



Inequality, Redistribution and the Wage Progression: Reflections from the Deaton Review

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Keynote Lecture

Labour Force and Annual Population Surveys Conference

ONS – UK Data Service

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IFS-Deaton Review: Inequalities in the 21st Century

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



The IFS Deaton Review

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

A 5-year study, independent of government, chaired by Angus Deaton with an interdisciplinary panel, 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 the adverse impact of inequalities?
- For developed economies with the UK as the running example, but comparative in nature....
- The Review is a comparative study with an interdisciplinary panel,....

An International and Interdisciplinary Panel

Chair



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



Paul Johnson
IFS & UCL



Robert Joyce
IFS



Kathleen Kiernan
University of York



Lucinda Platt
London School of Economics



Imran Rasul
UCL & IFS



Debra Satz
Stanford University



Jean Tirole
Toulouse School of Economics





The IFS Deaton Review

Commissioned studies with commentaries

focus here on a subset inequality, redistribution and the progression....

1. Why inequality, what inequality?
2. Political economy and political polarisation
3. Attitudes to inequality
4. History and technology
5. Gender
6. Immigration
7. Health
8. Race and criminal justice
9. Geography and place
10. Families
11. Early child development
12. Education systems and access
13. Social Mobility
14. Labour markets
15. Firms, innovation and market power
16. Trade and globalisation
17. Corporate, capital and top taxes
18. Transfers, welfare and tax credits

Launched online sequentially since Oct 2021

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



The IFS Deaton Review

Format of the Review

Much like the *IFS Mirrlees Review on Tax Reform*, the *IFS Deaton Review* will be published in several volumes....

I. Two volumes of evidence:

- commissioned studies on different aspects of inequality, with commentaries from alternative perspectives – published!

II. An accessible monograph written by the panel:

- sets out what has happened to inequality, why, and what can be done.

III. 17 Country Studies across Europe and North America.

- The LFS/APS, UK Data Service and linked-data collaborations with ONS, have been essential for the success of the evidence base for the Review.

Background studies, all available online - <https://ifs.org.uk/inequality/>

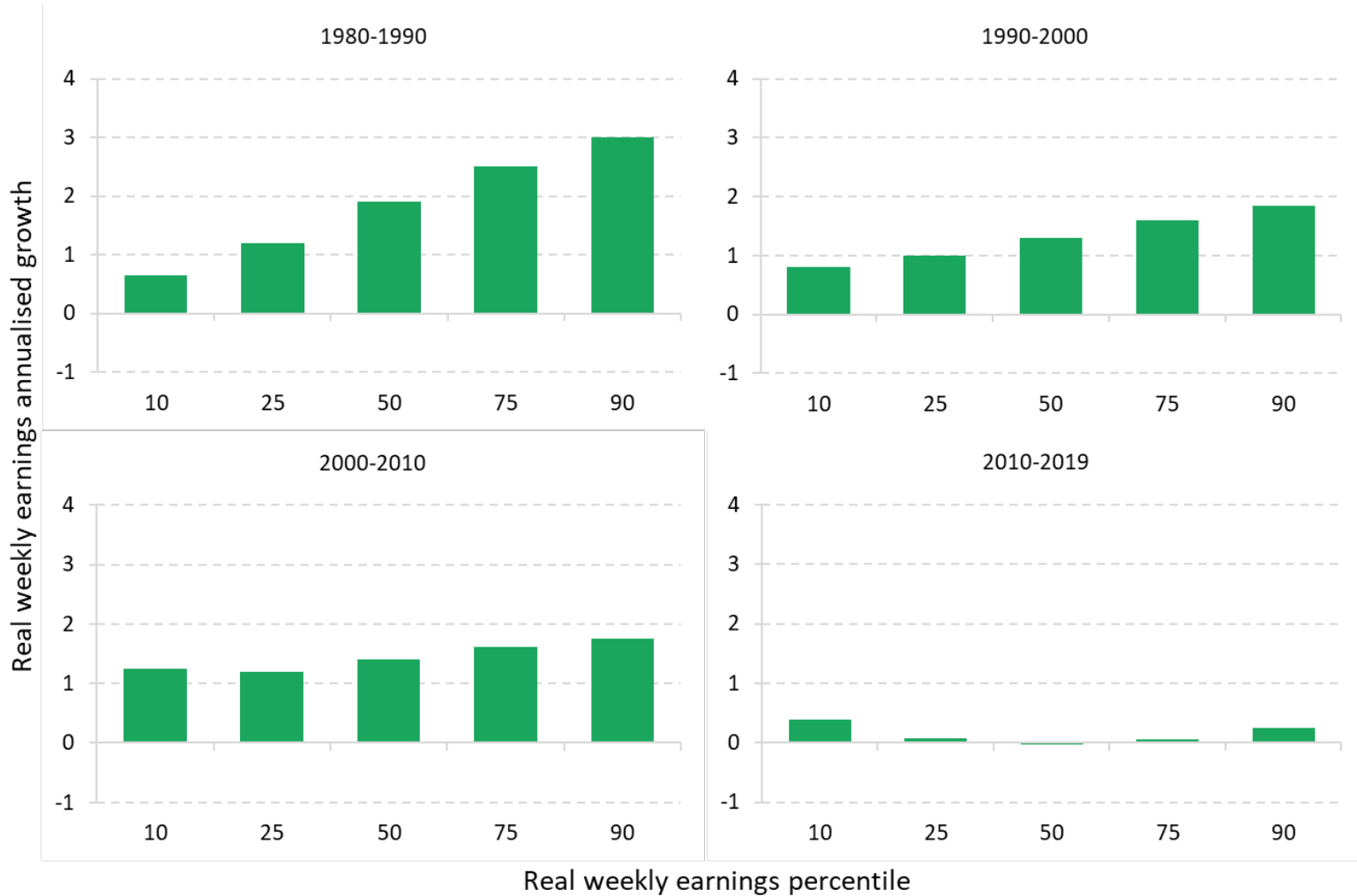
- ‘Inequality, Redistribution and the Labour Market’, Richard Blundell, *Centenary Issue, Economica* 89, May 2022.
- “What has been happening to career progression?” Richard Blundell, Monica Costa Dias, Robert Joyce and Agnes Norris Keiller, IFS Briefing Note BN301, Alan Turing Institute, September 2020.
- ‘Inequality and the COVID Crisis’, Richard Blundell, Jonathan Cribb, Monica Costa-Dias, Robert Joyce, Tom Waters, Xiaowei Xu, *Annual Review of Economics*, Volume 14, August 2022
- ‘Soft Skills and the Wage Progression of Low-Educated Workers’, Philippe Aghion, Antonin Bergeaud, Richard Blundell, and Rachel Griffith, *CEPR DP14102* updated March 2022.
- ‘Wages, Experience and Training of Women over the Lifecycle’, Richard Blundell, Monica Costa-Dias, David Goll and Costas Meghir, *Journal of Labour Economics*, January, 2021.
- ‘Income Inequality and the Labour Market in Britain and the US’, Richard Blundell, Robert Joyce, Agnes Norris Keiller, and James P. Ziliak, *Journal of Public Economics*, March 2018.
- ‘Female Labour Supply, Human Capital and Welfare Reform’, Richard Blundell, Monica Costa-Dias, Costas Meghir and Jonathan Shaw, *Econometrica*, 84(5), September 2016.
- ‘Labour market inequality’, Steve Machin and Giulia Giupponi, IFS Deaton Review of Inequalities, March 2022.
- ‘The transfer system’, Hilary Hoynes, Robert Joyce and Tom Waters, IFS Deaton Review of Inequalities, February 2022.
- ‘Spatial disparities across labour markets’, Henry Overman and Xiaowei Xu, IFS Deaton Review of Inequalities, February 2022.
- ‘Women and men at work’, Alison Andrew, Oriana Bandiera, Monica Costa-Dias, and Camille Landais’, IFS Deaton Review of Inequalities, November 2021.
- ‘Firms and Inequality’, Jan De Loecker, Tim Obermeier and John Van Reenen’, IFS Deaton Review of Inequalities, April 2022.
- Accessible from y webpage: <https://www.ucl.ac.uk/~uctp39a/>

Longer-term challenges motivating this talk

- Increasing earnings inequality
 - with persistent adverse labour market shocks and poor wage progression for lower educated workers and for part-time work.
 - diverging life-cycle wage profiles by education, and low rates of on-the-job training for lower educated workers
- Growing solo self-employment, platform work and outsourcing
 - with low rates of on-the-job training and fewer paths to good jobs for non-university educated.
- Increasing in-work poverty
 - with employment alone (increasingly) not enough to escape poverty and low earnings.
- Increasing family earnings inequality
 - female labour supply doing little to off-set the rise, due to lower attachment, part-time work, the gender gap/child penalty and assortativeness.
- Large differences in prosperity between regions – ‘left-behind’ areas with low education outcomes, poor wage progression, and low mobility.
- We can’t address all the concerns about labour market inequality by tax and welfare reform alone,
 - the challenge is how best to balance tax and welfare-benefit policy with human capital policies, min wages, regulation and place-based policies.
- First, some background descriptives for the UK....

Real weekly earnings growth at different percentiles by decade

Panel A. Men



Note: The figure shows CPI-deflated weekly earnings growth at the 10th, 25th, 50th, 75th and 90th percentiles of the distribution for full-time employees by decade. Panel A shows results for men and panel B for women. Source: Labour Force Survey, Machin (2010) and IFS Deaton Review.

Real weekly earnings growth at different percentiles by decade

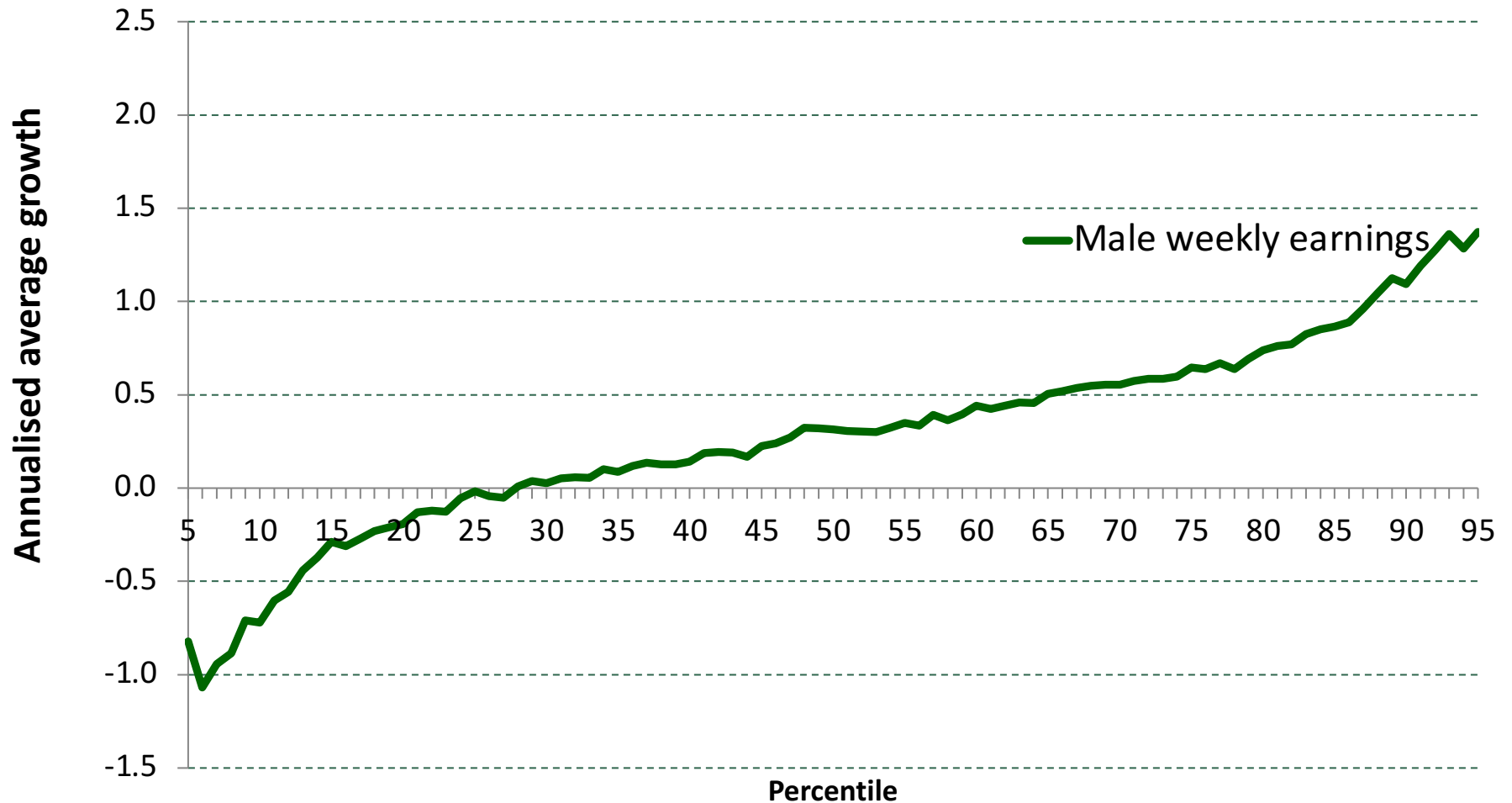
Panel A. Women



Note: The figure shows CPI-deflated weekly earnings growth at the 10th, 25th, 50th, 75th and 90th percentiles of the distribution for full-time employees by decade. Panel A shows results for men and panel B for women. Source: Labour Force Survey, Machin (2010) and IFS Deaton Review.

Growth in UK male weekly earnings:

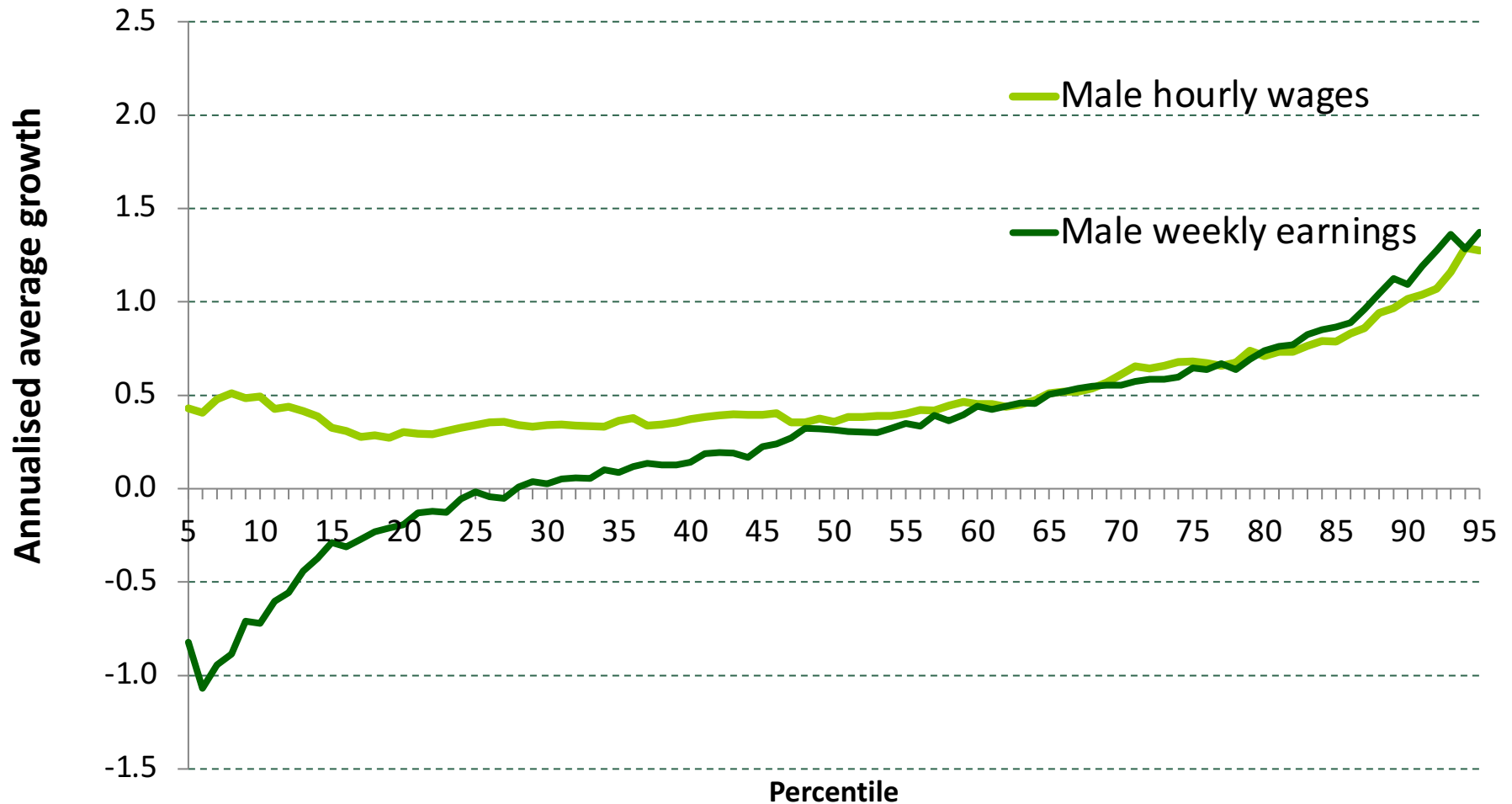
1994/95 – 2016/17



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

Data used is UK FRS 1994-95 and 2016-17, not in full time education and aged <64

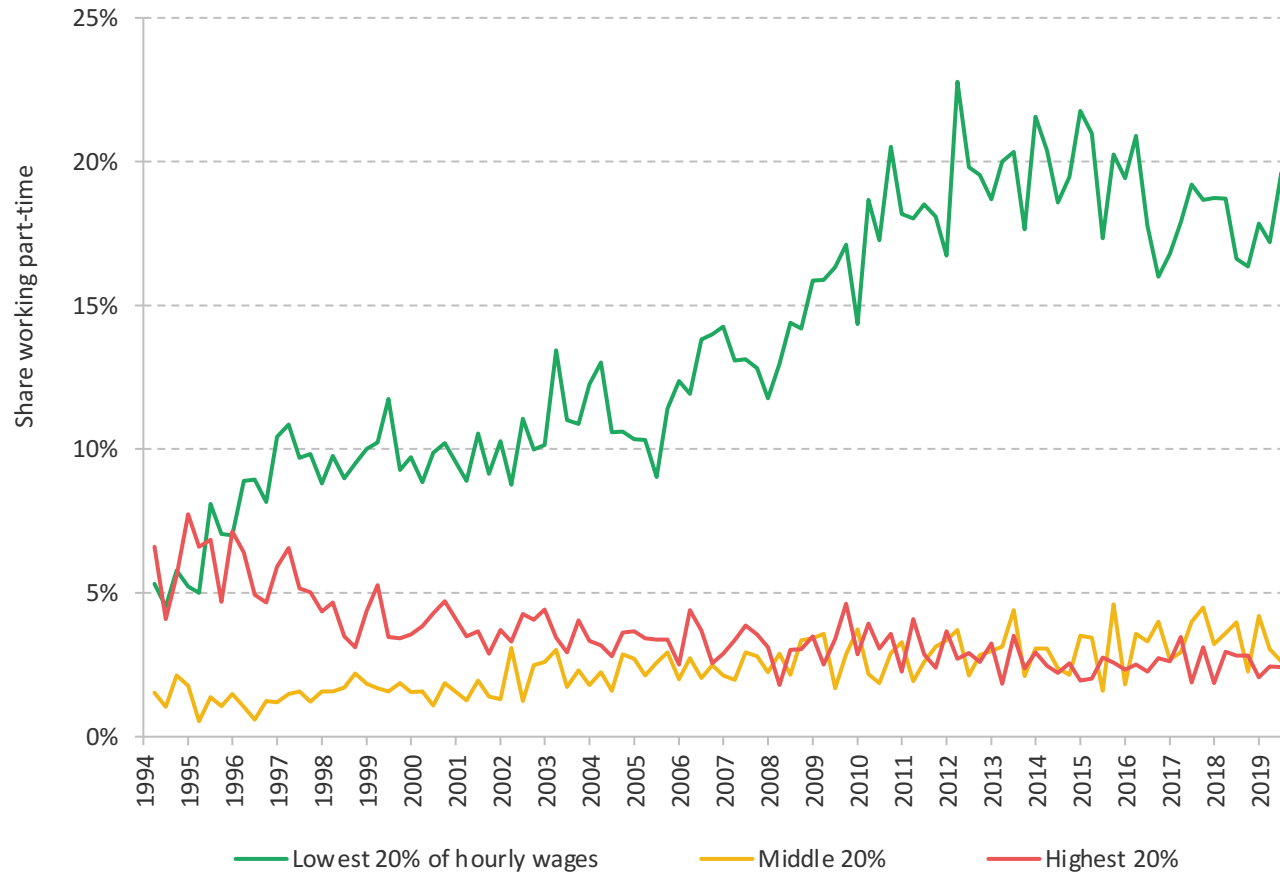
Growth in UK male weekly earnings and hourly wages: 1994/95 – 2016/17



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

Data used is UK FRS 1994-95 and 2016-17, not in full time education and aged <64

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

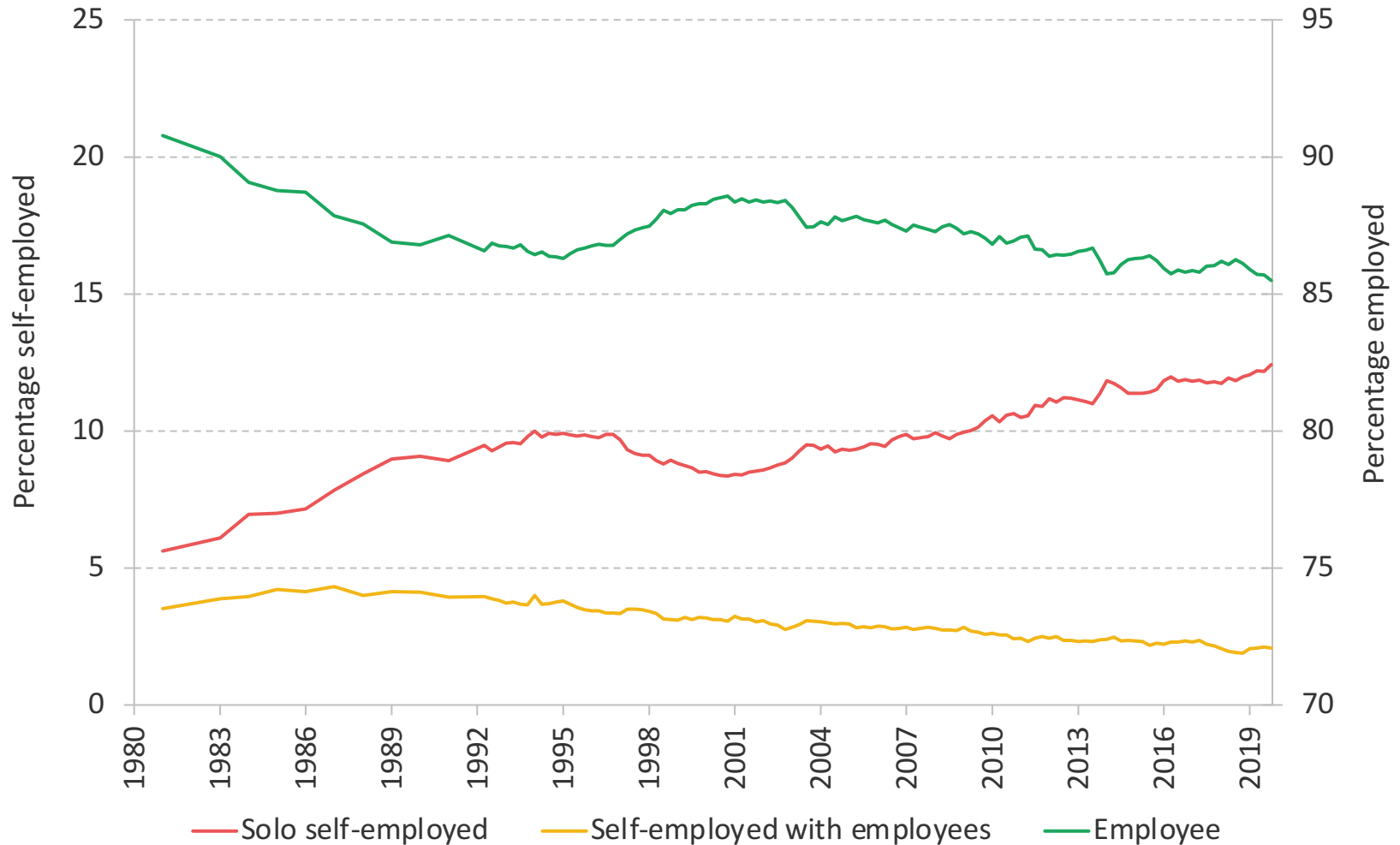


-> Stronger growth of PT work for the self-employed where there has been a growing rate of low earning solo self-employed and part-time hours.

Source: IFS Deaton Review calculations
Notes: LFS; Male employees aged 25-55.

Employment composition in the UK

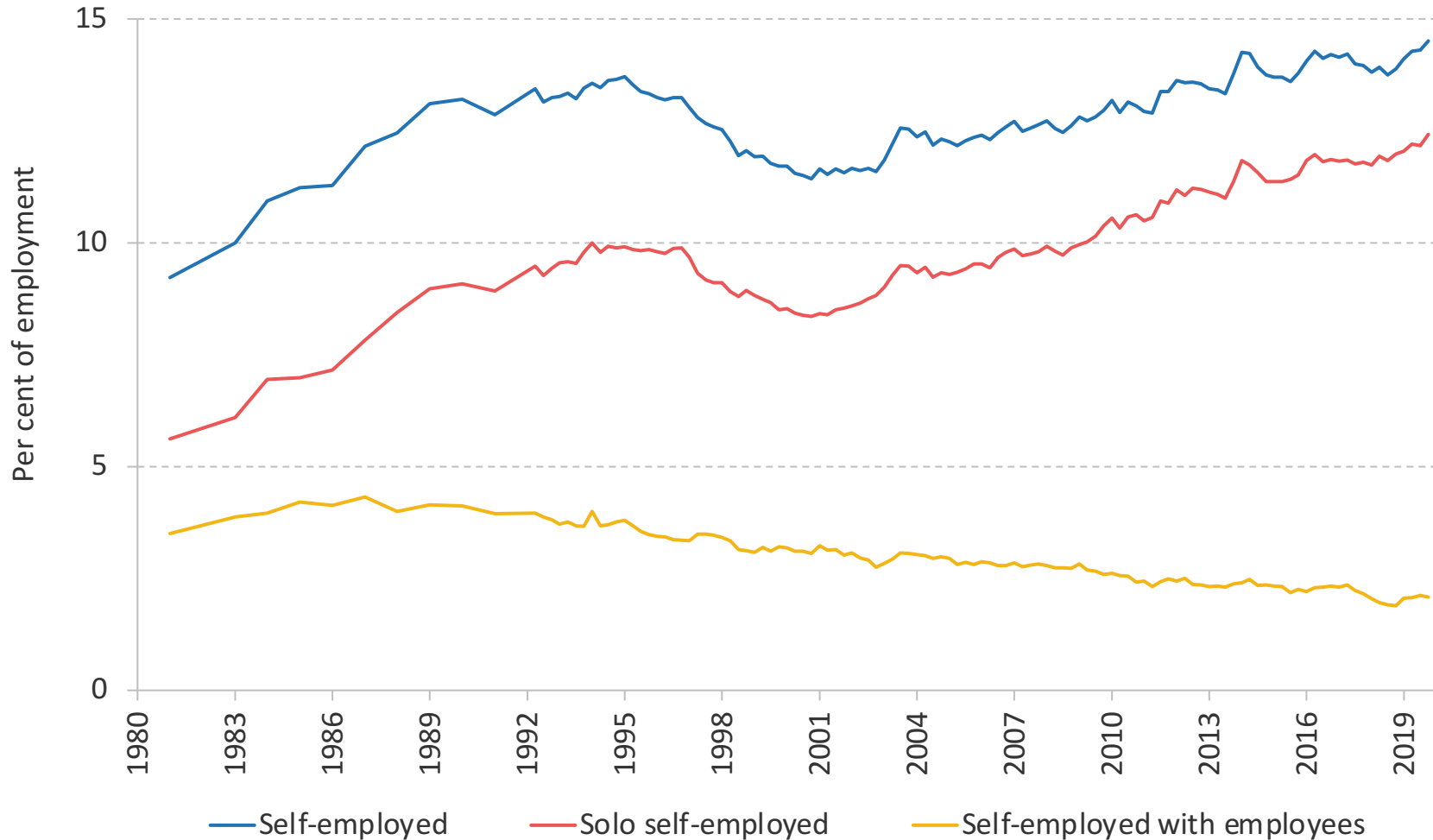
As percent of workforce



Source: LFS; Giupponi and Machin (Deaton Review, IFS, 2022)

Solo self-employment in the UK

As percent of workforce

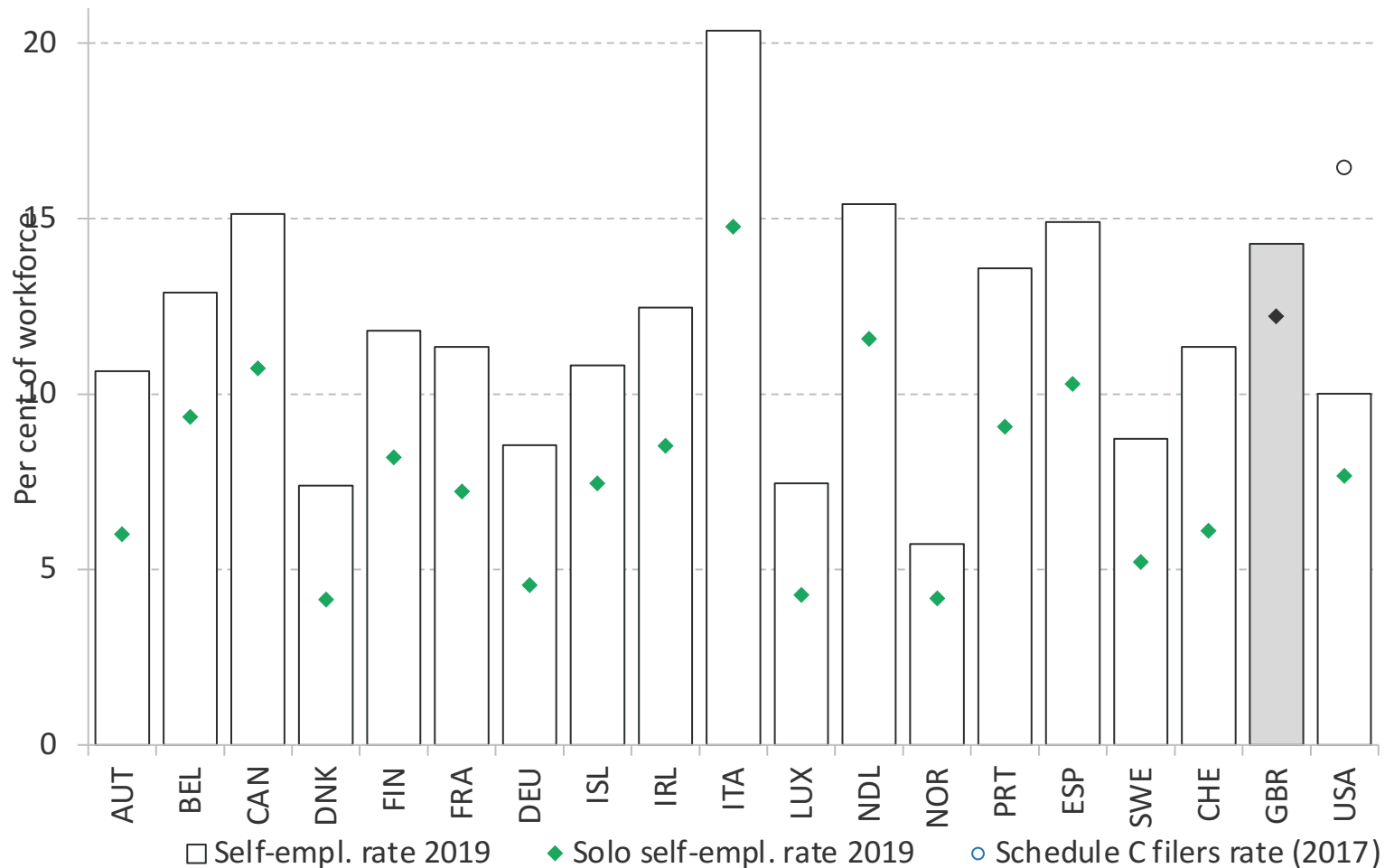


- Not covered by minimum wage, sickness benefits or NI

Source: LFS; Giupponi and Machin (Deaton Review, IFS, 2022)

Self-employment across countries

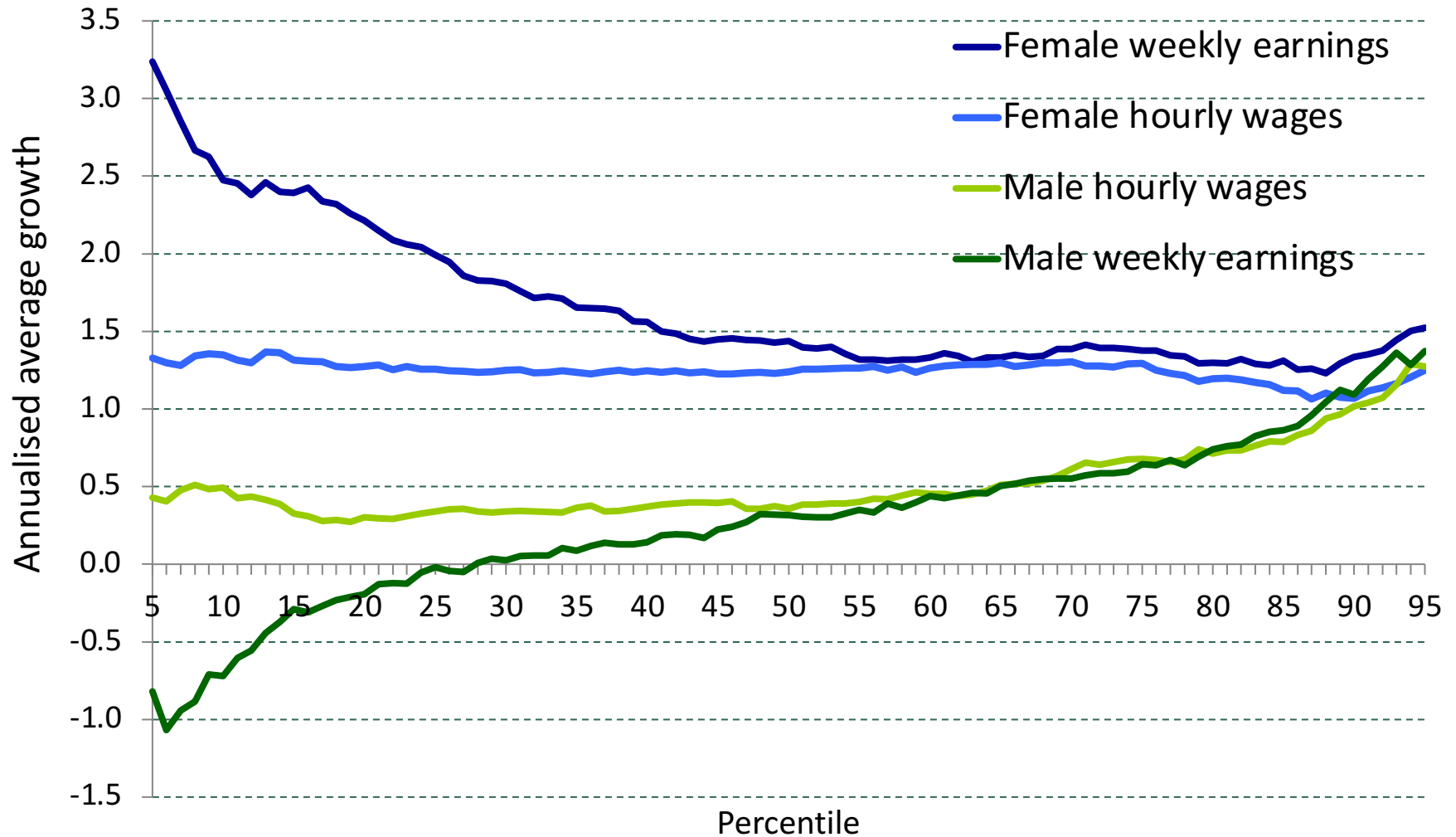
Self-employment as percent of workforce



Source: Giupponi and Machin (Deaton Review, IFS, 2022)

Very different growth in female hourly wages and weekly earnings:

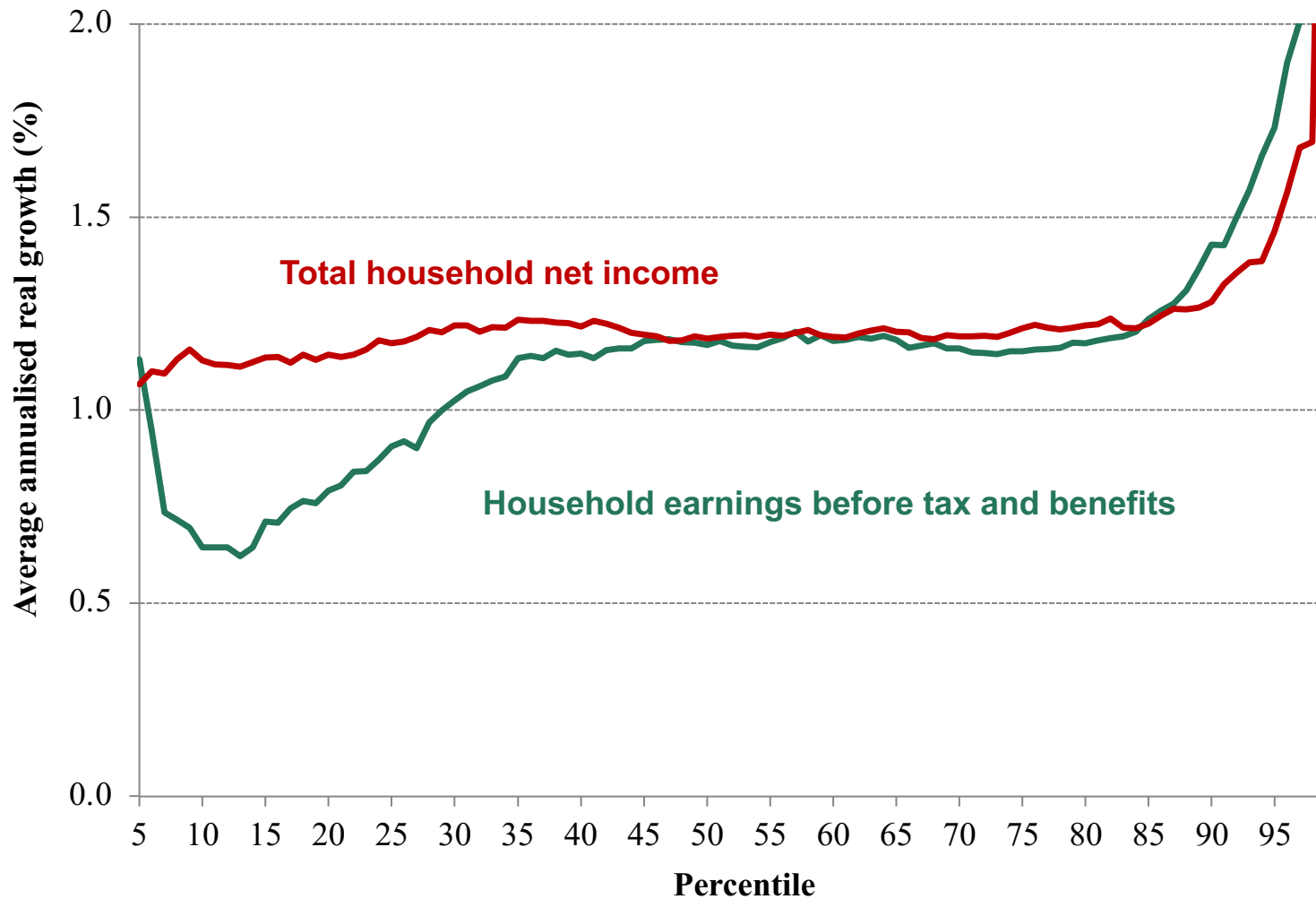
UK 1994/95 – 2016/17



-> But assortative partnering and low female earnings share implies this has not improved between family earnings inequality.... similar for US

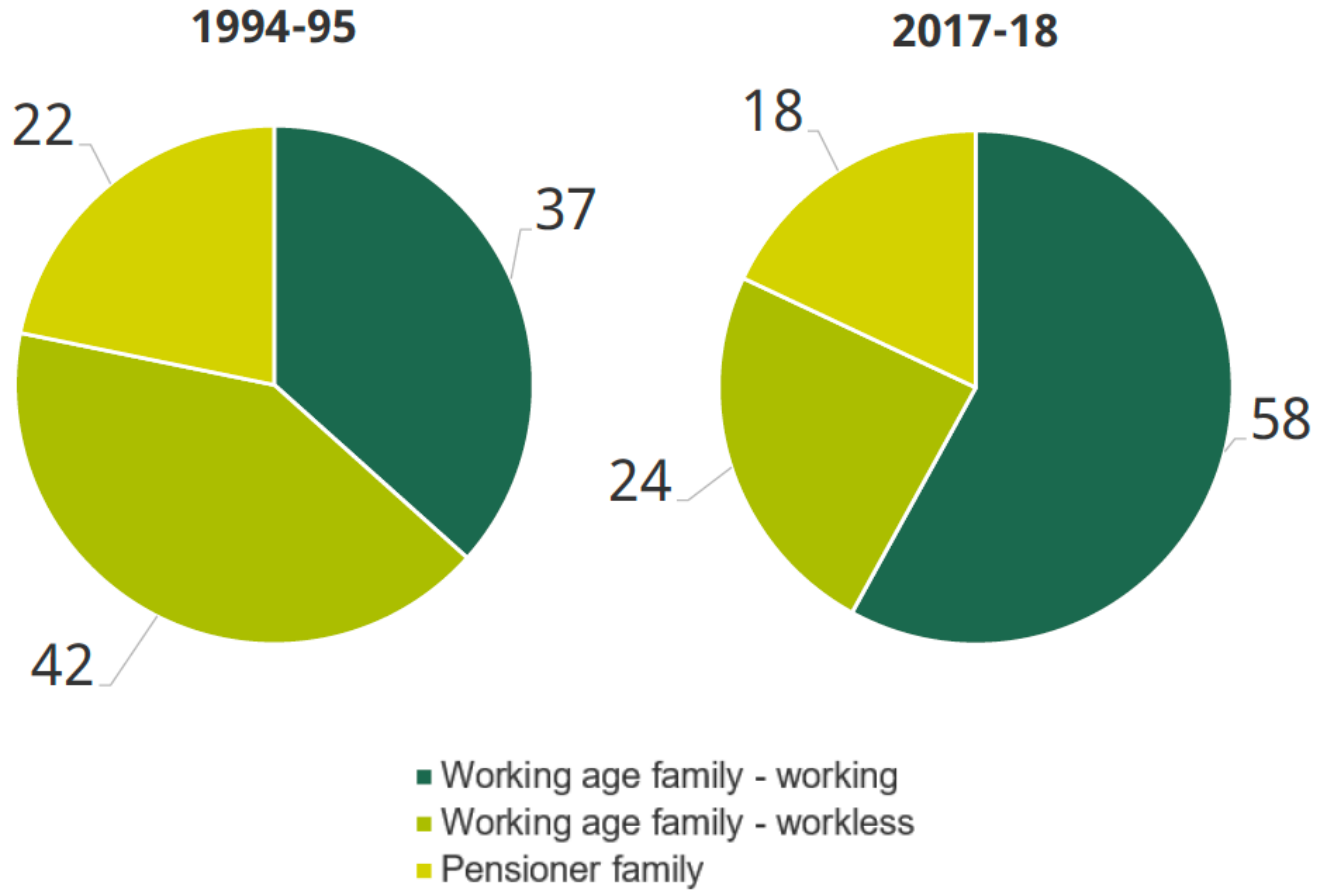
Source: Blundell, Joyce, Norris Keiller and Ziliak (2018): Data used is FRS 1994-95 and 2016-17.

Annual growth in household gross earnings and net income, by percentile, 1994–95 to 2019–20.



Source: IFS Deaton Review (2022)

% of those in poverty by work and family type

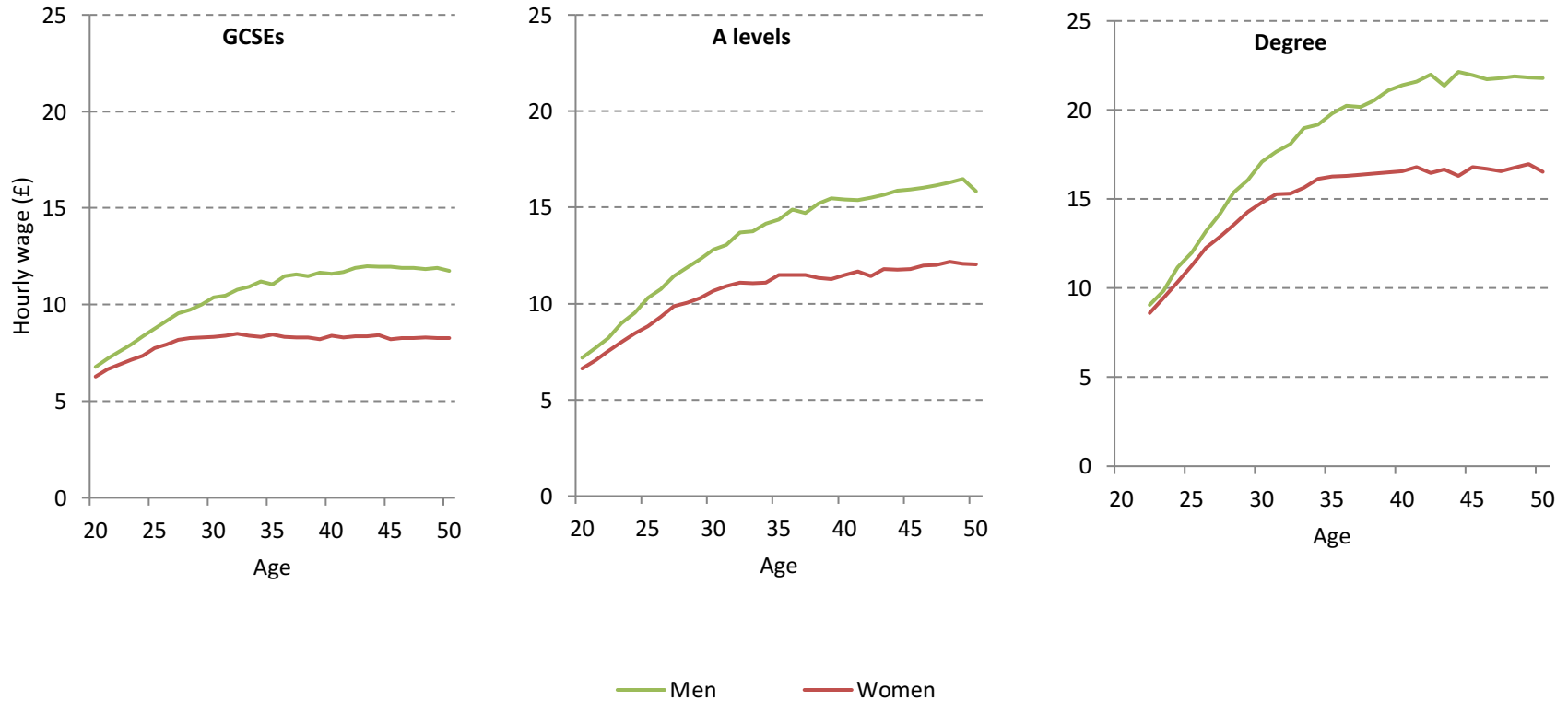


Source: IFS Deaton Review calculations for the UK.

Focus on three interrelated issues for labour market inequality

- Wage progression over the working life is the common theme.
- It is a key part of the story about labour market inequality, concerns about it and what to do about it,
 1. the role of education, labour market attachment/part-time work,
 2. the role of human capital investments during working life,
 3. the role of skills and firms.
- updating our recent work on wage progression in UK, exploiting household data and employer-employee matched data,
- bring this analysis together with the tax and welfare-benefit system to think through an appropriate policy mix,
- policies toward wage progression and effective human capital investments for the lower educated even more urgent for the post-covid labour market.

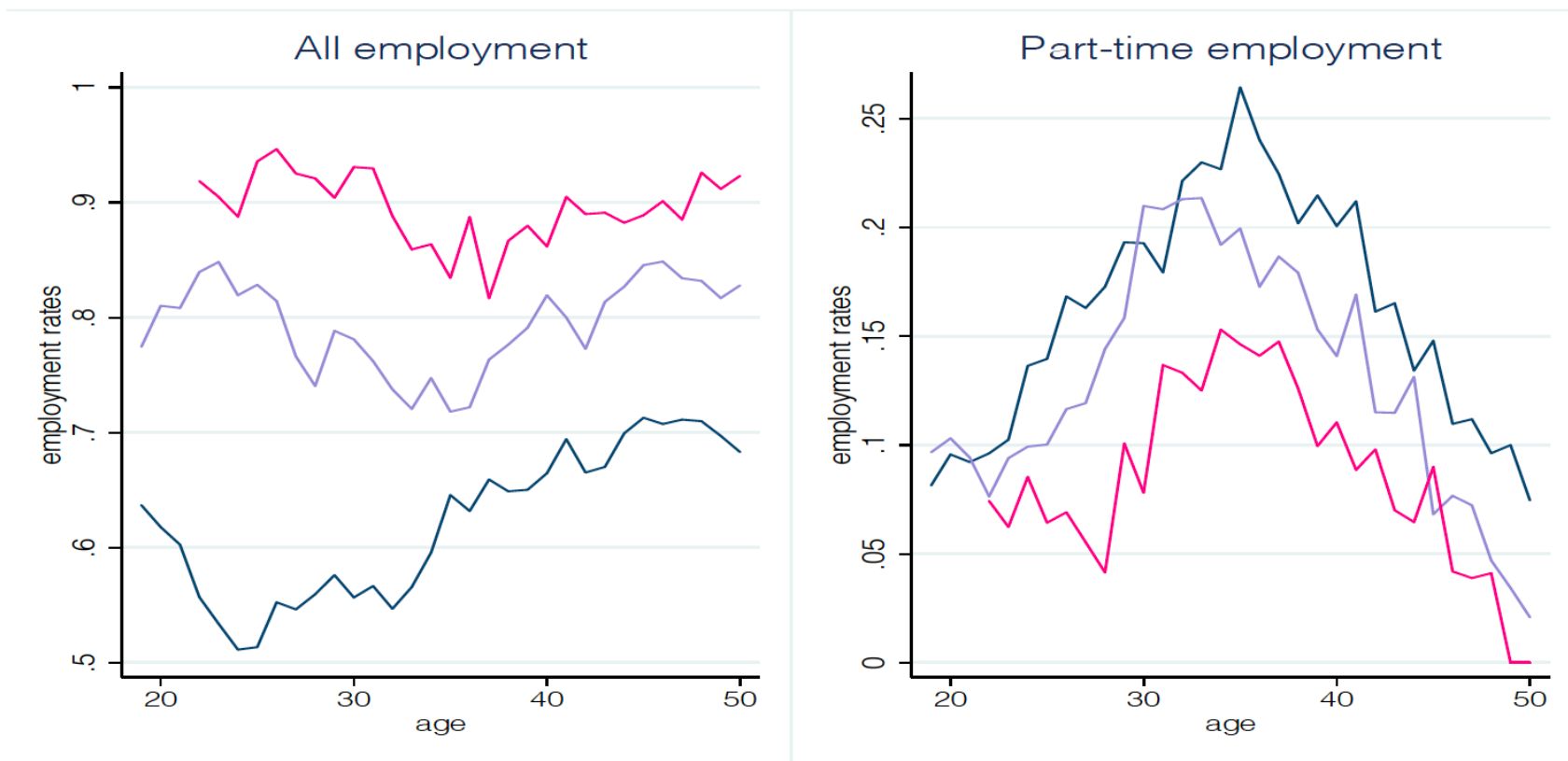
1. Wage progression is a key component of life-cycle earnings inequality and differences between men and women...



Note: Hourly wages are deflated using the Consumer Prices Index (CPI) and are expressed in January 2016 prices. Individuals in the bottom two and top one percentiles of the gender- and year-specific hourly wage distributions are excluded.

Source: IFS Deaton Review. Labour Force Survey (LFS), 1993Q1–2018Q4.

Female employment and part-time work by education

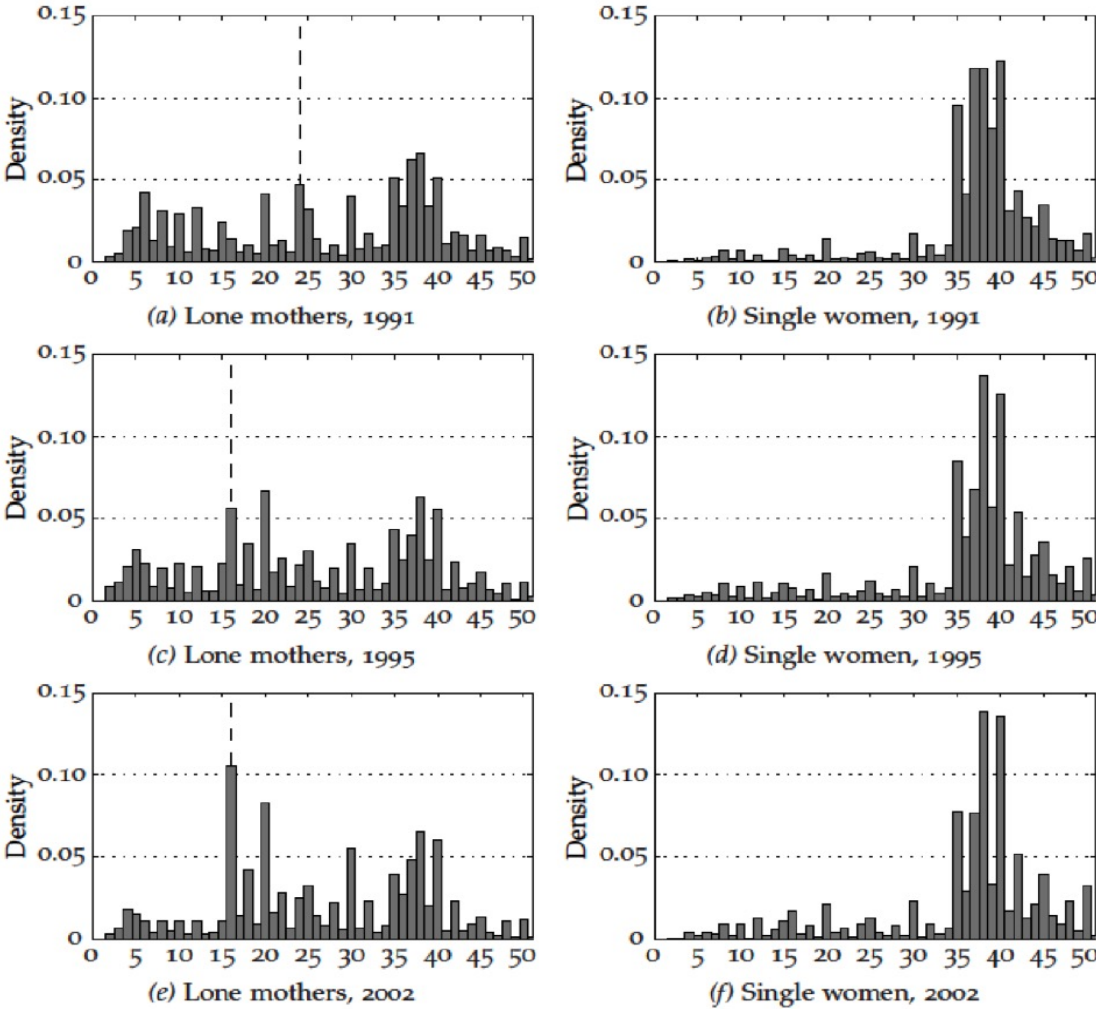


---- secondary - - - - high school - - - - university

Source: Blundell, Costa-Dias, Meghir and Shaw (2016), updated USoc/UK HLS

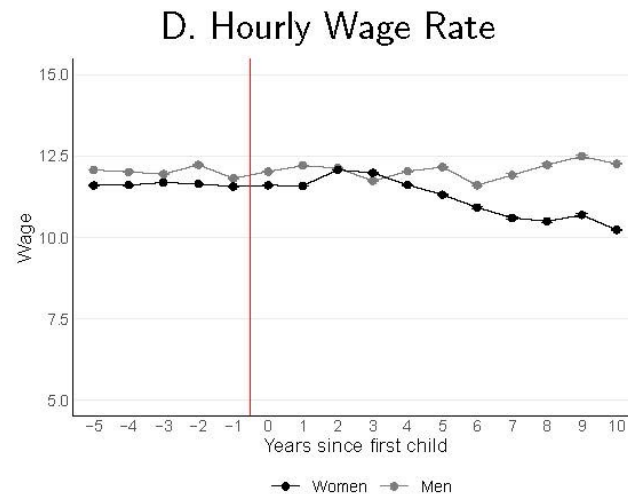
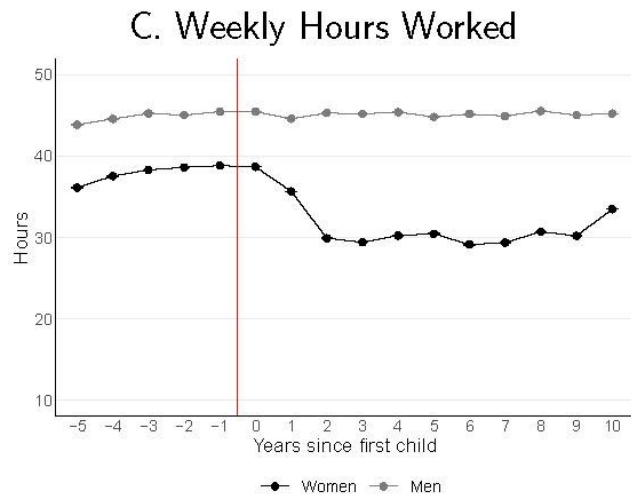
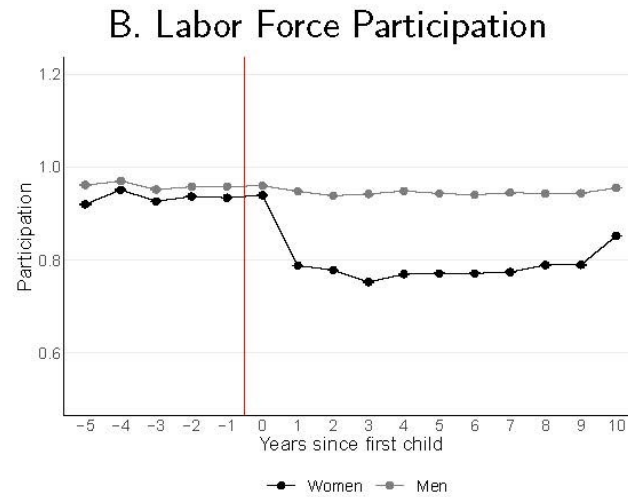
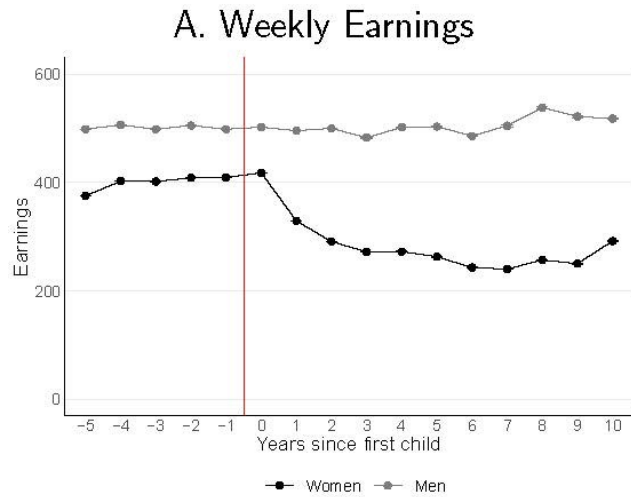
Notes: Plots are for all women. Note too the growth of part-time work for lower educated men.

Single Women, lower educated (aged 18-45): Bunching at WFTC Kinks



Source: Blundell and Shephard (2014)

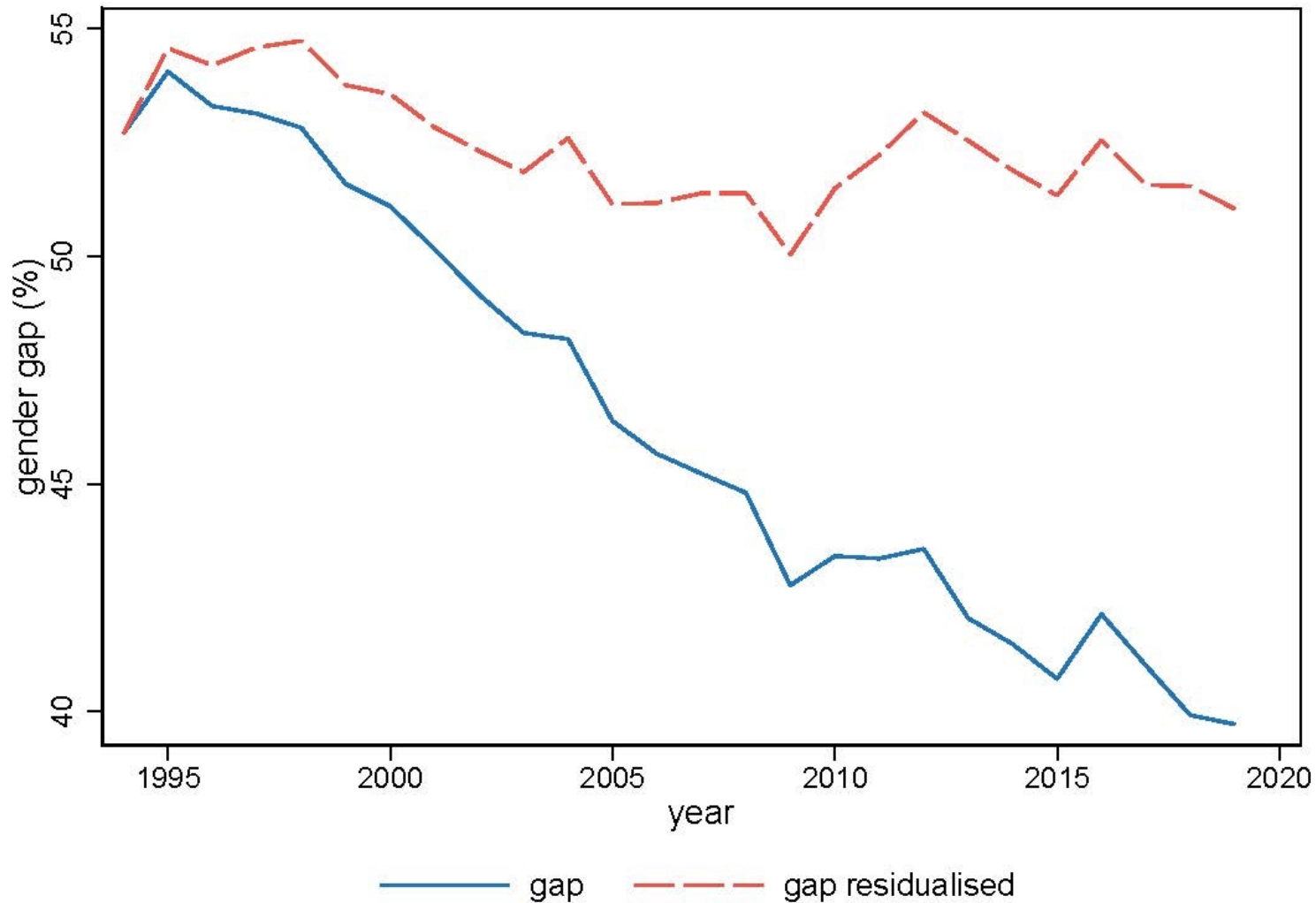
Arrival of children is the key event behind the opening of the gender gaps in labour market outcomes



Note: All panels control for age and year fixed effects. Hours worked in panel C are conditional on participation.

Source: USoc/UKHLS data 1991–2017.

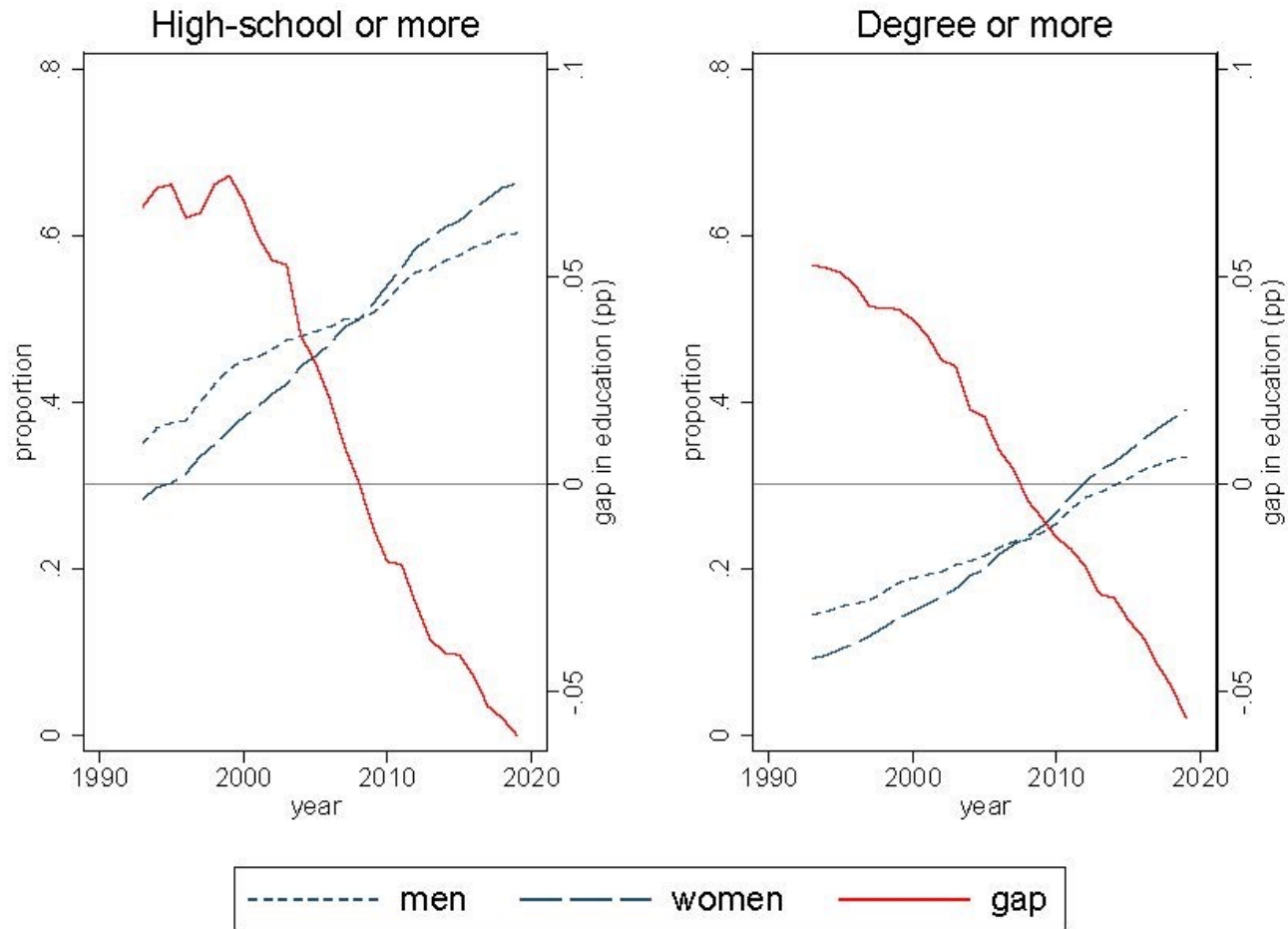
Gender gap in pre-tax earnings: controlling for education



Note: Gender pay gaps as a percentage of men's earnings. Residualised gap calculated keeping the gender-specific distribution of education fixed over the entire period and normalised to equal the raw gap in 1994.

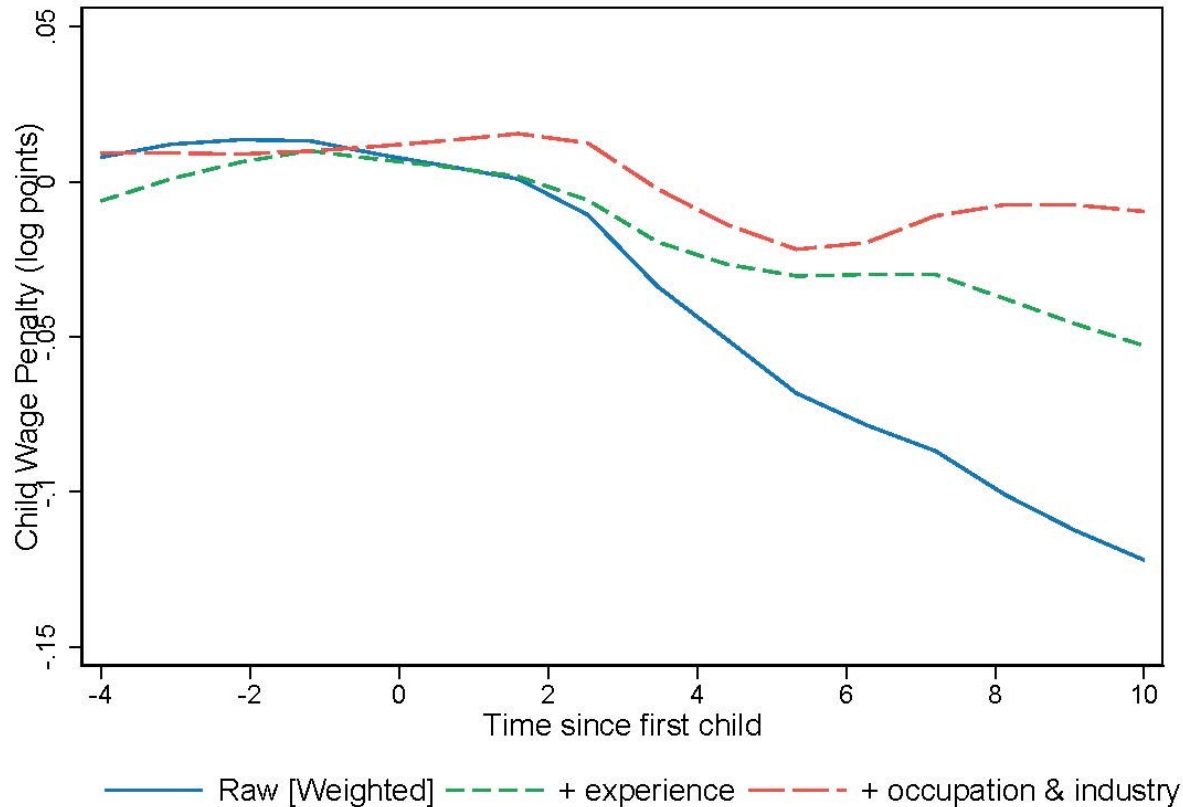
Source: LFS data 1994–2019, men and women aged 20–55 and not retired, long-term sick or in full-time education.

Gender gap in completed education



Source: LFS data 1994–2019, men and women aged 20–55 and not retired, long-term sick or in full-time education.

Impacts of missed working experience and differential sorting to occupations, industries and sectors on the gender wage gap among parents by time to / since birth of first child



Note: Graph shows raw gap (blue solid line), gap net of differences in part-time and full-time experience (green short-dashed line) and gap additionally net of differences in sorting to occupations at four-digit SOC code, industries at two-digit SIC code and private/public sector (red long-dashed line). All gaps are obtained when fathers' wages are reweighted according to the participation probabilities of mothers by rank in pre-birth wages.

Source: USoc/UKHLS data 1991–2017, mothers and fathers observed before and after the birth of their first child and who were working prior to that first birth.

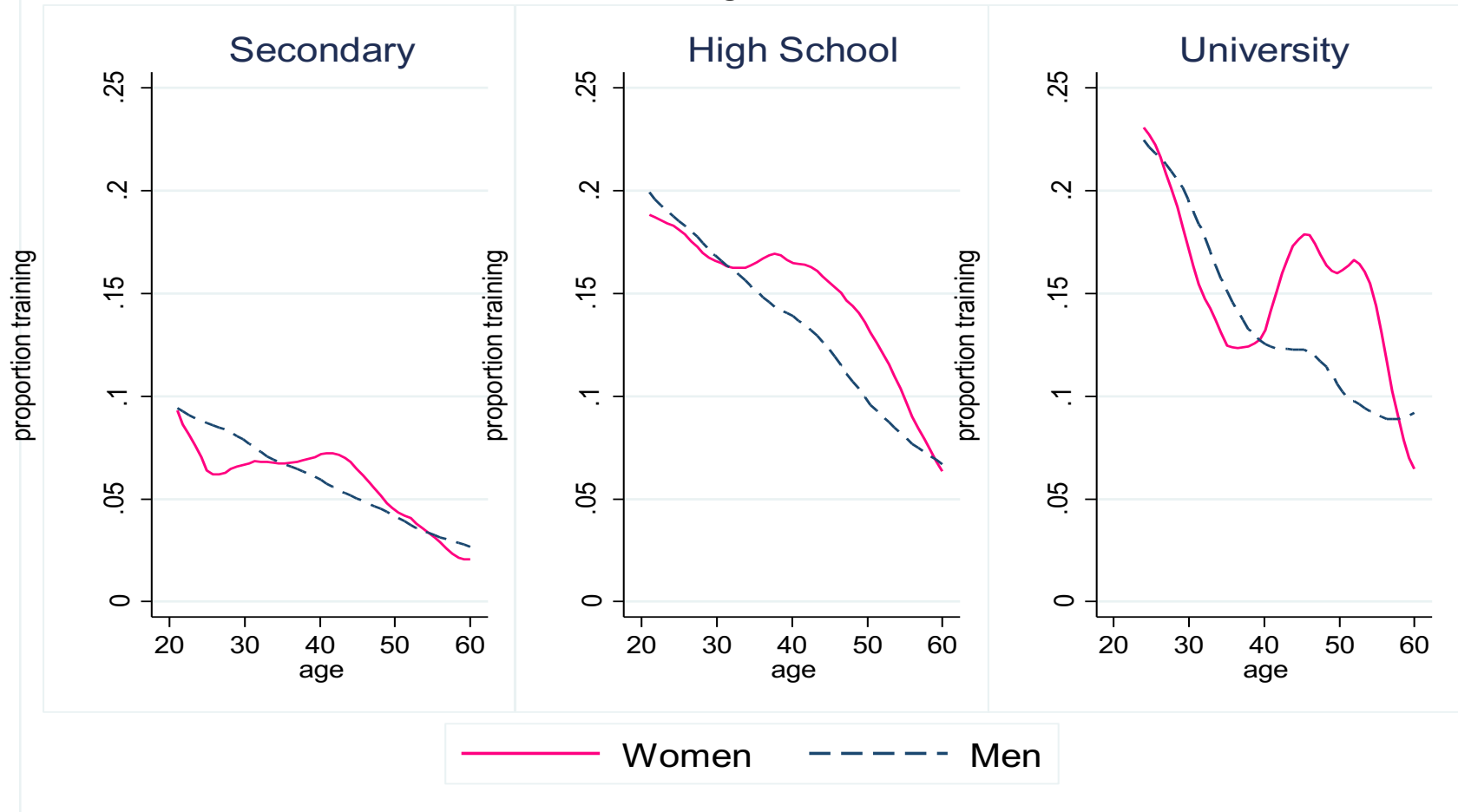
Wage progression and experience results: summary

- Returns to work experience show strong complementarity with education
 - much lower returns to work experience for lower educated and also for part-time work,
 - employment is not (any longer) a route out of low earnings.
- Implications for welfare-benefit reform,
 - importance of low returns to experience for the low educated and the adverse impact of part-time work, limit the effectiveness of the UK (earned income) tax-credits.
 - little incentive for active investment in progression by workers or firms.
- What about the role of on-the-job training?
 - training vs learning by doing.

2. Training also appears complementary with education

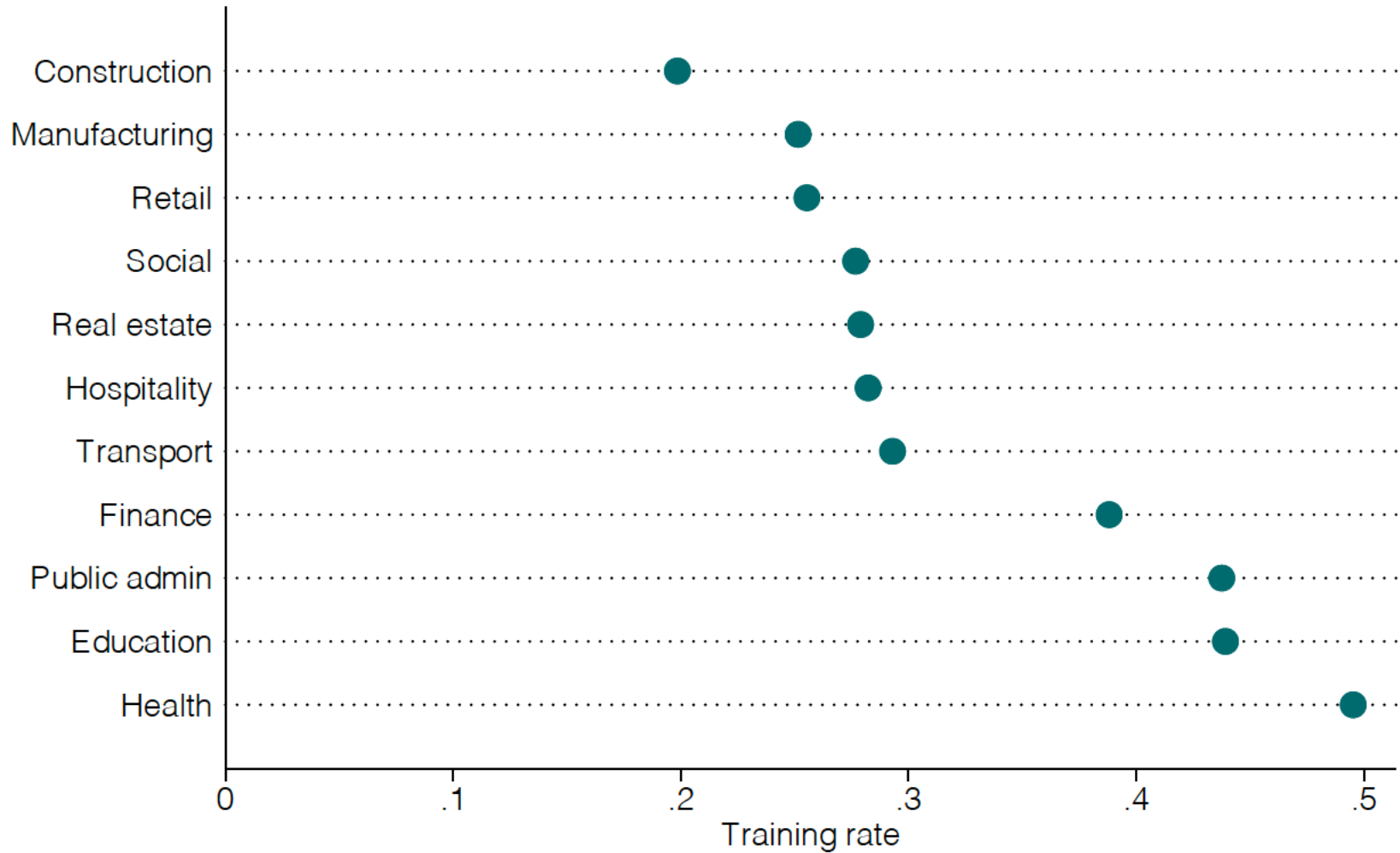
Prevalence of training over past year

All training, 50+ hours



Source: Blundell, Costa-Dias, Goll and Meghir (2021), Notes: USoc/UK HLS

Training intensity by industry



Source: LFS data, IFS calculations.

Wage progression and training: results summary

- Particularly strong effects for 'middle' education, below University, group
 - with return equivalent to that in formal education,
 - training can partially offset human capital depreciation from lost work experience and (partially) reverse the gender wage gap,
 - firm-based qualification training is key. Relate to work on Norwegian 'second chance' adult training reform for low educated.
- Policy implications
 - a subsidy for firm-based qualification training can be integrated with an earned income tax credit for parents and provide an incentive for progression.

3. Wage progression and firms

Dig deeper into why some lower education workers do well.

- Matched worker-firm data for the UK
 - LFS data on occupations and education: matched at 4-digit level to O*Net,
 - European Working Conditions Survey (EWCS): ‘good jobs’ questions.
 - Annual Survey of Hours and Earning (ASHE): panel data, collected from firms based on tax records, matched to CENSUS 2011.
 - Annual Respondents Database (ARD): census of data on firm structure, location and employment,
 - Business Enterprise Research and Development (BERD): R&D expenditure,
- Find that lower-educated workers in occupations that require ‘soft-skills’
 - report positively to ‘good jobs’ question in EWCS,
 - experience *higher wage progression*,
 - they are *more likely to receive training*,
 - progression is stronger in firms with a *large share of high-skilled workers and in more innovative firms*.

Proxies for importance of 'soft skills'

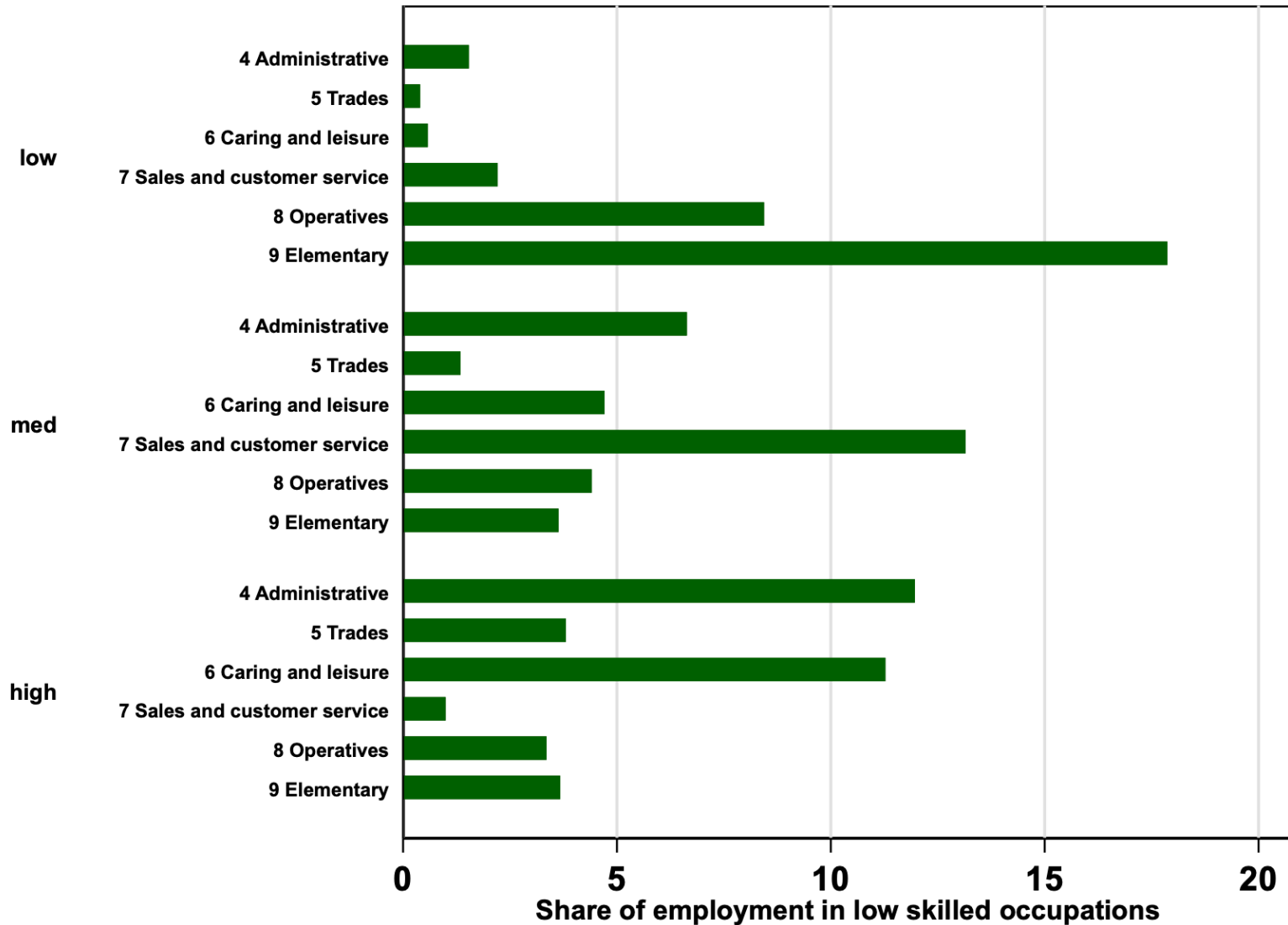
How important is ... to the performance of your current job?

- **Work With Work Group or Team:** the importance of working with others in a team.
- **Problem Sensitivity:** The ability to tell something is wrong or is likely to go wrong.
- **Active Listening:** Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate.
- **Social Perceptiveness:** Being aware of others' reactions and understanding them
- **Coordination:** Adjusting actions in relation to others' actions.
- **Responsibility for Outcomes and Results:** responsibility for results of other workers.
- **Impact of Decisions on Co-workers or Company Results:** results of your decisions usually have on other people or the reputation of employer.

Focusing on the lower-educated (RQF 4-digit match), we use 10 task measures to create (PCA) a single index ' λ ' of the importance of 'soft skills'.

- normalize to lie between 0 and 1 and discretize it into three categories according to where it lies in the overall distribution of low formal educational workers in the UK. High values are those in the top tercile of soft skills.
- Show this measure is strongly correlated with the EWCS questions on what lower educated workers define as a 'good job' offering career progression.

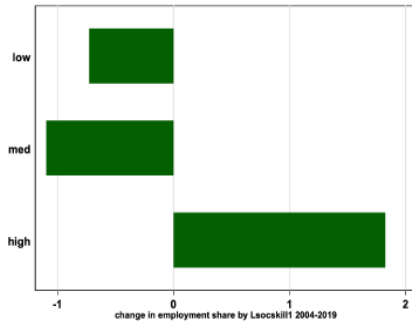
Share of workers in occupations that have no formal education requirements, by lambda and occupation, 2019



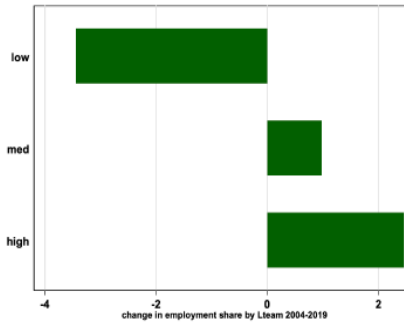
Note: Shares are of workers in occupations that have no formal education requirements in Annual Population Survey, available here <https://www.nomisweb.co.uk/datasets/apsnew>; accessed 9 November 2022.

Change in employment shares for workers in occupations that have no formal educational requirements by soft skills, 2004-2019

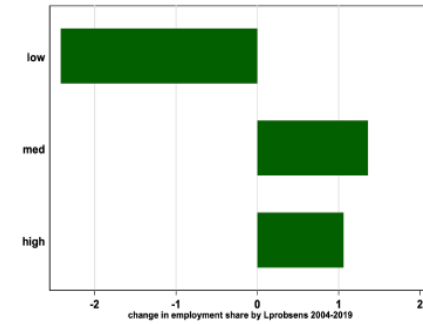
(a) Social Skills



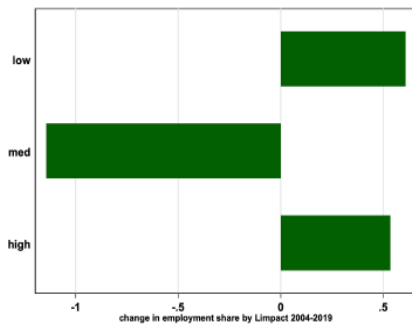
(b) Team Work



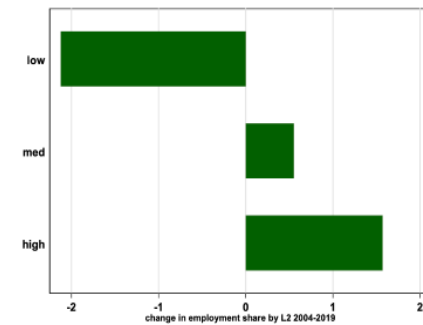
(c) Problem sensitivity



(d) Impact



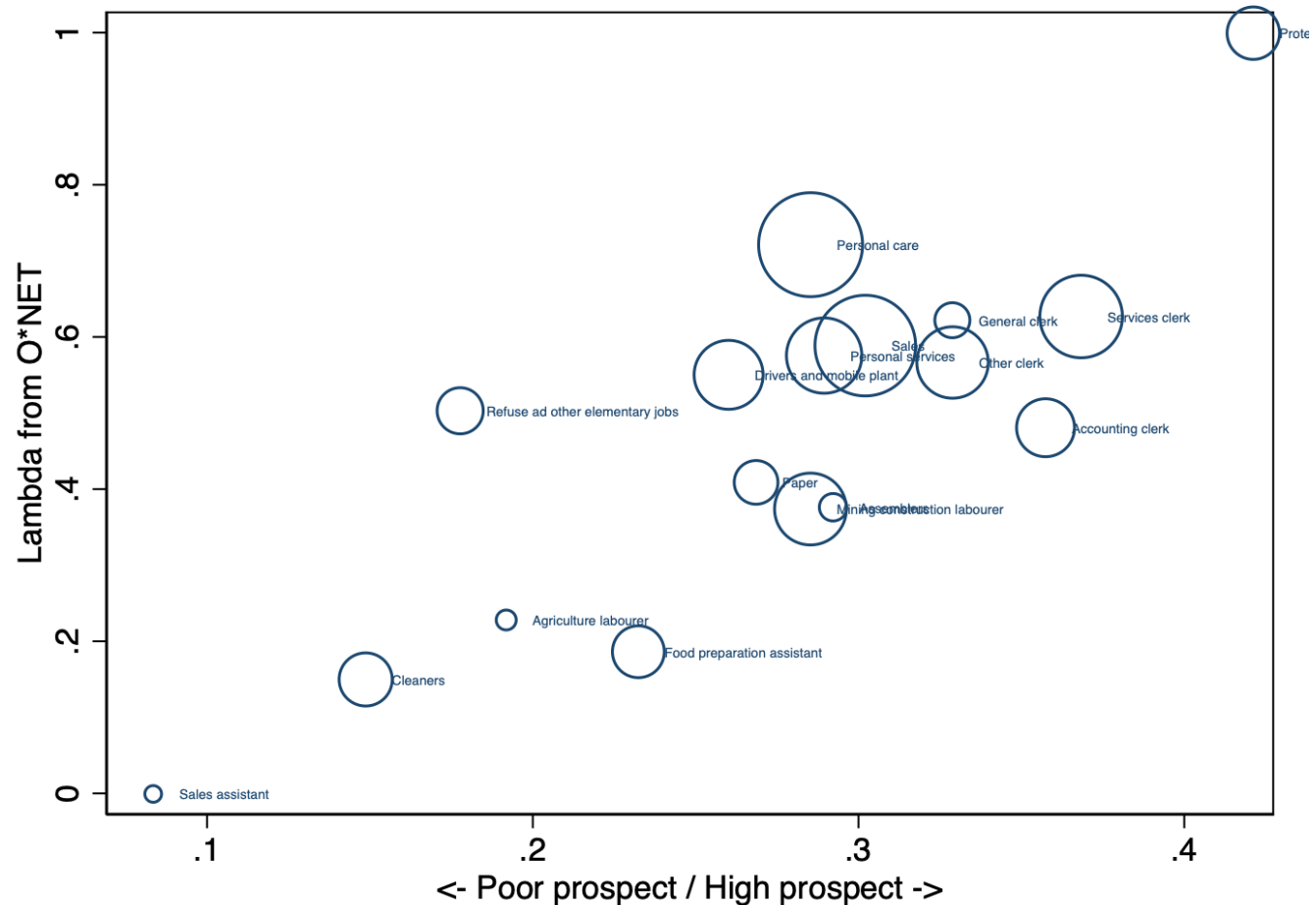
(e) Overall measure λ



Note: Shares are of workers in occupations that have no formal education requirements in Annual Population Survey, available here <https://www.nomisweb.co.uk/datasets/apsnew>; accessed 9 November 2022.

Does λ identify “good jobs”?

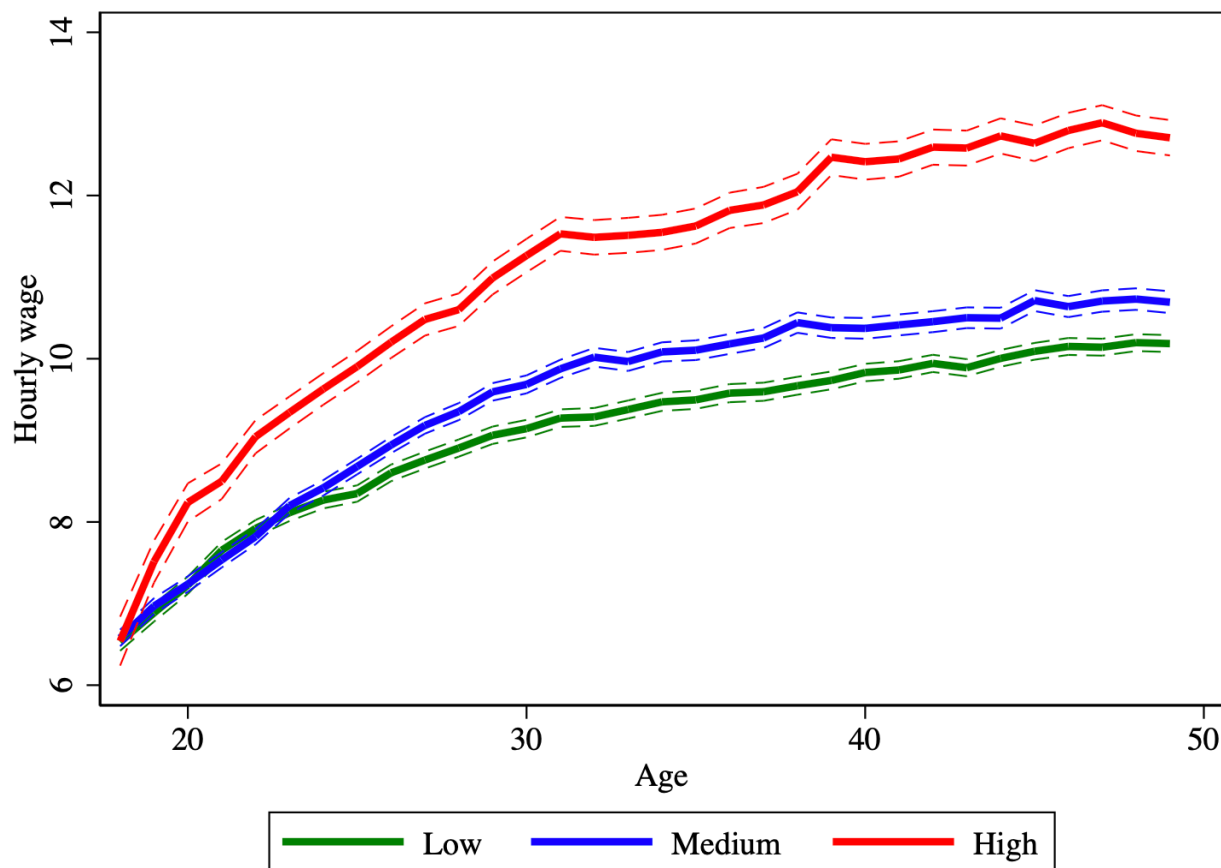
EWCS: ‘My job offers good prospects for career advancement’, low-educated



Notes: Authors' calculations using EWCS, 2015. Each dot is a 2-digit occupation, scaled by UK employment.
Source: Aghion, Bergeaud, Blundell and Griffith (2022)

Wage progression for workers according to soft skill intensity λ

Lower-educated men



Notes: Data from Annual Survey of Hours and Employment (ASHE) 2004-2019. Figure shows average hourly wage at each age for male workers in private sector firms in occupations with low-educational requirements categorised by the measure of the importance of soft-skills (Regulatory Qualification Framework, RQF). λ index split in three equal bins.

Source: Aghion, Bergeaud, Blundell and Griffith (2022)

Firms, wage progression and good jobs: summary

- Some lower educated workers experience higher wage progression
 - we find this (partly) reflects the value of ‘soft skills’,
 - these workers see more training and longer tenures,
 - with higher progression in more innovative firms and firms with a larger share of higher educated,
 - also find workers in soft skill occupations are less likely to be out-sourced, look at *cleaners* as a case study.
- Cognitive and other skills matter too but ‘soft skills’ remain an important dimension for lower educated workers,
 - note the ‘Soft skills’ impact on wage progression appears larger for women.

Overview: Some take-aways ...

Little overall earnings progression for lower educated workers

- employment alone is (increasingly) not enough to escape poverty and low earnings,
- find diverging wage profiles by education and by part-time work,
- low rates of on-the-job training for lower educated workers,

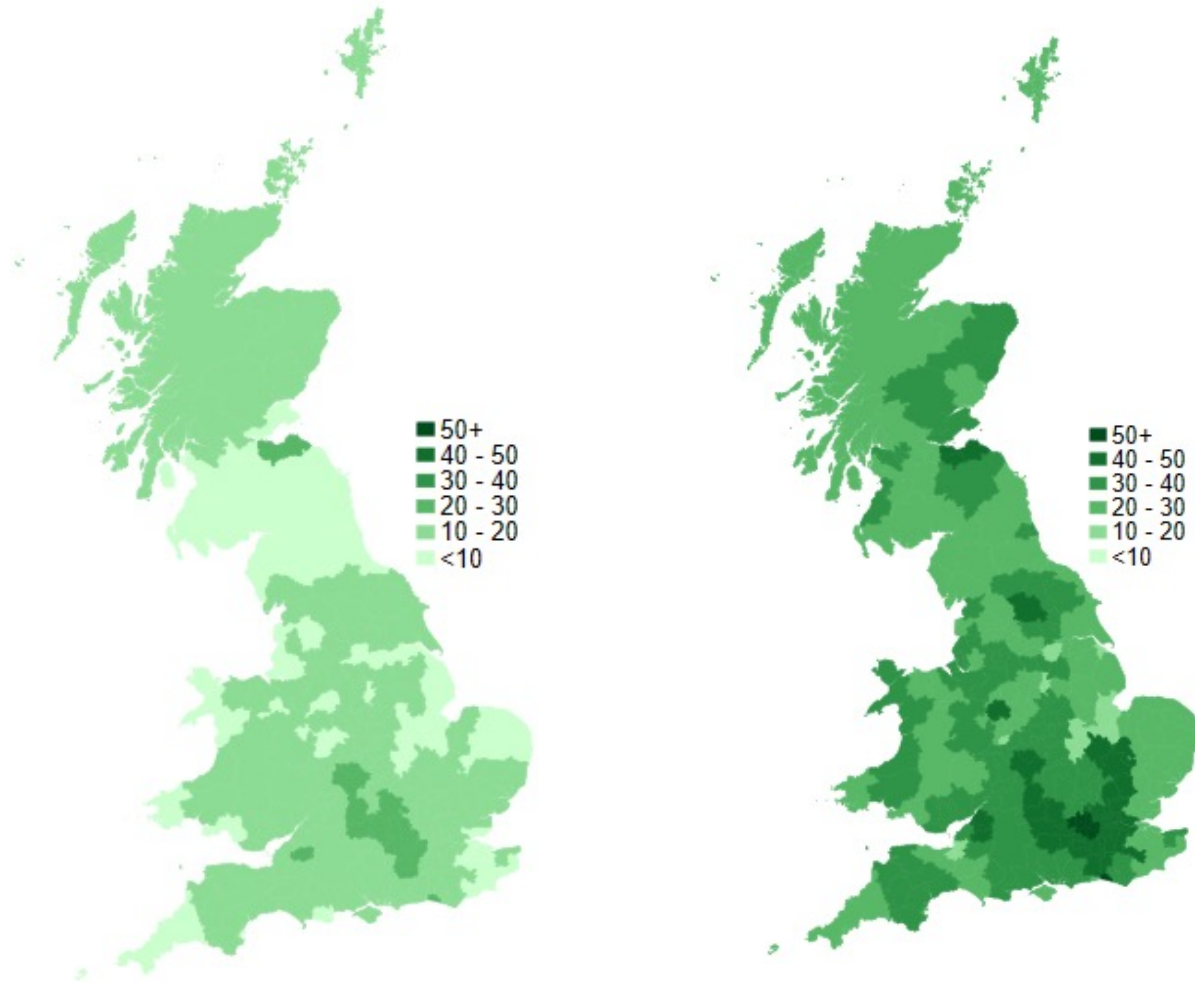
but.....

- find significant returns for firm-based qualification training, and
- low-educated workers with 'soft skills' see improved progression, with more training and longer tenures,
- especially in R&D firms and firms with a large share of higher skilled workers – the challenge of 'left-behind' areas...

The share of graduates has increased everywhere, but spatial disparities remain

1998, %

2019, %

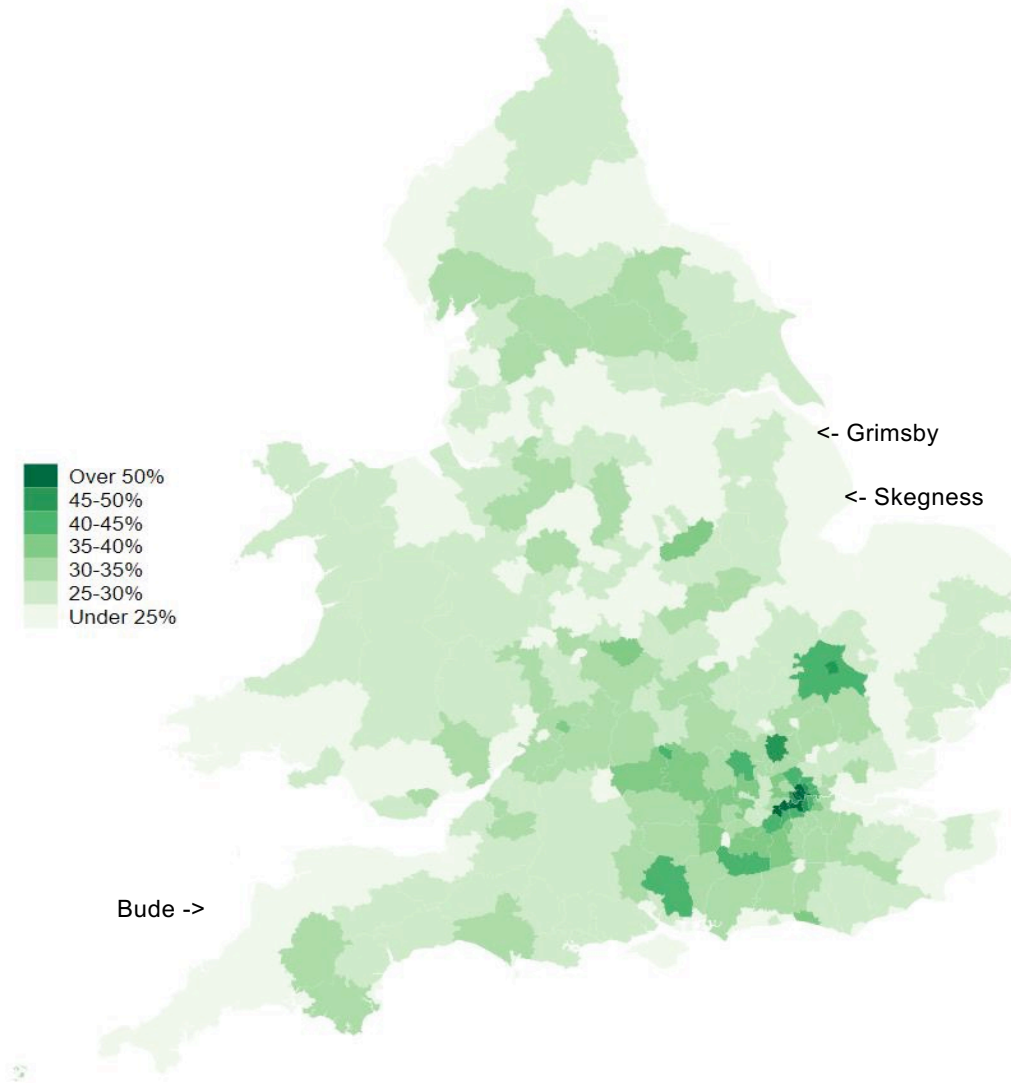


Note: Working age (16-64) population. Excludes those in full-time education. Maps constructed using local-authority approximations of 2011 TTWAs as discussed in the Data Appendix.

Source: APS

Regional disparities in education

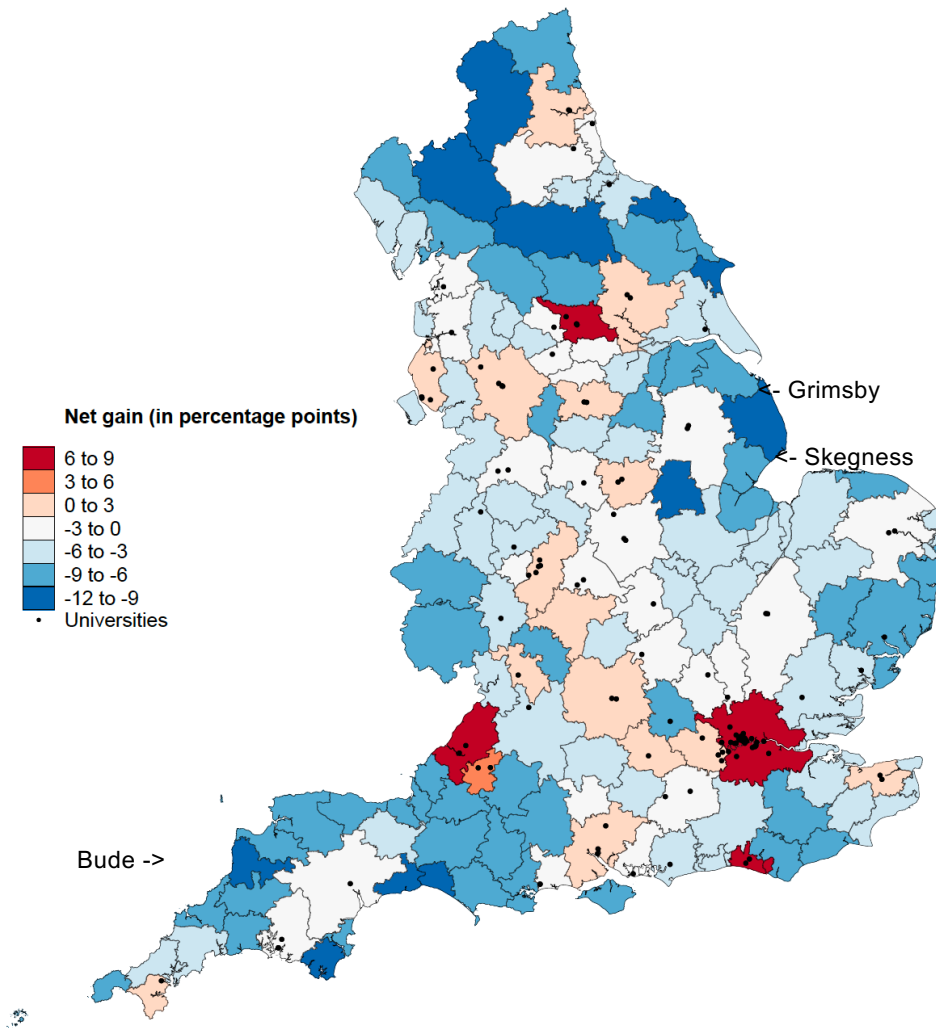
Share of Population (England and Wales) with Post A-level Qualifications



Source: APS; Blundell et al. 2021 (Figure 1).

Regional disparities in education

Change in share of (future) graduates in TTWA, age 16 to age 27



Note: IFS. NPD, LEO Data. Net gain is the percentage point difference between the share of 16-year-olds from the area who went on to be graduates and the share of 27-year-olds who live in the area who are graduates. Black dots signify universities.

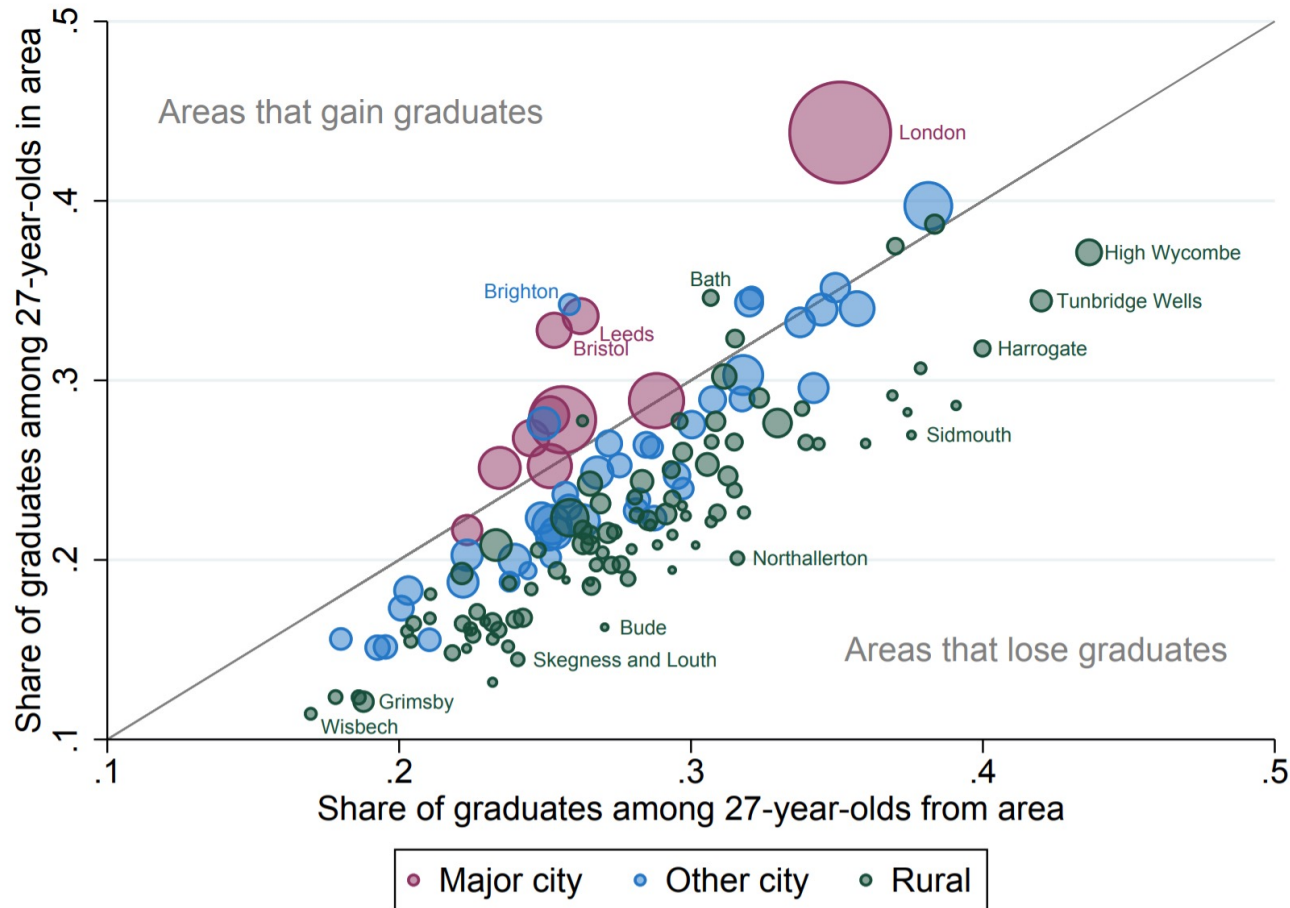
Educational flight: regional disparities in education and social mobility

Share from TTWA v. share living in TTWA at age 27

	Share of pupils who get degrees	Share of adults who have degrees (in same cohorts)	Net loss (as share of base)
Bridlington	23%	13%	43%
Skegness and Louth	24%	14%	40%
Bude	27%	16%	40%
Northallerton	32%	20%	36%
Spalding	24%	15%	36%
Grimsby	19%	12%	36%
Bridport	29%	19%	34%
Clacton	19%	12%	34%
Boston	23%	16%	33%
Wisbech	17%	11%	33%

Source: Overman and Xu (Deaton Review, IFS, 2022)

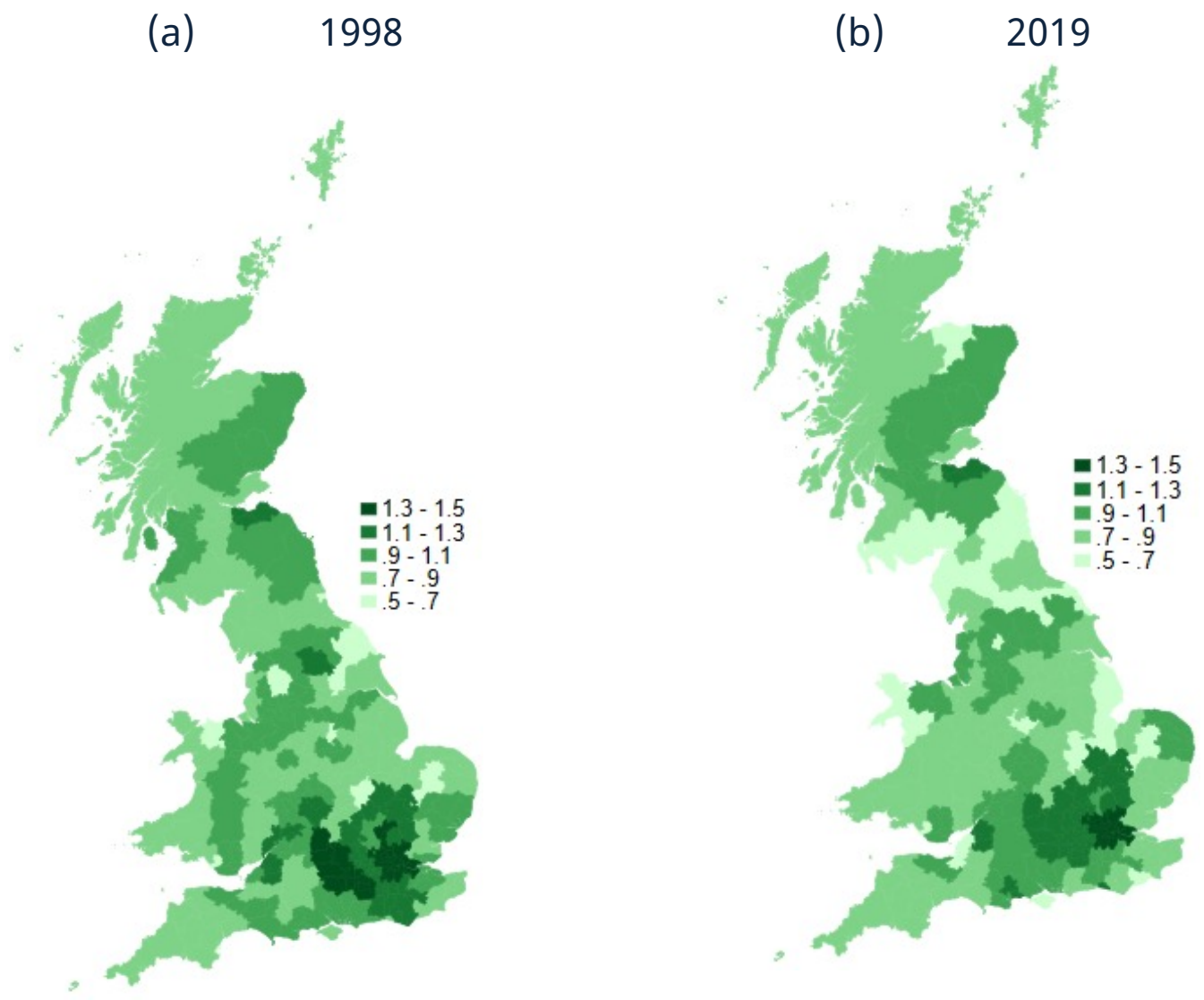
The selective migration of graduates as illustrated by the share of graduates by area of origin v. area of residence, 2013-2016



Note: Restricted to 2002-2005 GCSE cohorts in England. Shows outcomes at age 27. Cities correspond to 'Primary Urban Areas' under the Centre for Cities definition. Major cities refer to the 10 largest cities. Areas refer to 2011 TTWAs, not LA-based groups of TTWAs as in the rest of the chapter.

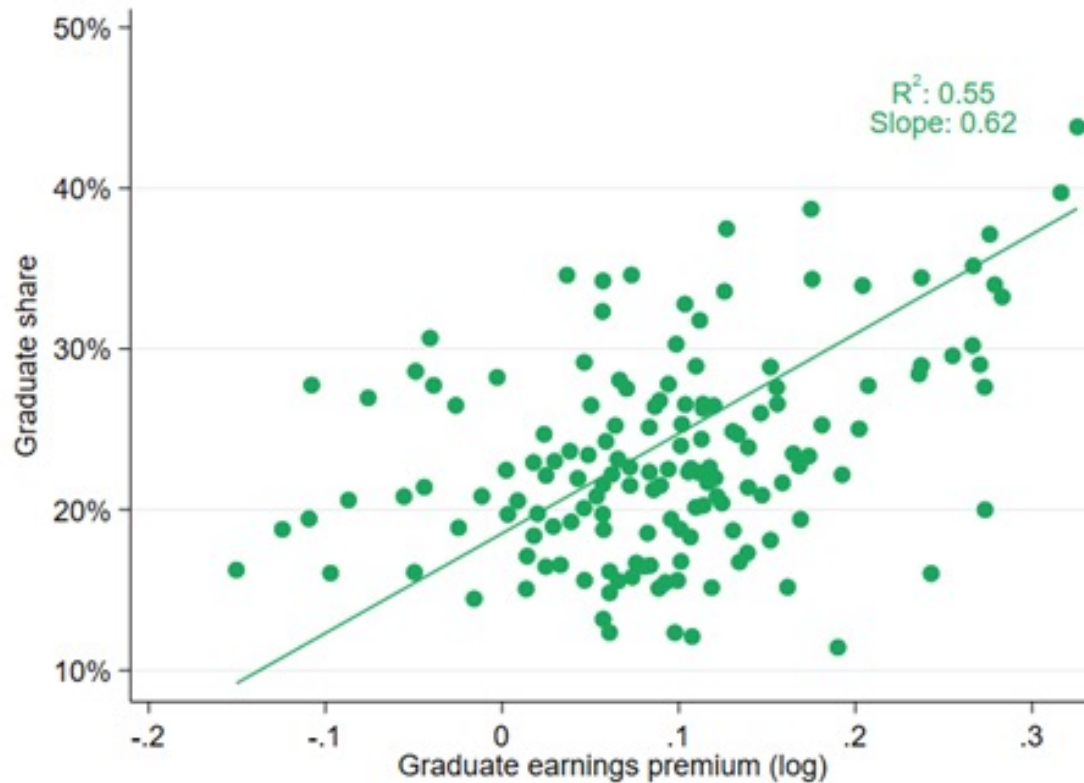
Source: Overman and Xu (Deaton Review, IFS, 2022)

High-skilled jobs have become more spatially concentrated between 1998 and 2019



Notes: LFS. Working age (16-64) population. High-skilled jobs based on classification in Aghion, Blundell, and Griffith (2019).

Graduate shares and graduate premiums are positively correlated

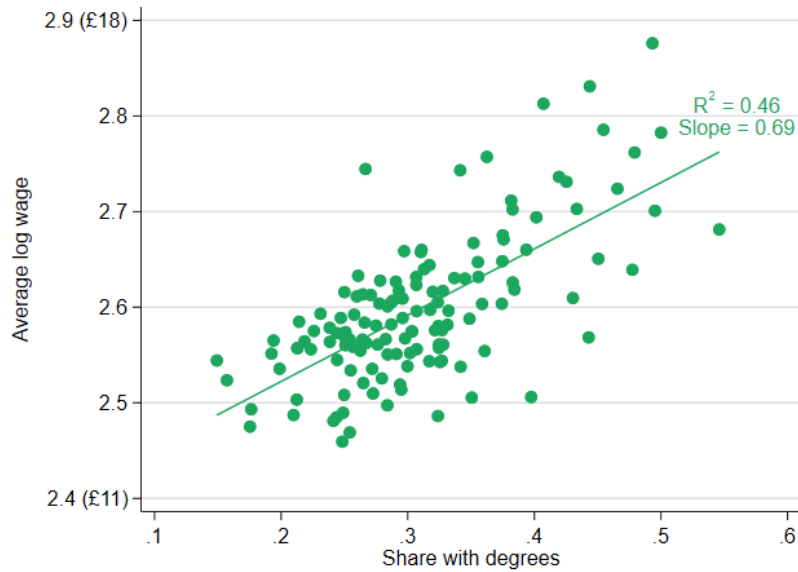


Note: Outcomes at age 27 for the 2002-2005 GCSE cohorts in England. Figure confirms the positive correlation between graduate shares and graduate premiums in previous Figure using a different dataset and a more precise estimate of the graduate premium. Local graduate premium estimated using regression of earnings on graduate status interacted with TTWA dummies, controlling for differences in detailed measures of prior educational attainment, demographics and socio-economic background. Working age (16-64) population.

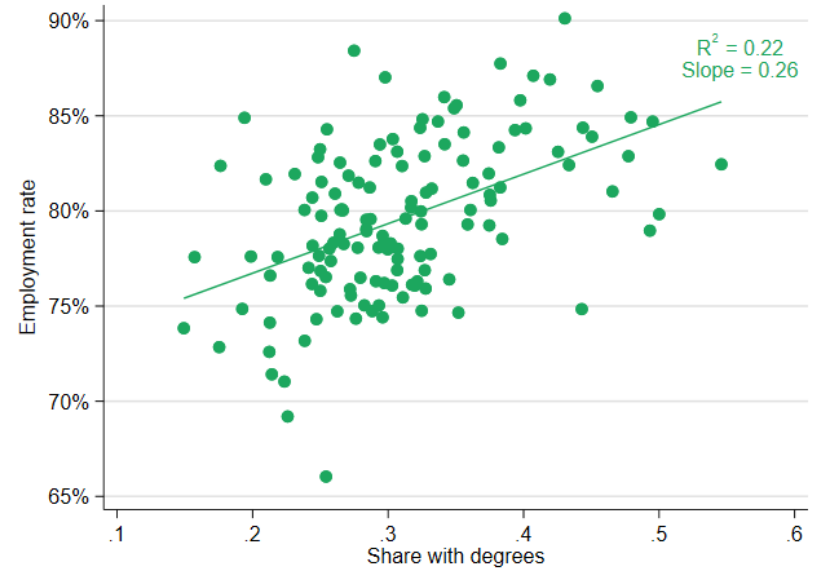
Source: APS, ASHE

Area wages and employment rates are highly persistent

(a) Wages (2019)



(b) Employment rates (2019)



Note: Working age (16-64) population.

Source: APS, ASHE

Beyond tax credits and the minimum wage

- **In-work transfers/tax credits** - increase employment, well targeted to low earning families, but do little for pay and pay progression.
- **Minimum wages** - raise hourly wages, less well targeted to poor families due to falling working hours & solo self-employed; no incentive for progression.
- **Cannot continue to rely exclusively on these as the main policy leavers.**

Can we put flesh on the idea of a 'good jobs' agenda?

- **Training** - a focus on the firm-based accredited skills that enhance progression and complement new technologies, integrated with in-work benefits.
- **Solo self-employment and new forms of work** - need to line up effective tax rates, benefit eligibility, and training access.
- **Productivity and place-based policies** - policies to attract entry of R&D firms and firms that employ a mix of educational groups, policies that are essential for agglomeration, progression and to reverse educational flight.

Designing post-covid policy mix

Educational disadvantage, vocational skills and a path to good jobs.

- offset the learning loss in multiple subjects, especially for deprived families - returns are high; digital access to enable access to training at distance.
- re-think training to focus on accredited skills that complement career progression, oriented towards new technologies – incentivise complementary technologies.

Stalling gender gap in earnings and care.

- policies toward quality childcare provision, with tax credits for training that replaces lost work experience/human capital of mothers.

Differences in prosperity between places.

- policies to reverse educational flight to enhance agglomeration and ‘good jobs’ for lower educated – career progression in ‘left-behind’ areas.

Redesigning welfare.

- avoid incentives for part-time work in welfare-benefit system; incentivise firm-based training; line up effective tax rates, benefit eligibility, and training access to solo self-employed/platform workers.

Generational inequalities housing and wealth.

- reform capital gains tax, property taxation and inheritance taxation - Mirrlees Review plus!