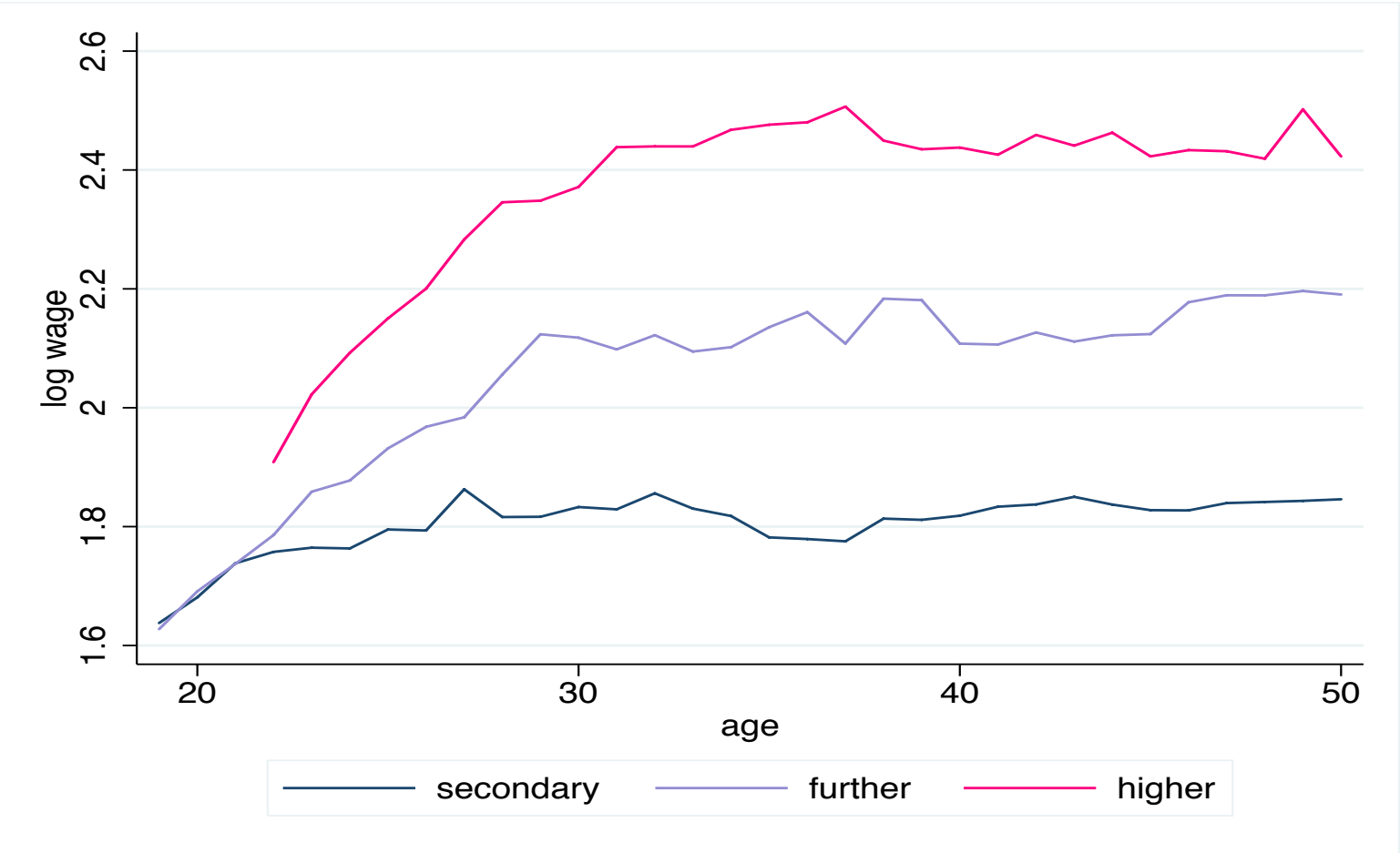
With growth in work conditioned benefits (EITC, for example)

# Focus on three key issues:

1. Wage progression,
  2. Training – human capital,
  3. The role of (good) firms.
- Then try to bring this all together with the discussion of minimum wages, in-work benefits, family incomes, assortativeness, etc., to think through an appropriate policy mix.
  - Finish (if time!) with an addendum on the implications of the covid pandemic.

# 1. Wage progression:

It's depressing at the bottom: wage profiles by education and age  
- returns to experience strongly *complementary* with education



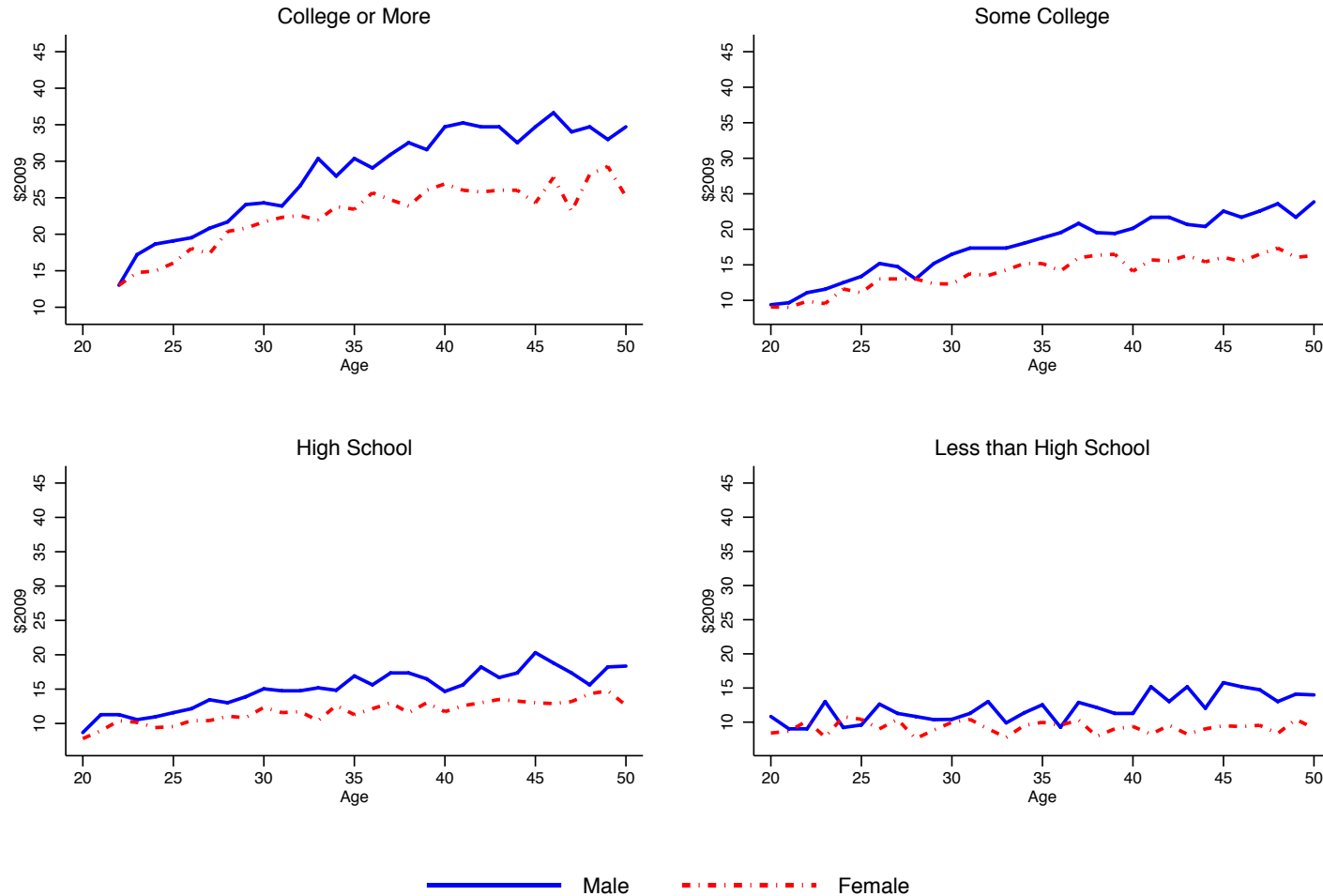
Source: Blundell, Dias, Meghir and Shaw (2016),

Notes: Women, UK BHPS. See similar for UK men and for recent cohorts in the US.

# Similar wage progression age profiles in the US

## Life-cycle growth in real median wages

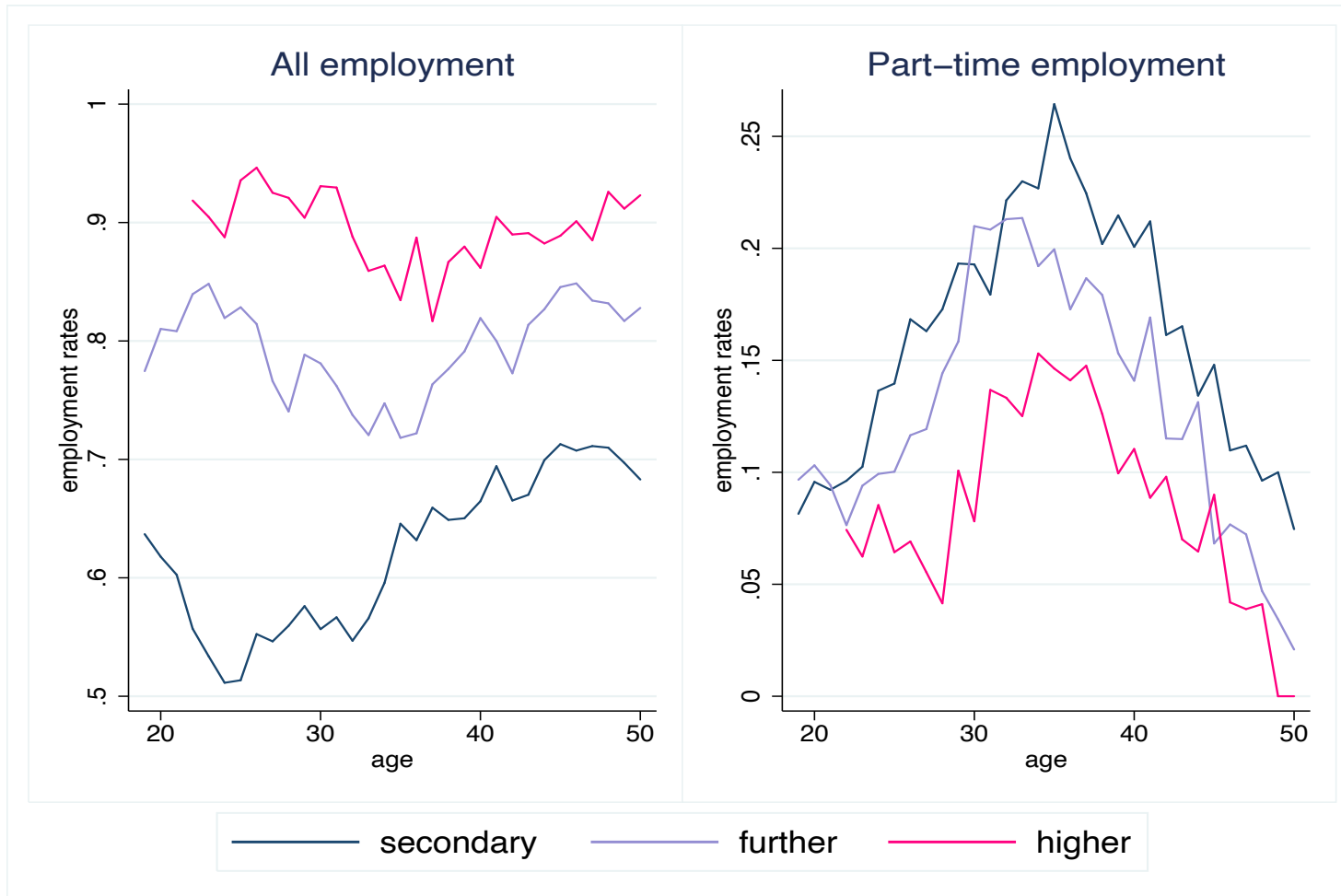
Real Median Hourly Wage–Age Profile of Male and Female Workers in the U.S., 2016



Notes: CPS, Includes self employment income and self-employed households.

Source: Blundell, Joyce, Norris Keiller and Ziliak (2018)

# Female employment by education



Source: Blundell, Dias, Meghir and Shaw (2016),

Notes: Women, UK BHPS.



# Panel data model of wage progression and work experience

- Household panel linked to family histories and IFS tax/benefit simulator
- Panel data model of log wage for individual  $i$  of education  $s$  and age  $t$

$$\ln w_{ist} = \ln W_{st} + \gamma_0(x_i) + \gamma_1(x_i) \ln(\kappa_{ist} + 1) + \omega_i + v_{ist} + \xi_{ist}$$

where

education:  $s = [1,2,3]$  [secondary (16), high school (18), university (21)]

family background:  $x_i$

baseline Mincer effect:  $\ln W_{st}$

individual effect:  $\omega_i$

experience capital:  $\kappa_{ist} = \kappa_{ist-1}(1 - \delta_s) + \alpha_0 FT_{it-1} + \alpha_2 PT_{it-1}$

persistent shocks:  $v_{ist} = \rho_s v_{ist-1} + \mu_{ist}$

random shocks:  $\xi_{ist}$

endogeneity: selection and experience; use simulated tax instruments

initial conditions: flexible heterogeneous initial productivity

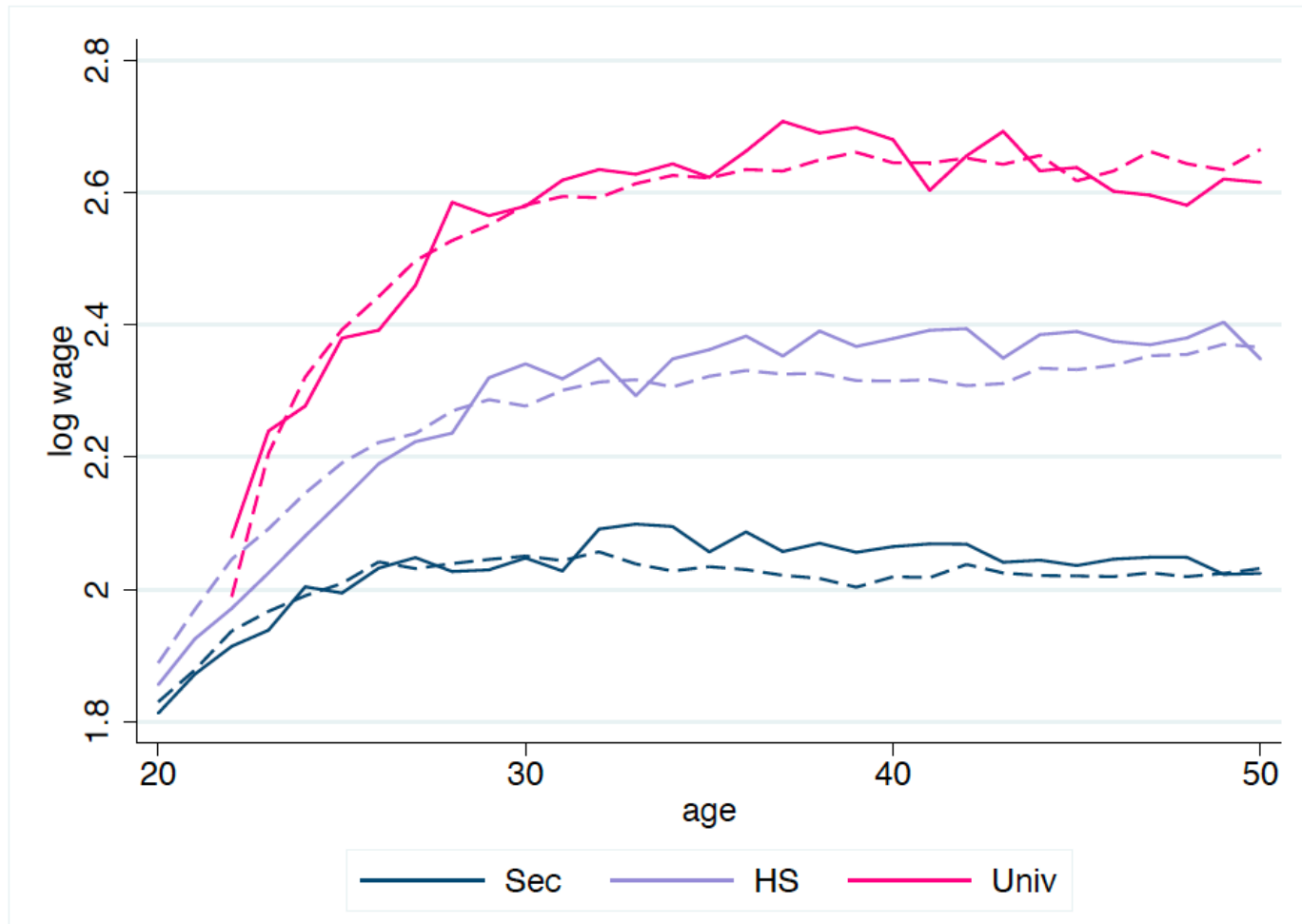
# Female wage equation estimates: UK BHPS

	Secondary		Further		Higher	
baseline at age 25	7.19	(.050)	8.64	(.067)	10.55	(.31)
returns to experience	.15	(.01)	.23	(.01)	.31	(.02)
autocorrelation coef	.92	(.01)	.92	(.01)	.88	(.02)
se innovation	.12	(.01)	.15	(.01)	.14	(.01)
initial prod	.14	(.01)	.13	(.01)	.31	(.03)
initial productivity: se	.14	(.02)	.20	(.02)	.23	(.03)
depreciation rate	.08	(.01)	.06	(.01)	.07	(.01)
accumulation of HC in PTE	.15	(.02)	.10	(.02)	.12	(.02)

Notes: Interactions with background factors are included

Source: Blundell, Dias, Meghir and Shaw (Ecta, 2016),

# Wage distribution fit



Notes: Interactions with background factors are included  
Source: Blundell, Dias, Meghir and Shaw (Ecta, 2016),

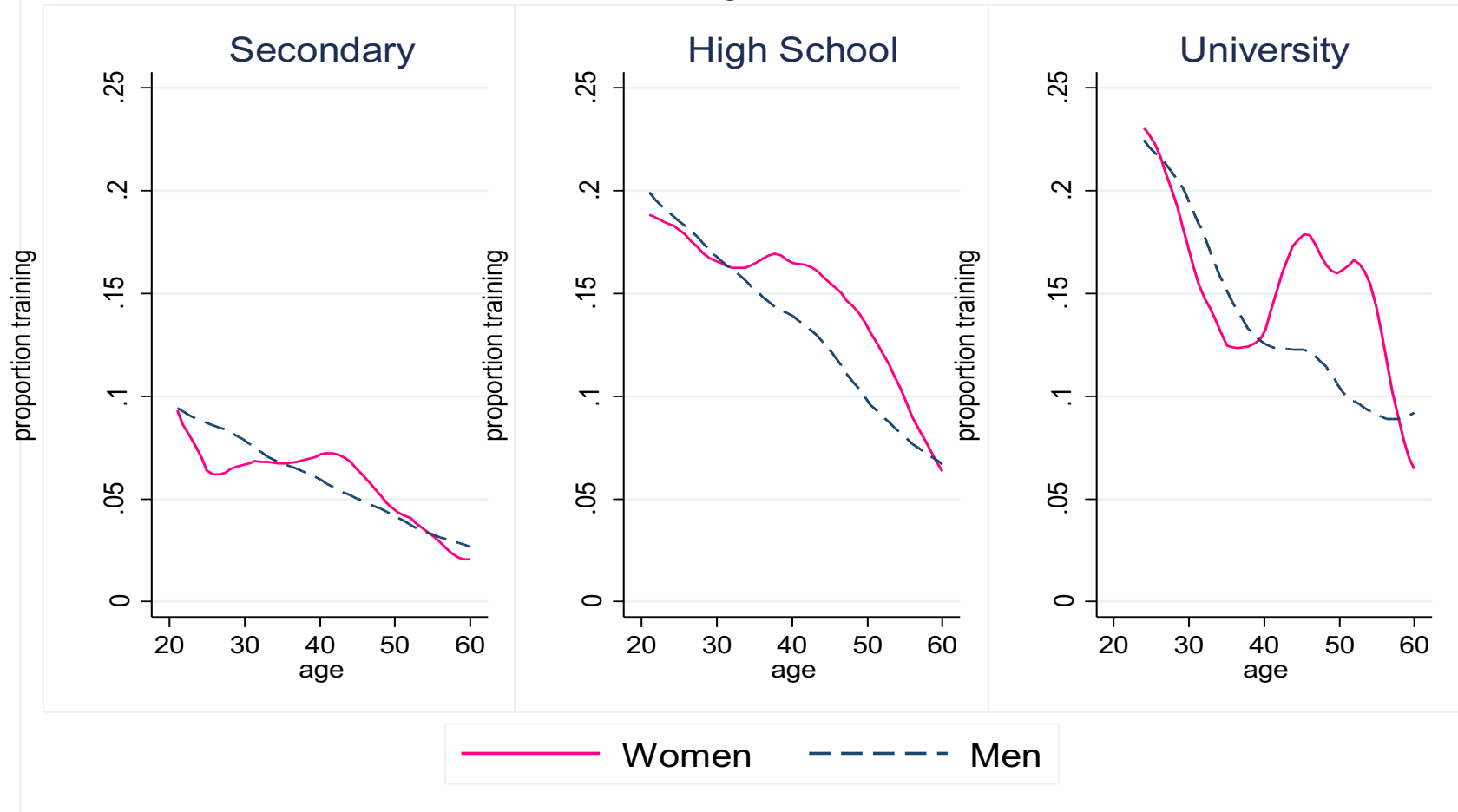
# Wage progression results: summary

- The returns to work experience show strong complementarity with education,
  - much lower returns for low educated,
  - much lower returns to part-time work.
- These effects seem to be getting stronger, generating increasing earnings inequality over the life-cycle and over time,
  - We find experience and the part-time penalty explain around 70% of the gender wage gap in the UK.
  - Note too the fall in labour market attachment (part-time) for younger low wage men in the UK.
- What about the role of on-the-job training?

## 2. Training also appears complementary with education

### Prevalence of training over past year

All training, 50+ hours



# Training questions

## READ OUT

I would like to ask some details about all of the training schemes or courses you have been on since September 1st 1999, (other than those you have already told me about), starting with the most recent course or period of training even if that is not finished yet.

	D69.	D70.	D71.	D72.					
Event no.	<b>SHOWCARD D13</b> Where was the main place that this course or training took place?	Was this course or training. . .  <b>READ OUT AND CODE FOR EACH</b>	Since September 1st 1999 how much time have you spent on this course or training in <u>total</u> ?	<b>SHOWCARD D14</b> Which statement or statements on this card describe how any fees were paid, either for the course or for examinations? <b>CODE ALL THAT APPLY</b>					
1	<p><b>WRITE IN MAIN PLACE AND ENTER CODE FROM SHOWCARD CODE ONE ONLY</b></p> <p><b>WRITE IN PLACE</b></p> <p>_____</p> <p>_____</p> <p><b>ENTER CODE FROM SHOWCARD</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> <p><b>JTRPLCE1</b></p>			<p style="text-align: center;"><b>Yes No</b></p> <p>To <b>help</b> you get started in your current job?..... 1 ..... 2 <b>JTRWHYA1</b></p> <p>To <b>increase</b> your skills in your current job for example by learning new technology? ..... 1 ..... 2 <b>JTRWHYB1</b></p> <p>To <b>improve</b> your skills in your current job?..... 1 ..... 2 <b>JTRWHYC1</b></p> <p>To <b>prepare</b> you for a job or jobs you might do in the future?..... 1 ..... 2 <b>JTRWHYD1</b></p> <p>To <b>develop</b> your skills generally? ..... 1 ..... 2 <b>JTRWHYE1</b></p>	<p><b>ENTER NUMBER</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> <p><b>JTRQ1</b></p> <p><b>CODE UNIT</b></p> <p>Hours..... 1</p> <p>Days..... 2</p> <p>Weeks ..... 3</p> <p>Months ..... 4</p> <p>Other (SPECIFY) _____ 5</p> <p><b>JTRU1</b></p>				<p>No fees ..... 01 <b>JTRFEEA1</b></p> <p>Self/family ..... 02 <b>JTRFEEB1</b></p> <p>Employer/ future emp..... 03 <b>JTRFEEC1</b></p> <p>New Deal scheme ..... 05 <b>JTRFEEE1</b></p> <p>Training for work, Youth/Emp training/ TEC ..... 06 <b>JTRFEEF1</b></p> <p>Other arrangement (SPECIFY) _____ 07 <b>JTRFEEG1</b></p>

# Adding training investments to the log wage equation by education group $s$

- Geo-coded household panel linked to family histories, earnings, hours,..
- Extend dynamic panel data model of earnings for individual  $i$  and training  $\tau$ ,
- Training investment  $\tau$  adds to the stock of human capital.

Parameter	Secondary	High School	University
Return to HC ( $\gamma_{s,0}$ )	0.134 (.02)	0.230 (.03)	0.290 (.03)
Exp from training ( $\tau$ )	0.119 (.08)	0.139 (.04)	0.096 (.02)
Exp from PT work	0.092 (.01)	0.093 (.02)	0.105 (.03)
Exp depreciation rate ( $\delta$ )	0.081 (.04)	0.087 (.03)	0.083 (.03)

*Training impact:* Relative to year full-time experience

Source: Blundell, Costa-Dias, Goll and Meghir (2020), Notes: UK BHPS

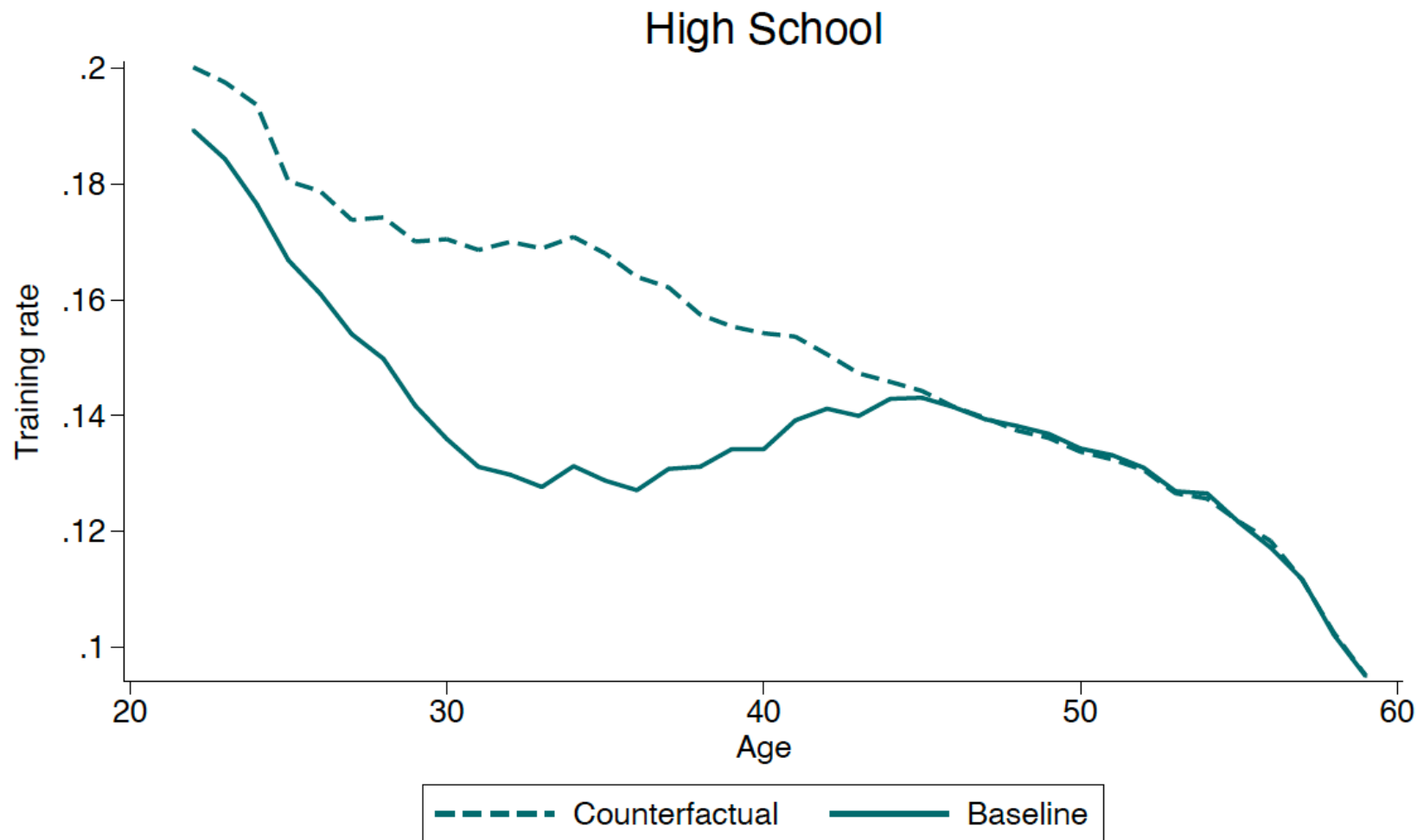
# Wage progression and training: results summary

- Training enters the wage equation as an additional human capital investment
  - potentially offsetting the depreciation of experience capital,
  - allow for endogeneity of training,
  - allow for job induction training.
- The training impact is significant, *conditional* on education, experience, family background, persistent shocks and heterogeneity.
- Particularly strong effects for middle education group
  - with return equivalent to that in formal education,
  - firm-based qualification training is key.
- Training (tax credit) subsidy?



# Subsidy policy simulation

£500 subsidy per year available when child is age 0-7.



Source: Blundell, Costa-Dias, Goll and Meghir (2019), Notes: UK BHPS

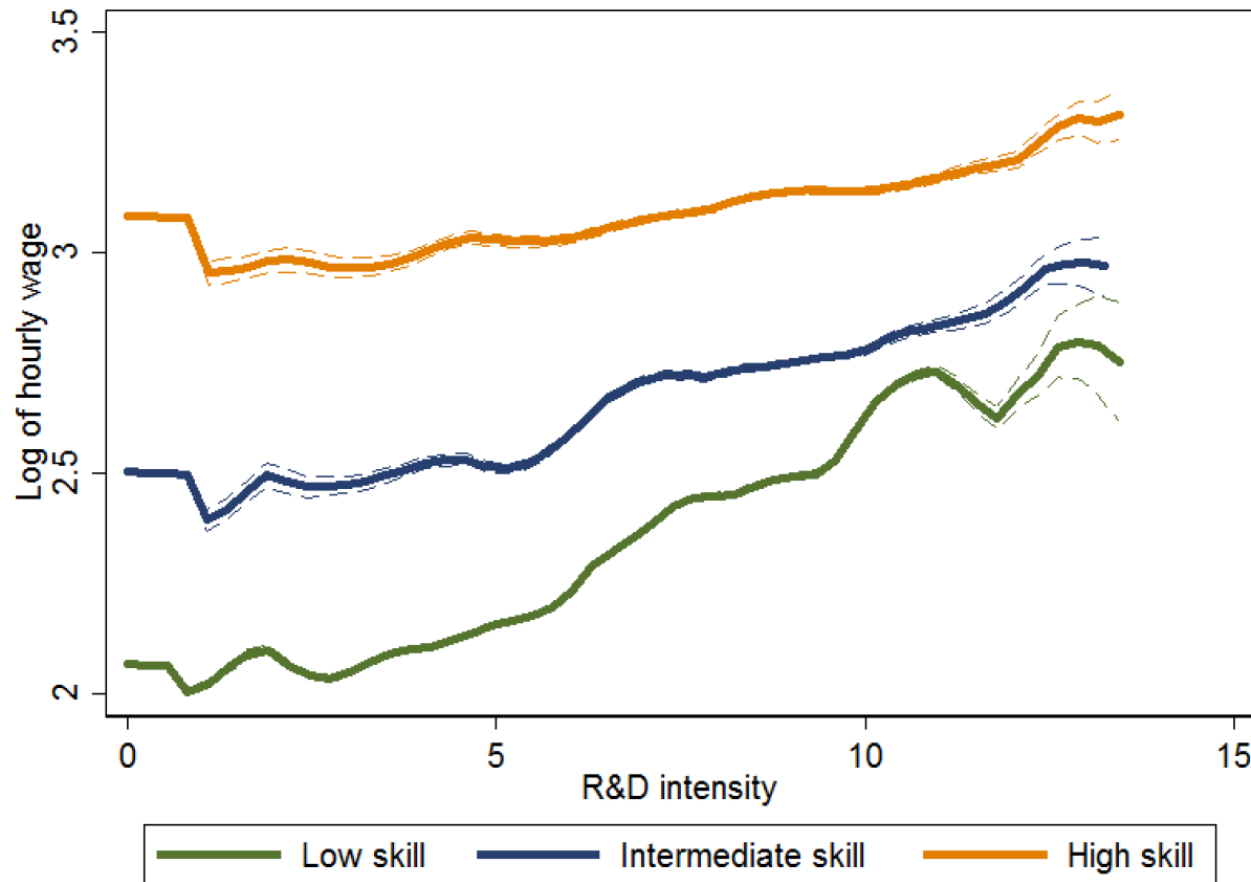
### 3. Wage progression and firms

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- Do firms matter?
- Why do some low education workers do well in 'good' firms?
- What constitutes a good firm?

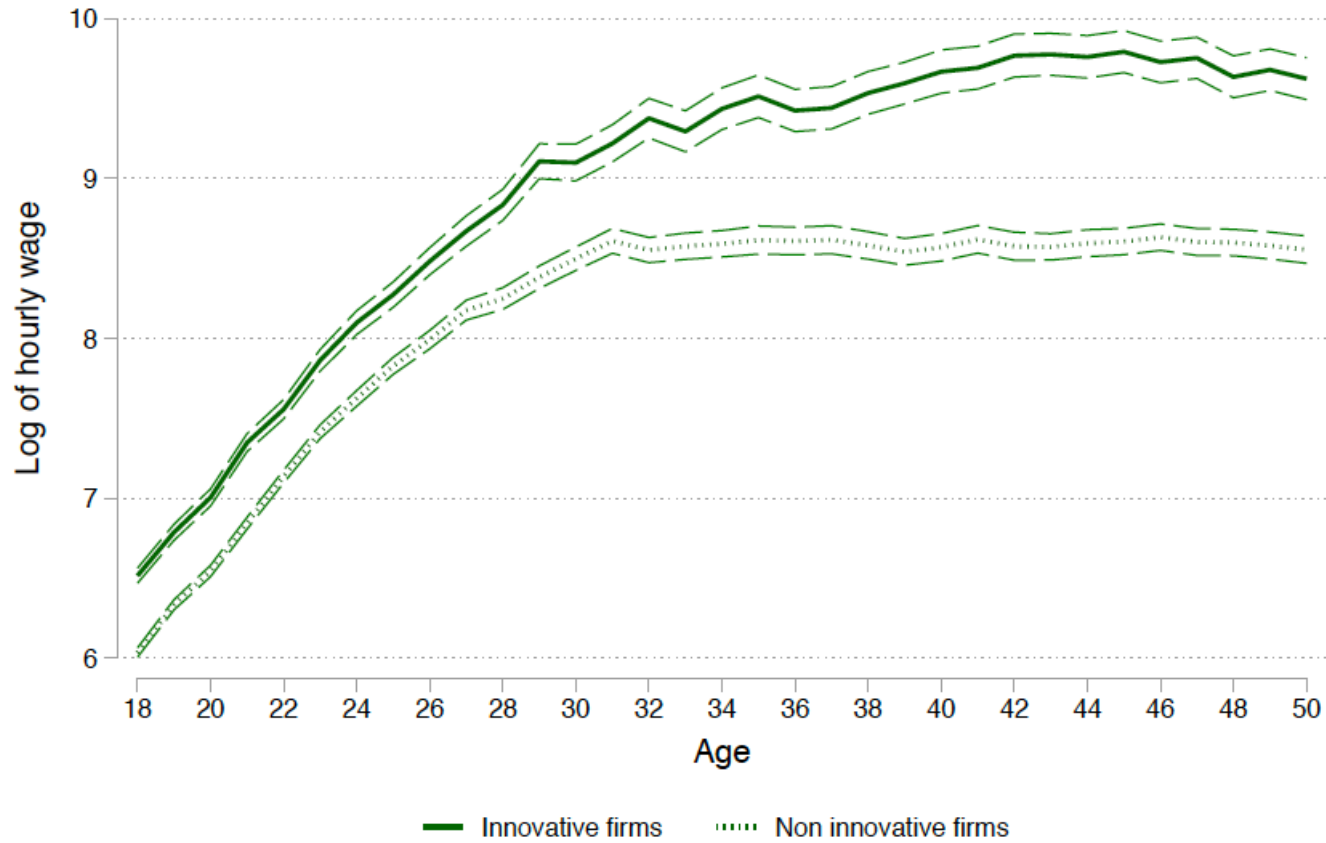
# Low skilled workers and 'good' firms: not all bad at the bottom

## log hourly wage rate and R&D intensity: by skill group



Not all selection, some abilities of low educated are complementary with technology, they get training and the jobs are not outsourced....

# Wage progression for workers in low-skilled occupations



Notes: matched employer-employee data for UK 2004-2016; average hourly wage for workers in low-skilled occupation in innovative and non-innovative firms

Source: Aghion, Bergeaud, Blundell and Griffith (2020)

# Firms and wage progression: empirical specification

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- Follow workers using employee-employer matched panel data for the UK that includes information on R&D, patents, and task content,
  - define 'innovative' firms using R&D and patent data,
  - separate workers by three broad skill types,
- Define task content of jobs according to the degree it *complements* high skilled workers and investment.
- Key interaction: task\*skill\*innovative,
  - including individual and firm effects.

# Firms and wage progression: summary results

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- Workers in more innovative firms earn higher wages on average than workers in non-innovative firms,
- Some workers in low skilled occupations attract higher wages in innovative firms
  - these workers see more wage progression and training with tenure,
  - find this reflects the value of 'soft skills' for low educated workers,
  - find workers with these skills are less likely to be out-sourced.
- The idea: workers who perform these tasks are *complementary* to high skilled workers and capture a higher share of the surplus than equivalent workers in low-R&D firms.

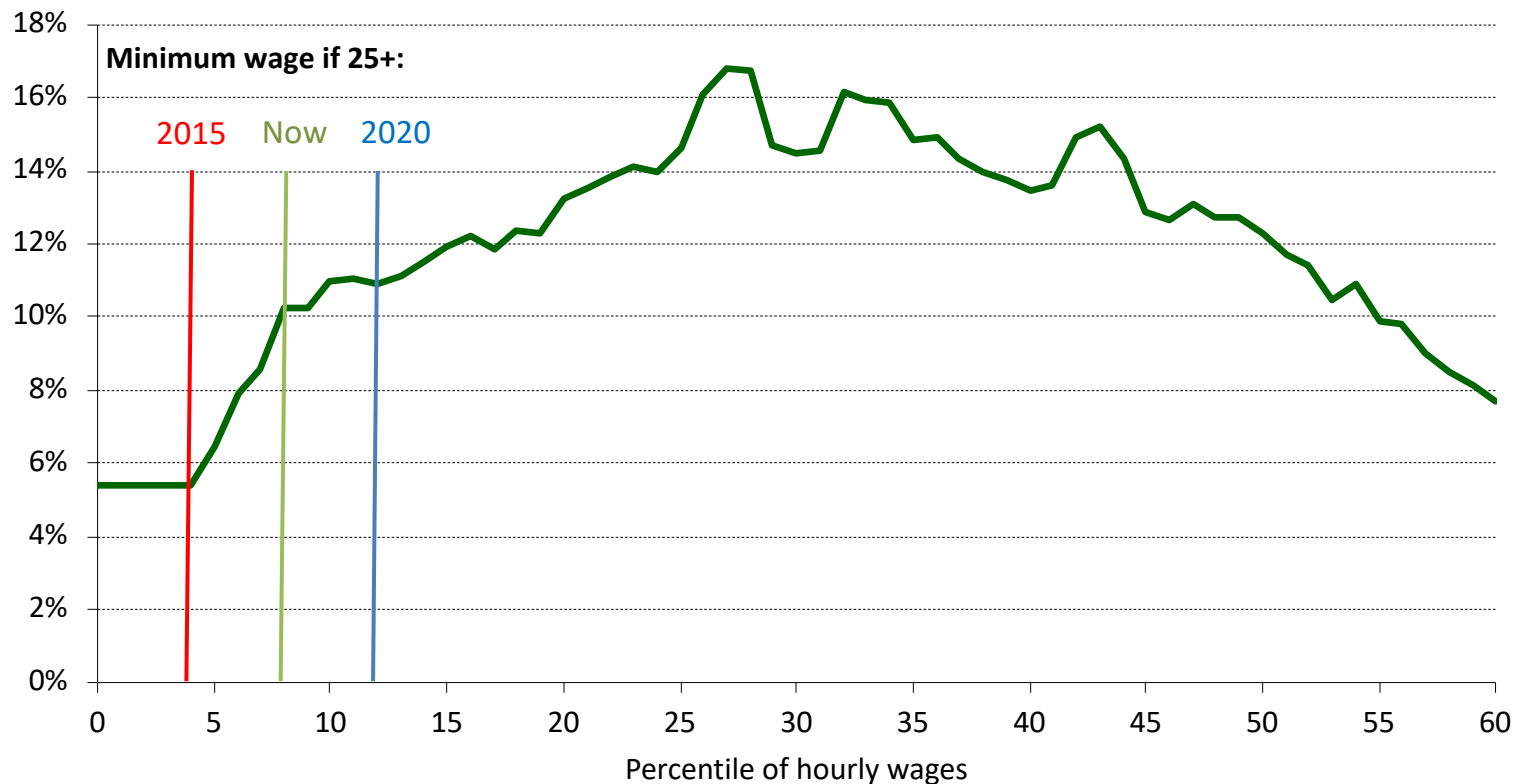
# Some take-aways

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- Little wage progression for low educated & those in part-time work
  - employment is not enough to escape poverty or for self-sufficiency,
  - diverging profiles with education? US and UK evidence. Italy?
- Increased female labour supply
  - not overcome family earnings inequality,
  - assortativeness and low earnings share.
- Earned income tax credits are well targeted to low earning families
  - offset means-testing at the extensive margin for parents,
  - but earnings progression and incidence? (conditional on mentoring etc?)
- Minimum wage has lifted *hourly* wages at the bottom
  - but not well-targeted to low earning families, due to secondary workers and falling male hours -> *complementary* to tax credits
  - increasingly affecting workers vulnerable to automation?

# Jobs affected by higher minimum are not the same as those previously affected

Proportion of employees aged 25+ in the most “automatable” jobs (top 10% of routine task intensity”)



Source: Cribb, Joyce and Norris Keiller (2018): [www.ifs.org.uk/publications/10287](http://www.ifs.org.uk/publications/10287). Data used is ASHE, 2015.



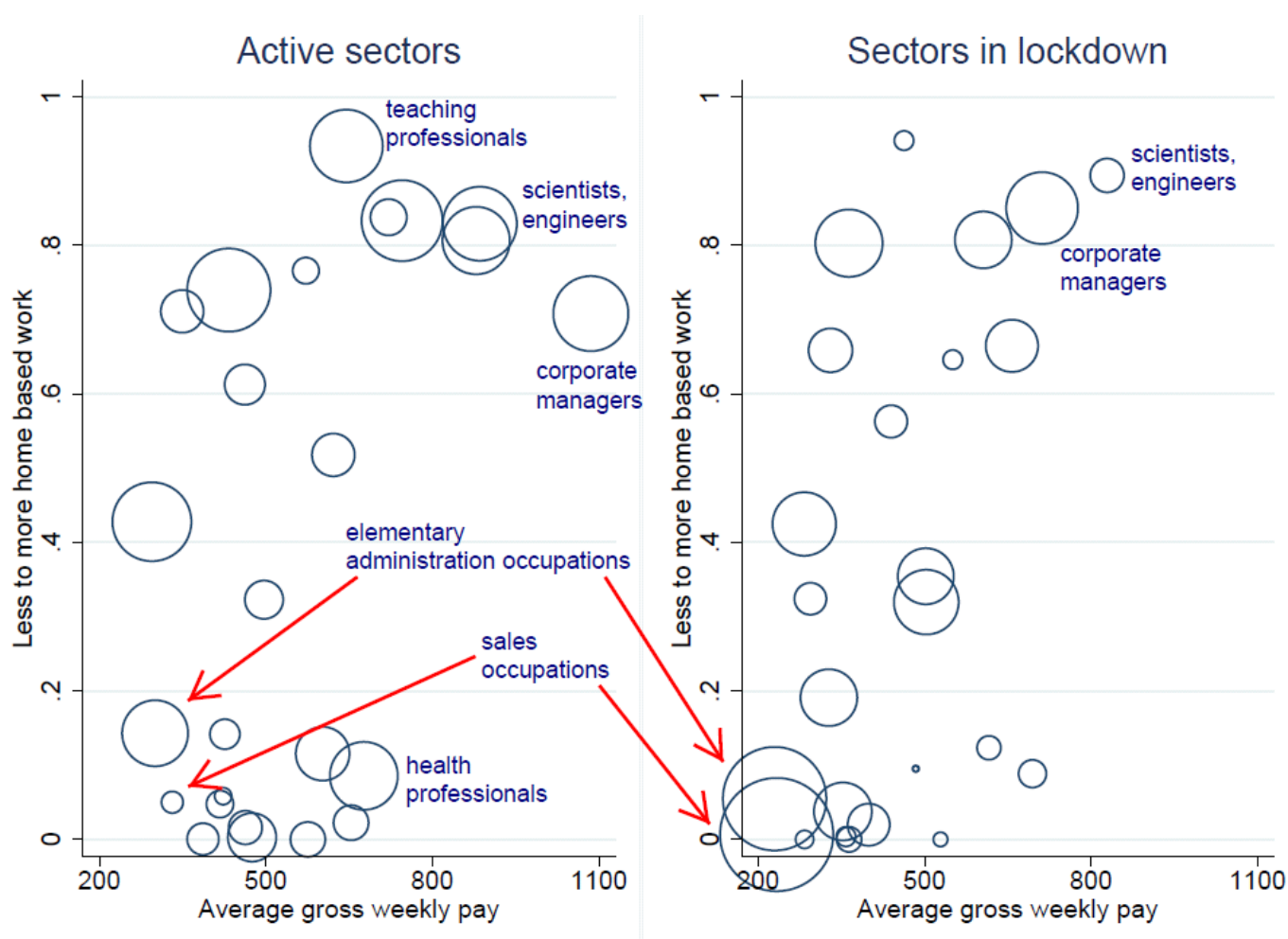
# Designing a policy mix

- What limits wage progression?
  - less training and networking, constraints on build-up of skill in low-hours jobs,
  - avoid part-time incentives in welfare & incorporate training incentives (CCT?)
- What skills among those with lower education are valued by ‘good’ firms?
  - skills that complement innovation are less likely to be out-sourced,
  - ‘soft skills’ seem key
  - re-think qualification firm-based training and the role of technology.
- Do we need stronger competition policy and contract regulation alongside redistributive tax credit and min wage policies?
  - increasing mark-ups, solo self-employment and the gig economy may signal declining bargaining power of lower educated workers..
  - improve access to training, non-wage benefits and job search information.

# Implications of the Covid pandemic.....

- Far from pushing labour market inequalities and redistribution down the agenda, the pandemic has
  - exacerbated existing inequalities – in earnings, work, health, education, age, gender,...
  - opened up new fissures along dimensions that were previously less significant – working at home, use of public transport, .....
- The loss of earnings from the pandemic and the lockdown has brought the effectiveness of the safety net across different countries into sharp focus.
- Will there be a new emphasis on building a fairer society?
  - especially with the challenge of doing so while facing unprecedented levels of (peace time) debt.

# Workers in lockdown sectors are lower paid and less likely to be able to work from home



Notes: IFS calculations. LFS for the years 2018-19, adults aged 20-60. Pay in Dec 2019 prices. O-net data used to identify occupations that are amenable to work from home. Use classification in Dingel and Neiman (2020) to identify occupations that cannot be worked from home.

# Labor Market after 6-week of Lockdown: Italy

VARIABLES	(1)	(2)	(3)
	Stopped Working	Work from Home	Work Outside
female	0.069	0.010	-0.079
	[0.046]	[0.053]	[0.051]
young	0.071	0.012	-0.083
	[0.063]	[0.060]	[0.054]
fifty	-0.099	0.029	0.069
	[0.078]	[0.060]	[0.078]
elderly	-0.090	0.057	0.034
	[0.073]	[0.068]	[0.067]
No high school	0.289***	-0.343***	0.054
	[0.089]	[0.064]	[0.092]
High school	0.165***	-0.167***	0.002
	[0.050]	[0.054]	[0.052]
Low income	0.024	-0.045	0.021
	[0.065]	[0.052]	[0.059]
Medium income	0.081	-0.097	0.016
	[0.063]	[0.058]	[0.063]
Income no answer	0.126**	-0.035	-0.091
	[0.059]	[0.070]	[0.067]
Service worker	0.018	-0.048	0.030
	[0.056]	[0.076]	[0.056]
Blue collar	0.165**	-0.333***	0.167***
	[0.073]	[0.083]	[0.063]

Source: Vincenzo Galasso (2020), Covid: Not a great equaliser

# What changes after the covid pandemic?

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- Wage inequality?
  - Will there be a move to enhancing wages of low paid ‘key workers’?
  - Or will the increase in demand for e-commerce and IT dominate? An increase in the education premium and for those who can work from home?
  - Training for re-allocation?
- Will firms consolidate power?
  - Rethinking competition policy.
- A ‘just system of rewards’?
  - More people will have experienced welfare state, will this change attitudes?
  - A new emphasis on social insurance?
  - Intergenerational redistribution – the already squeezed young working age...
- Financing the deficit and fair taxation.
  - Enhancing fiscal capacity and trust in government in a time of populism?
  - A new social contract?

# Summary

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- A depressing finding – *little wage progression for low skill.*
- Employment is *increasingly* not enough to move out of poverty or for longer run self-sufficiency – *diverging wage profiles by education and part-time work*
- Female employment and family earnings inequality – *assortativeness.*
- The policy mix:
  1. **Earned income tax credits?** - encourage employment, well-targeted to low earning families, but preserve low progression, & adverse incidence.
  2. **Minimum wage?** - not so well-targeted, due to family earnings and falling male hours/attachment. Should be a *complement* to tax credits.
  3. **Human capital/training incentives/tax credits for low educated?** - focus on soft skills for low educated, training for women returning after children, early years,...
  4. **Competition policy and market power?** - anti-competitive clauses, job search, ...
- The Covid pandemic has moved inequality further up the agenda, exacerbating existing inequalities and creating new ones.