Economy 2030: Firms

John Van Reenen (LSE and POID)

CEP, March 4th 2022

Preview

- The major UK economic problem is 15 years of dismal productivity growth. Has led to stagnation of wage growth across distribution (median and mean)

- Like the US, “Superstar firms” have pulled away from the rest.
  - “Superstar firms” pull away: Top firms had sustained productivity & pay growth, those in middle stagnated
  - Increase in aggregate price-cost markups & concentration

- Policy focus should be on raising productivity
  - Investment in innovation, skills and infrastructure; strengthening competition
  - Policy toolkits

OUTLINE OF TALK

Why does Growth Matter?

Snapshot of Firm dispersion

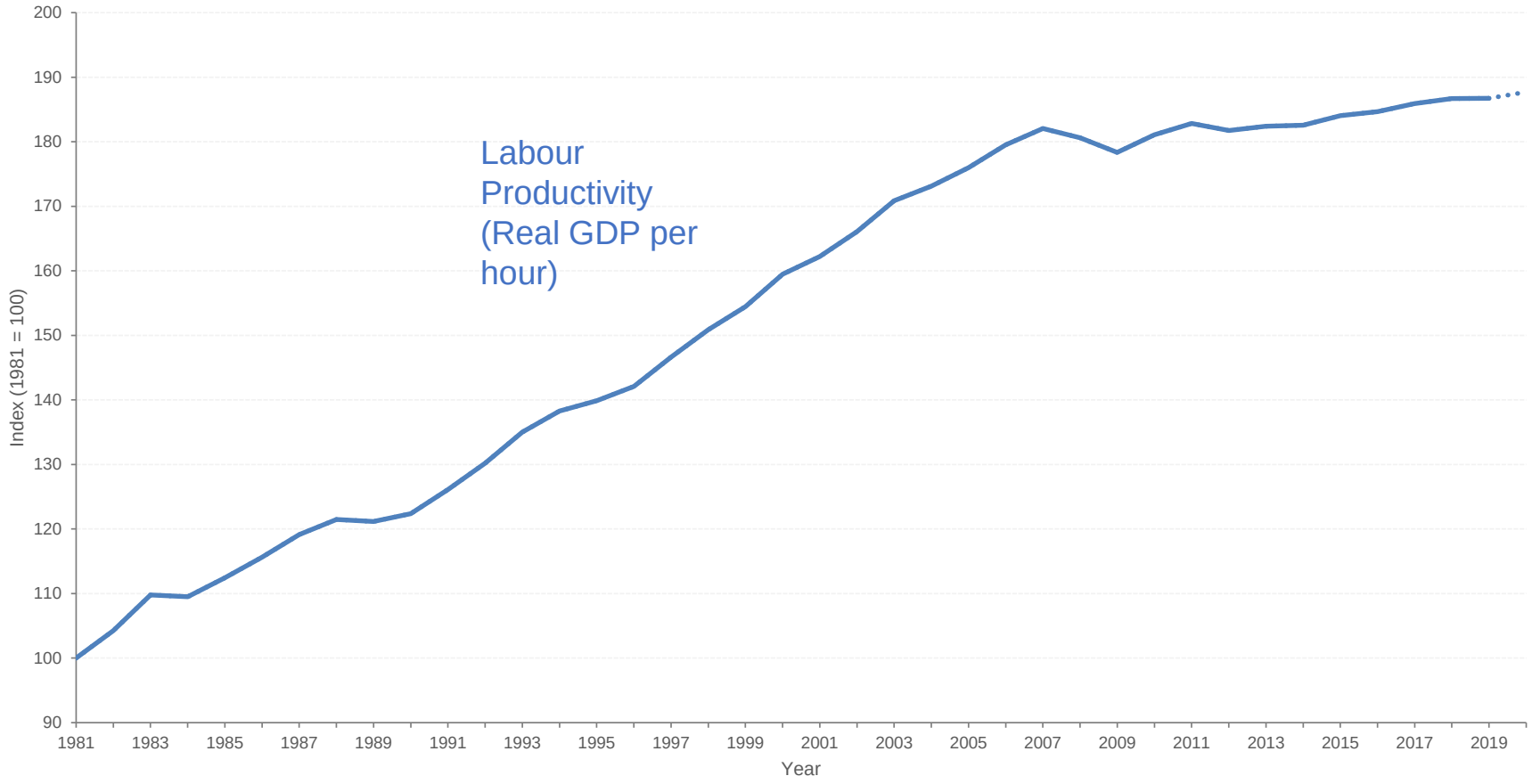
Change over time in UK business landscape

Explanations and Policy

Why does Growth Matter?

- Size of the economy (GDP) is not important *per se* for wellbeing
- Productivity (output per input, e.g. GDP per hour) *does* matter
  - Increasing output by boosting proportion at work or increasing hours worked is not viable in long-term, nor something intrinsically to be desired
- In long-run, wage growth follows productivity growth

The Challenge: Macro Productivity growth dismal since Global Financial Crisis; Output per hour 1981-2020



Source: ONS

The Challenge: Macro Productivity growth dismal since Global Financial Crisis, Output per hour 1981-2020

Global Financial Crisis

Labour Productivity (Real GDP per hour)

Before 2007:
Av. growth = **2.40%**

Since 2007:
Av. growth = **0.21%**

Index (1981 = 100)

200
190
180
170
160
150
140
130
120
110
100
90

1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019

Year

Source: ONS and OECD data

Mean and Median individual Wages have also both stagnated since Financial Crisis

Notes: ASHE data

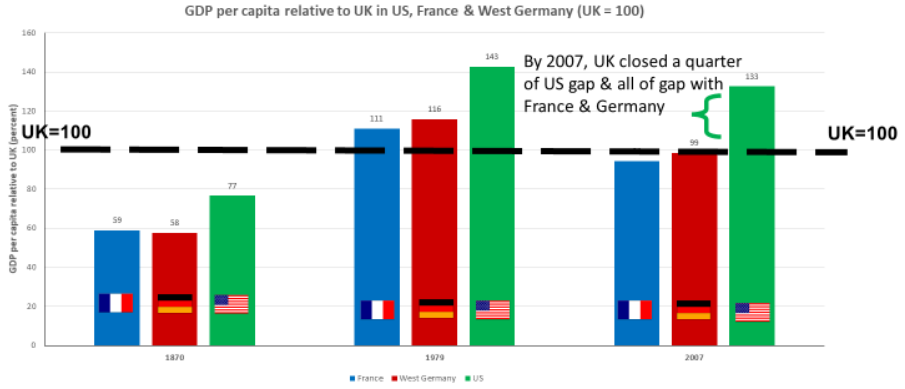
Why does Growth Matter?

- Productivity growth increases size of economic “pie”: it gives us choices:
  - More public goods (health, education), leisure, consumption, environmental improvements, redistribution,..
- Slow productivity & pay growth a major cause of populism anger

Productivity *Levels*

- For many decades, UK has had lower *levels* of productivity compared to US, France & Germany
- **But** there was an improvement in the 30 years leading to financial crisis (1979-2007) compared to the previous century (1870-1979).
  - Implies that policies matter!

After a century of relative decline, the UK closed the GDP per capita gap in the three decades leading up to the Global Financial Crisis



Source: Crafts (2010). Analysis based on data sourced from Angus Maddison historical database and West Germany in 2007 calculated from Statistiches Bundesamt Deutschland 2010.

Drivers of Aggregate Productivity Growth

- Labour productivity increased by increased capital intensity. Fundamental productivity (TFP) driven by:

1. Pushing out the **technological frontier**
   - Important for advanced country like UK

2. **Catching Up** to the frontier
   - **Diffusion** of technology & managerial best practices

3. Reducing **Misallocation**
   - Allocating more output to more efficient firms

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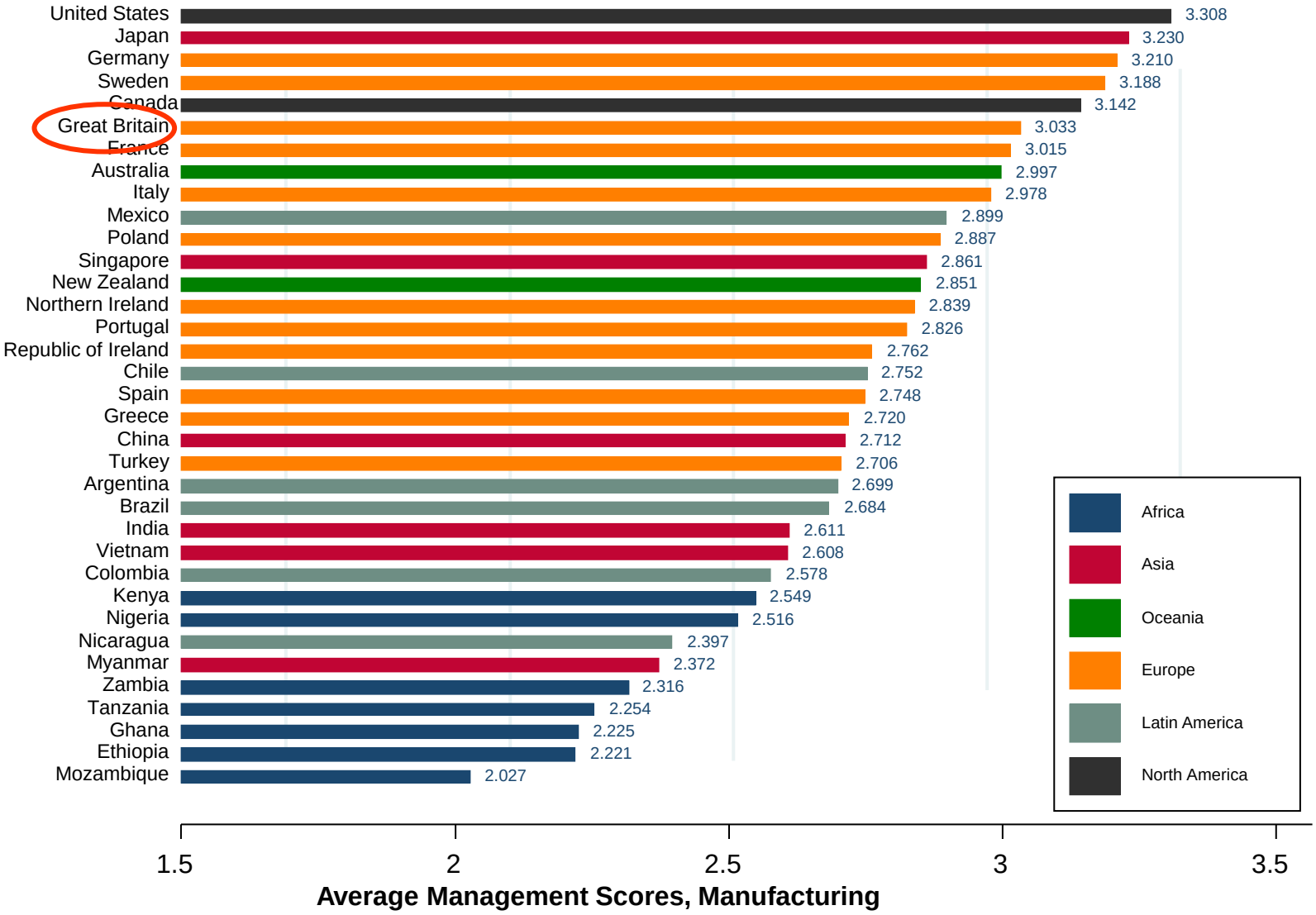
The Big Spread: 0.1% of UK firms account for almost 2 in 5 jobs and half of all turnover

	Businesses (1,000's)	*Jobs (1,000's)*	*Turnover (£ billion)*	*Businesses (%)*	*Jobs(%)*	*Turnover (%)*
Micro (0–9 workers)	2,397	5,529	802	40.1%	19.9%	18.5%
Small (10–49 workers)	212	4,140	646	3.5%	14.9%	14.9%
Medium (50–249 workers)	36	3,534	694	0.6%	12.7%	16.0%
Large (250+ workers)	**8**	**10,896**	**2,077**	**0.1%**	**39.3%**	**47.8%**
Total	*5,981*	*27,732*	*4,347*	*100%*	*100%*	*100%*

Notes: BEIS Business Demographics (2020); UK registered businesses in 2019

Average Management Scores by Country



Source: Bloom, Sadun & Van Reenen (2017). **Note:** Unweighted average management scores; # interviews in right column (total = 15,489); all waves pooled (2004-2014) https://worldmanagementsurvey.org/

Management also varies heavily within countries

Source: Scur, Sadun, Van Reenen, Lemos and Bloom (2021)

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OUTLINE OF TALK

Why Look at Inequality Between Firms?

Firm level findings

Explanations

Policy

Deaton Review: Firms and Inequality

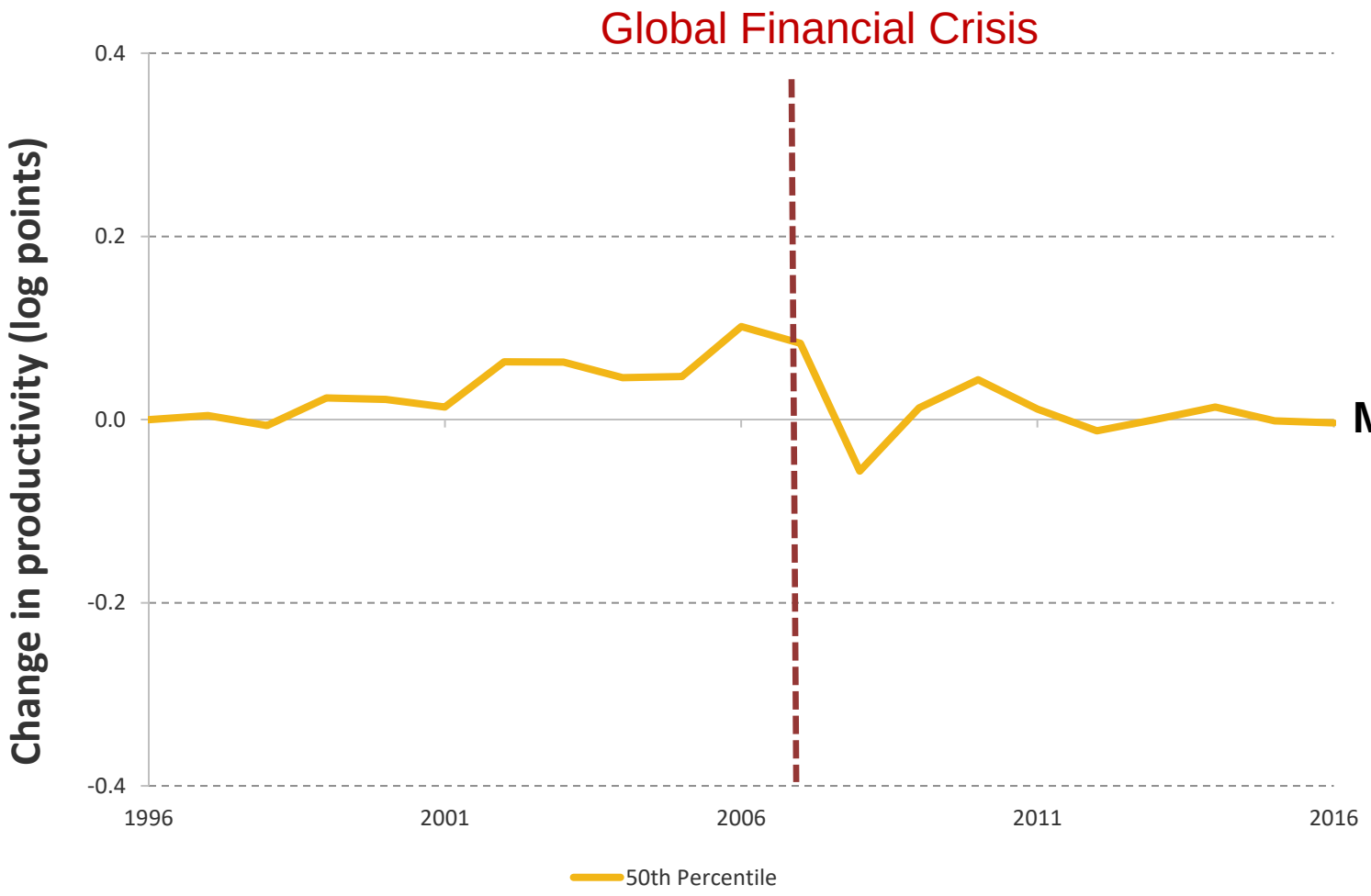
Jan de Loecker (KU Leuven), Tim Obermeier (IFS)
and John Van Reenen (LSE and POID)

Our Strategy in looking at UK firm-level data

- Examine UK using best current data
  - Company accounts on population of UK incorporated firms since 1996 (BVD *Historical Orbis*) & Worldscope (publicly listed firms) since mid ‘80s
  - Administrative ONS data on firm population (BSD) & subsamples (ARD/ABI/ABS)
  - Other Publicly available data
  - Other research papers

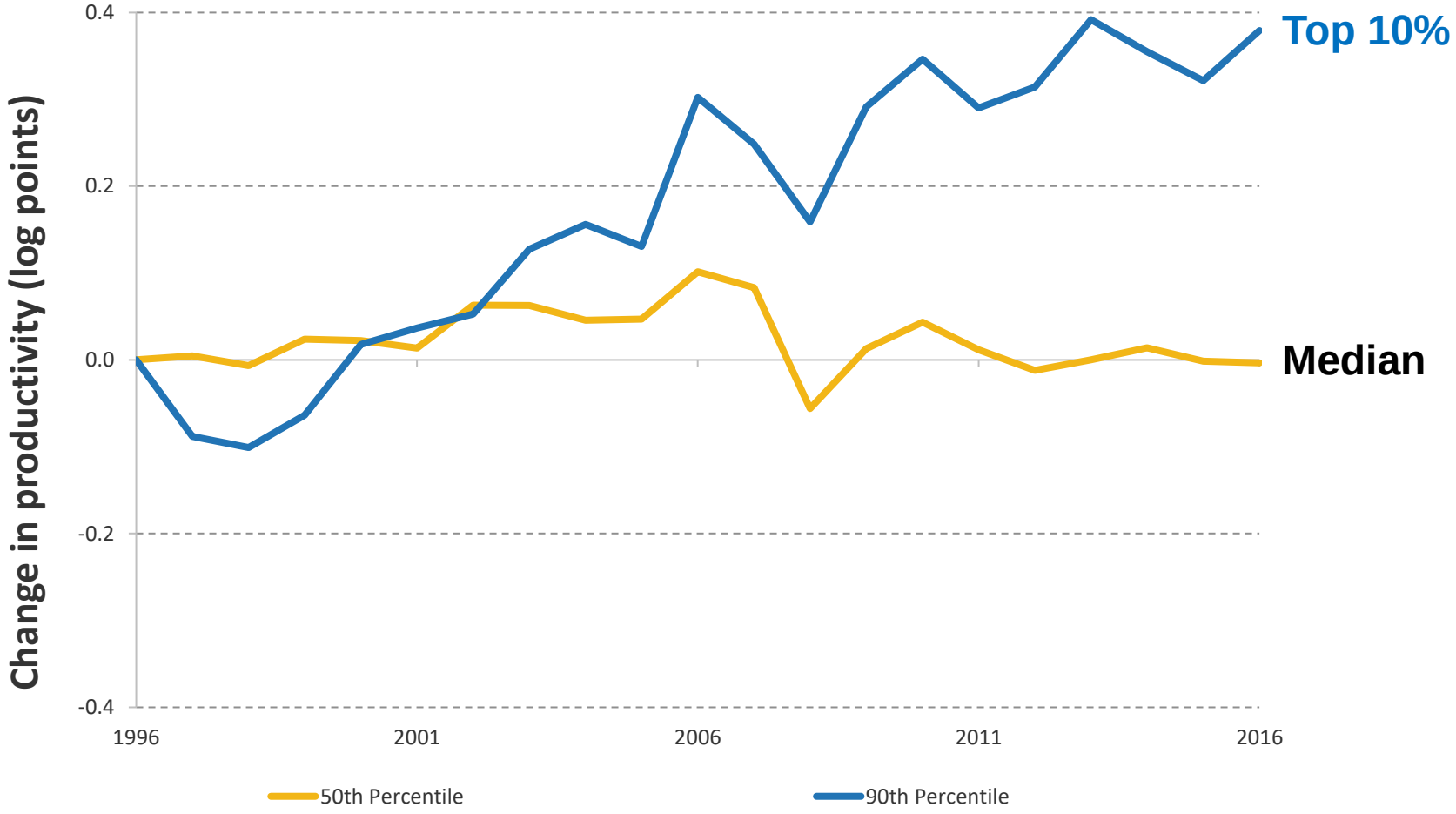
- Our analysis focuses on private sector (“market economy”)

Productivity growth since 1996: Stagnation after Financial Crisis clear for median firm



Notes: Historical ORBIS, ln(value added/employee), quantiles weighted by firm employment; values indexed to zero in 1996; Changes in log points, so 0.05 = about 5% growth; 0.4 = $(e^{0.04} - 1)*100 = 50\%$

"The Best pull away from the Rest": Superstar Firms have strong productivity growth



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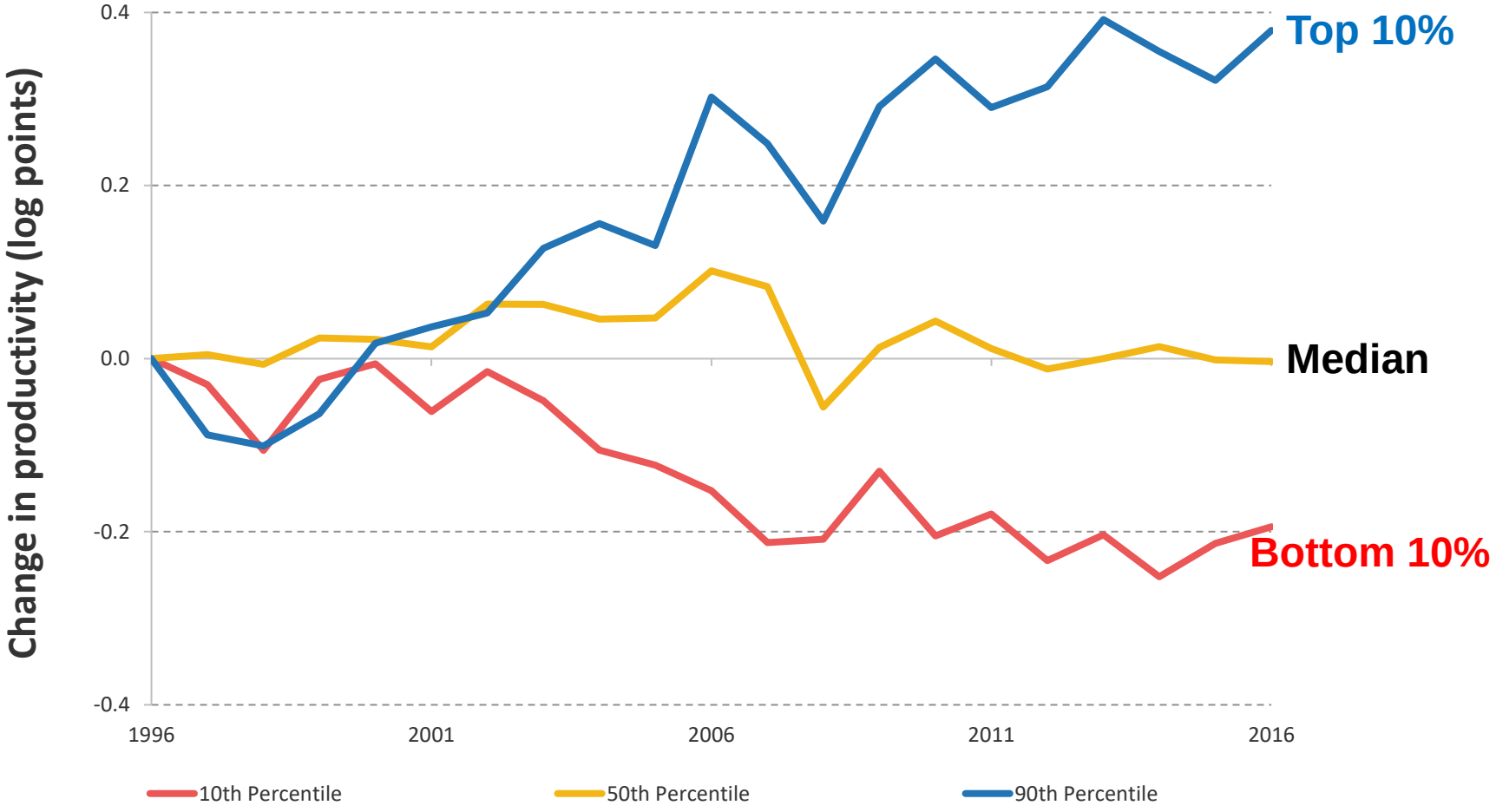
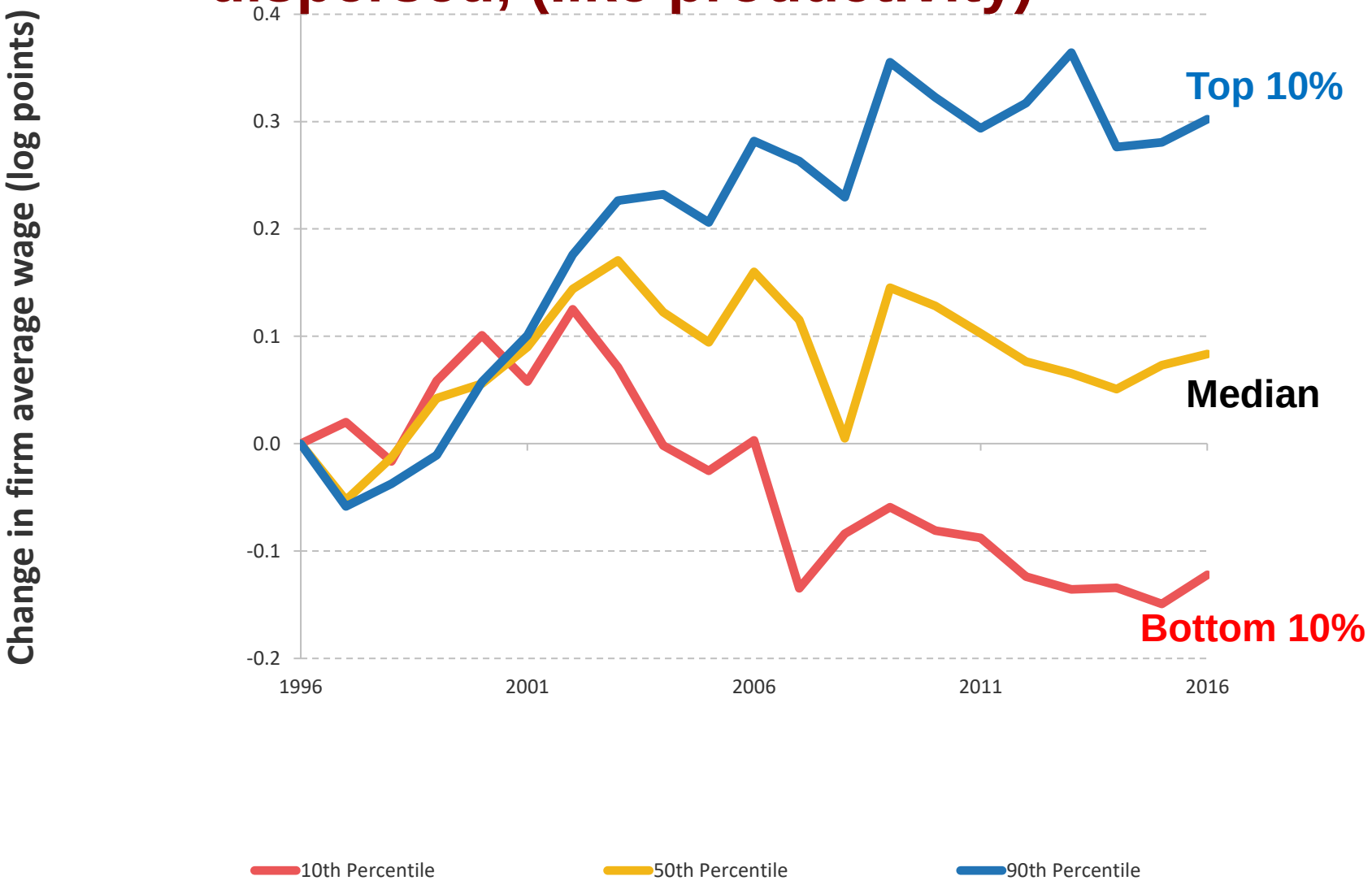
And poor productivity performance at the bottom of the distribution



Notes: Historical ORBIS, ln(value added/employee), quantiles weighted by firm employment; values indexed to zero in 1996; Changes in log points, so 0.05 = about 5% growth; 0.4 = $(e^{0.40} - 1)*100 = 50\%$

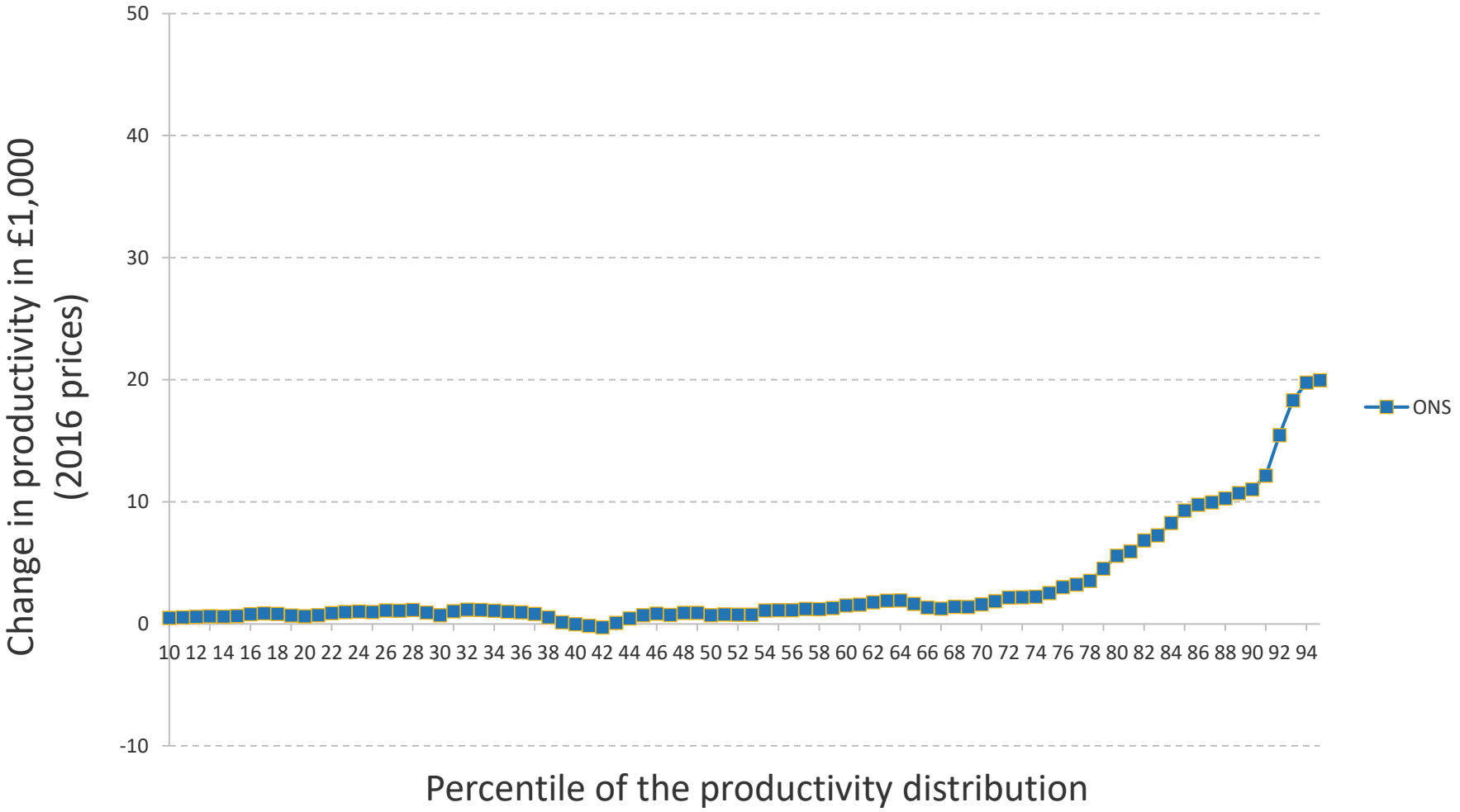
But what about Wages in these Firms?

Average Wages by firm have become increasingly dispersed, (like productivity)



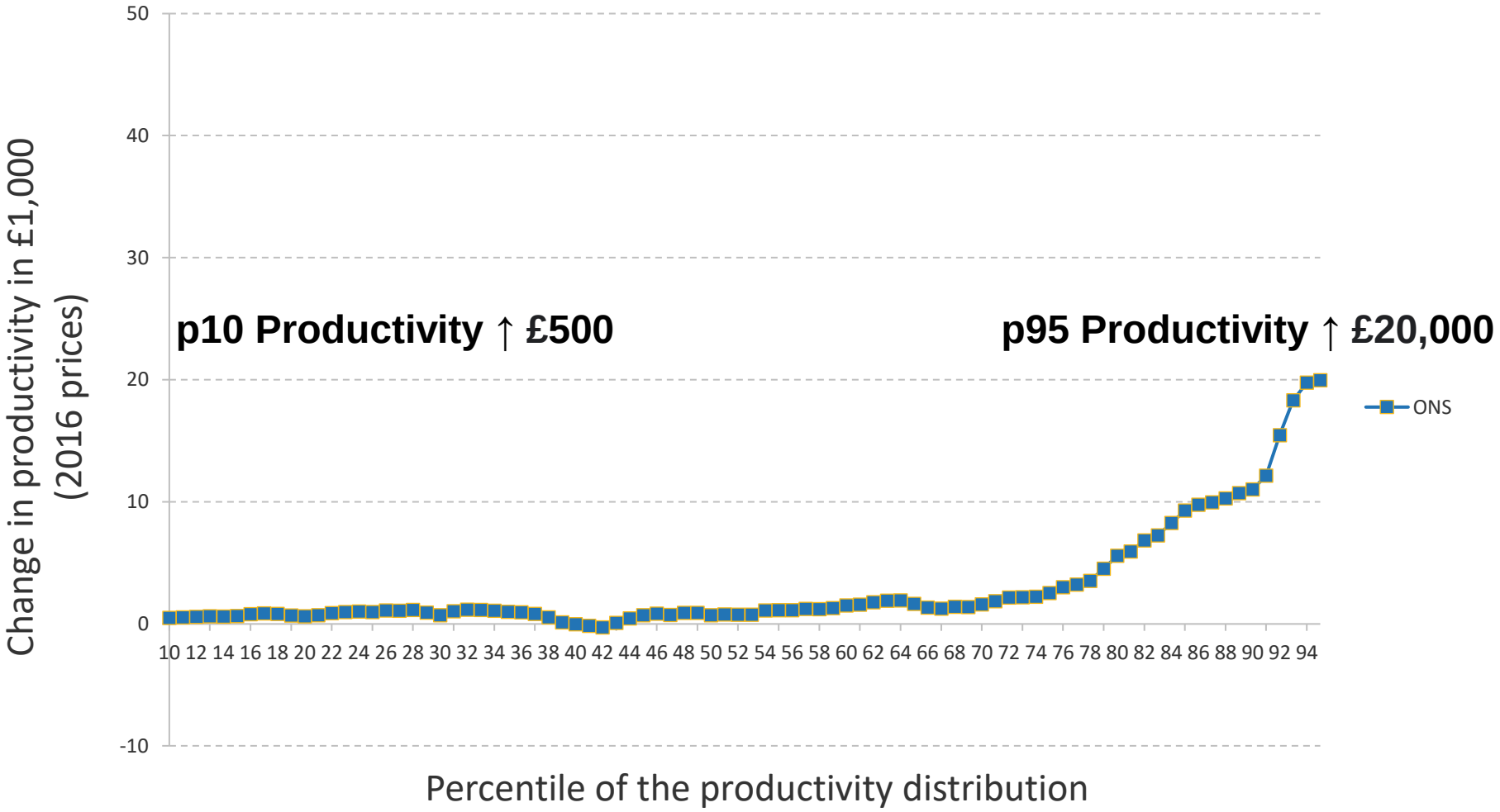
Notes: Historical ORBIS, ln(wage bill/employment), quantiles weighted by firm employment; values indexed to zero in 1996; Changes in log points, so 0.05 = about 5% growth; 0.4 = $(e^{0.40} - 1)*100 = 50\%$

Growth in firm productivity level, 1998-2016, by point in the distribution (ONS ABI data)



Notes: ABI/ABS ONS data (only starts 1998); firm value added per worker; quantiles weighted by employment; https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/firmlevellabourproductivityestimatesfromtheannualbusinesssurveyabssummarystatistics

Near zero growth for most of distribution 1998-2016, big increases for “superstars”



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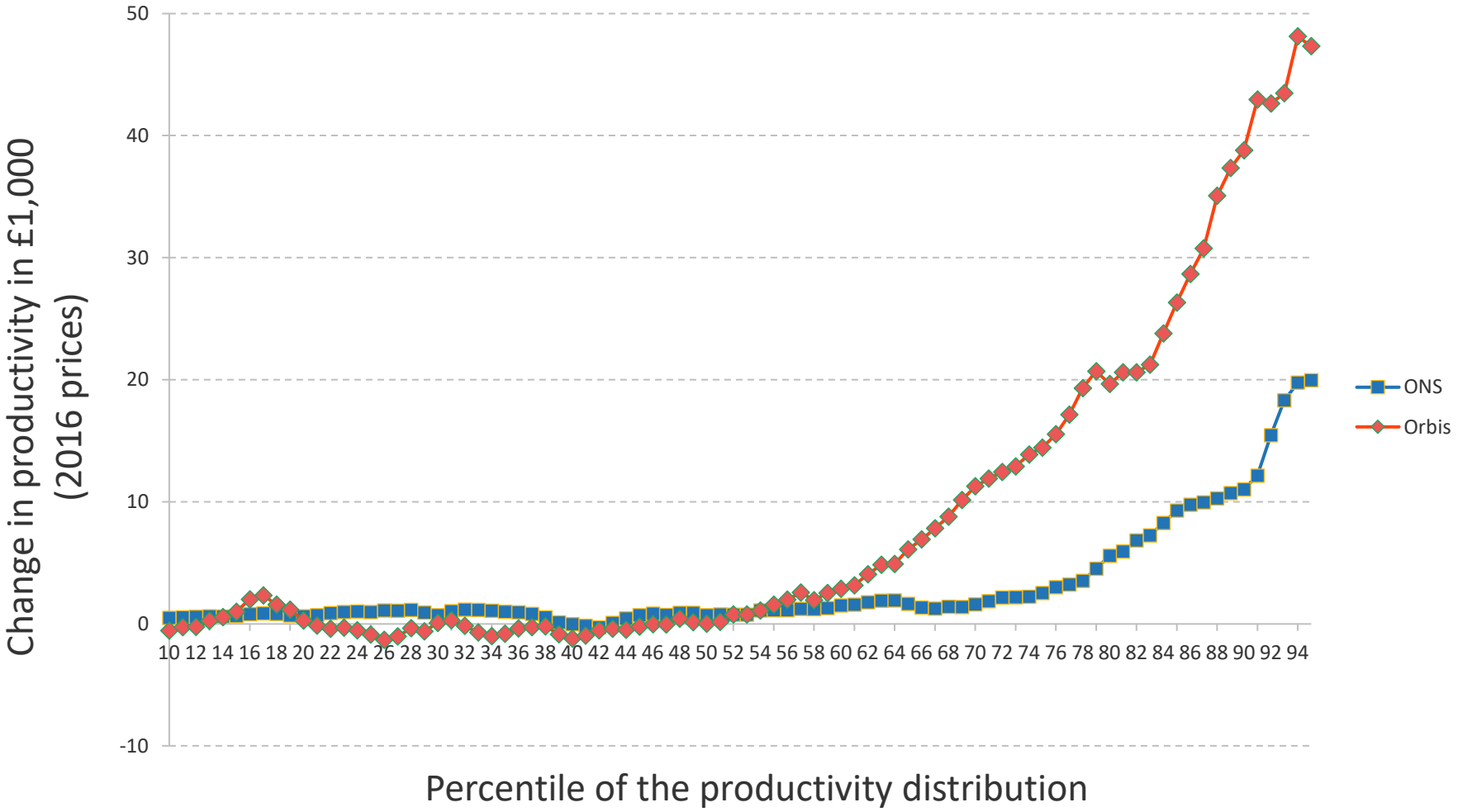
Comparing Orbis & ONS: similar qualitative trend, but more growth at top in Orbis



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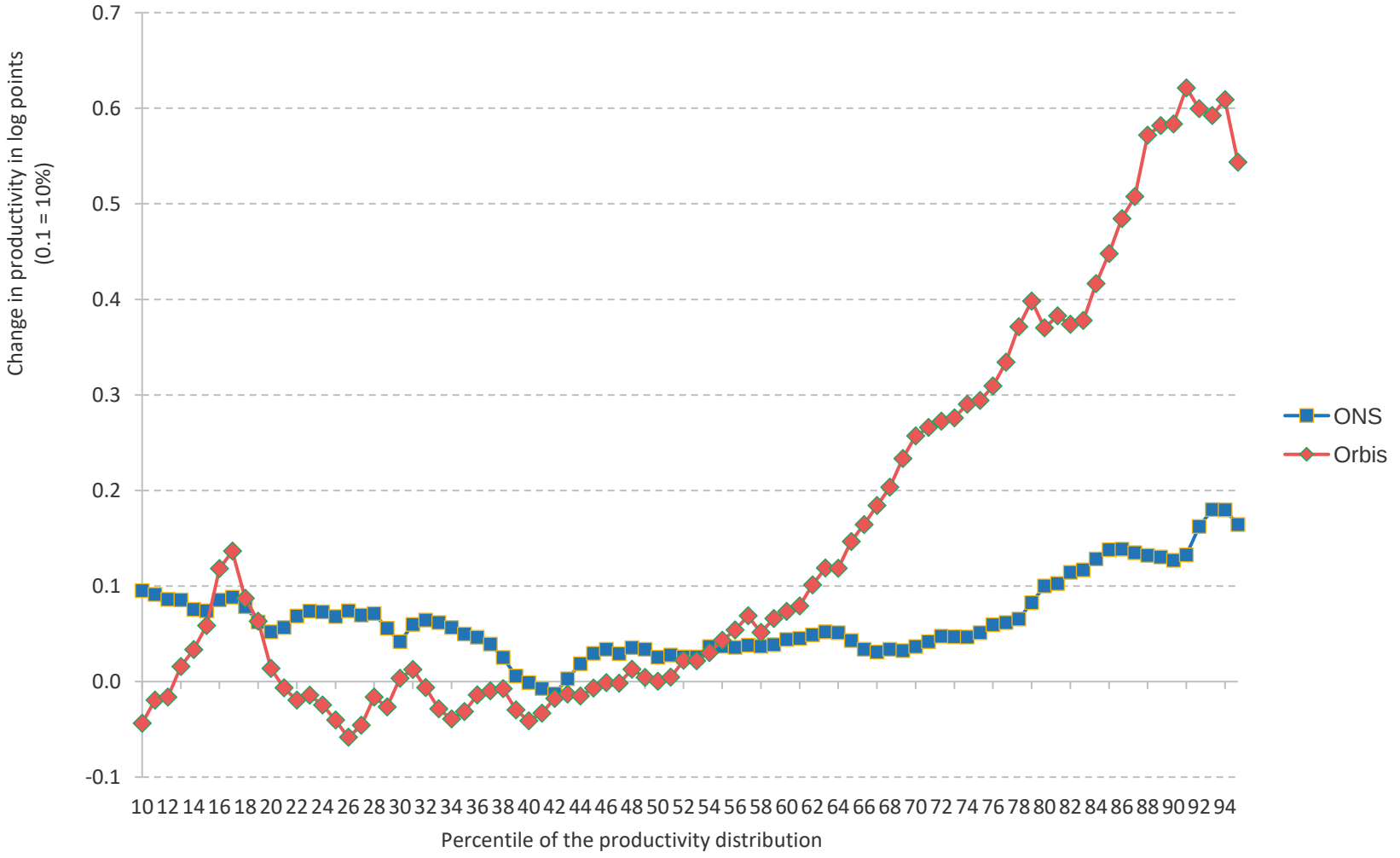
Growth in firm productivity (logs), 1998-2016, by point in the distribution



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Comparing UK trends with US

Indicator	*UK*	*US*
Aggregate Productivity Growth	Slowdown since GFC	
Firm Productivity Dispersion	Increase	
Aggregate Wage Growth	Slowdown since GFC	
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Notes: GFC = Global Financial Crisis

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Aggregate Mark Up		
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Aggregate Labour Share		
Firm Labour Share Dispersion		

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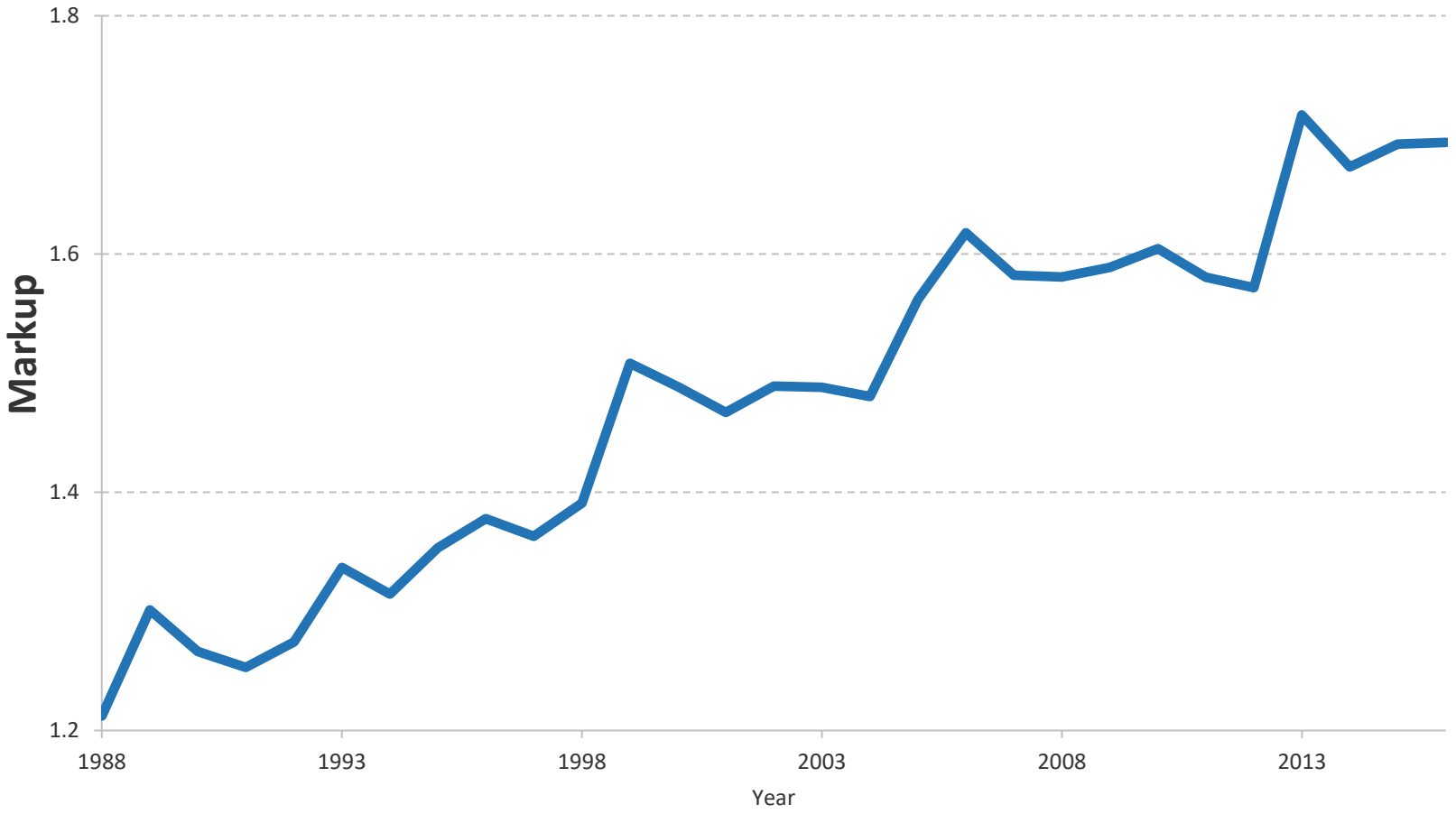
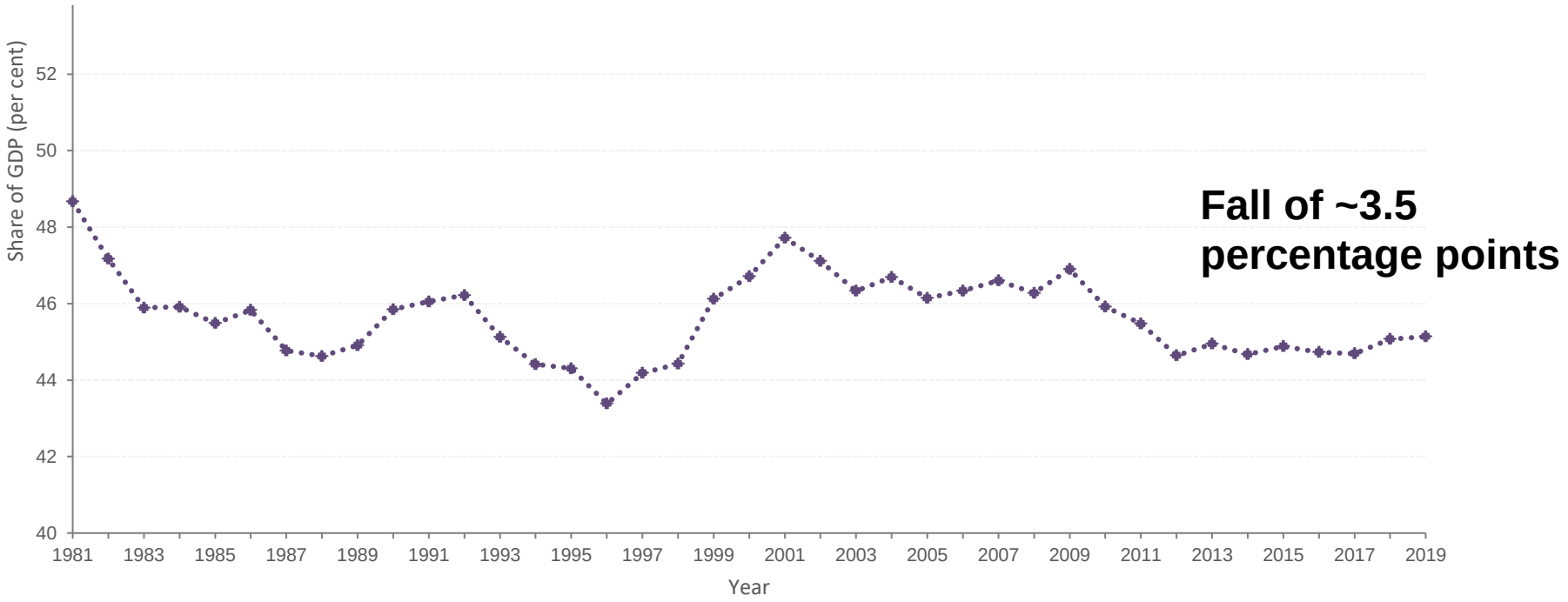
Aggregate markups (Prices/marginal cost) have also been increasing, 1988-2016



Notes: Worldscope (publicly listed firms), estimate of price/marginal costs using COGS/Sales and calibrated elasticity of output to variable costs of 0.85

UK Wage Share of GDP falls, 1981-2019



Source: Teichgraeber and Van Reenen (2021) using ONS and OECD data.

Note: Wages and adjusted mixed income over GDP (excluding non-wage benefits of employees)

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Average firm size		
Firm size (Concentration)		
Share of start-up activity		

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Three broad types of explanation

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   - Network effects in digital industries: “Google effects”
   - Increased fixed costs/Intangible Capital (e.g. software): “Tesco effects”
   - Slower technology diffusion from superstar leaders to followers

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   - Slower technology diffusion from superstar leaders to followers
3. **Globalization**
   - Reallocation effects (via product markets)
   - Multinational Global Value Chains (via input markets)

Assessment

- Striking similarity between UK and US
  - Suggests some **common factors** like technology rather than **purely** country-specific institutional explanations (like weakening competition enforcement in US)

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- Labour Share falls less in UK than US, despite upward trend in price-cost mark up in both countries
  - Offset by fall in monopsony power in UK? 1999 introduction and uprating of the **minimum wage** (Draca, Machin & Van Reenen, 2011) whereas real value fell in US

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Firm dispersion and Policy

1. **Why look at whether is UK better/worse than other countries (or over time) in various dimensions?**
   - Useful as a diagnostic tool for what might be wrong
   - Figure out what are the low hanging policy fruit
2. **But (to me) the key questions are**
   - What can be done to raise productivity?
   - What policies work?
   - How can we bind them together in an effective Growth Plan?
3. **It matters less how we got into a productivity hole: the main question is how we dig ourselves out!**

Innovation Policy: The "Lightbulb" Table

(1) Policy	(2) Quality of evidence	(3) Conclusiveness of evidence	(4) Benefit - Cost	(5) Time frame:	(6) Effect on inequality
Direct R&D Grants	Medium	Medium	💡💡	Medium-Run	↑
R&D tax credits	High	High	💡💡💡	Short-Run	↑
Patent Box	Medium	Medium	Negative	n/a	↑
Skilled Immigration	High	High	💡💡💡	Short to Medium-Run	↓
Universities: incentives	Medium	Low	💡	Medium-Run	↑
Universities: STEM Supply	Medium	Medium	💡💡	Long-Run	↓
Exposure Policies	Medium	Low	💡💡	Long-run	↓
Trade and competition	High	Medium	💡💡	Medium-Run	↑

"Demand"

"Supply"

Source: Bloom, Van Reenen and Williams (2019, JEP)

Toolkit of Management policies

L = Low; Not politically easy
M = medium
H = Highly possible

Policy type	Strength of evidence	Policy Net benefit (out of 5)	Difficulty of implementation	Time frame
Structural				
Competition	H		M	medium
Trade and FDI	H		L	medium
Education	M		M	long
Governance	M		M/L	long
Direct				
Training - consulting	H		H	short
Training - formal classroom	M		H	medium
Information/benchmarking	L/M		H	medium

Source: Scur, Sadun, Van Reenen, Lemos & Bloom (2021)

Policy

1. Slow pay growth in UK since 2008 (median and mean) linked to low productivity growth (rather than falling labor share or growing wage inequality)

   - **Raising productivity** through long-term investments in innovation, skills & infrastructure. Address policy ADD
   - Need faster diffusion of better technology & management

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2. Even if superstar firm success is because of innovation, there is still risk of abusing market dominance
    - Must **modernise competition policy** in “winner take all” world

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2. Even if superstar firm success is because of innovation, there is still risk of abusing market dominance
   - Must **modernise competition policy** in “winner take all” world
3. **Labour market institutions** have been important countervailing force in UK (Minimum Wages)
   - Improving labour market regulation (e.g. in Gig economy)

Thanks!

Some Further Reading (and viewing)

"Innovation Policies to Boost Productivity" (2020) Hamilton Policy Proposal 2020-13 https://www.hamiltonproject.org/assets/files/JVR_PP_LO_6.15_FINAL.pdf webinar

"A Toolkit of Policies to promote Innovation" (Nick Bloom, Heidi Williams and John Van Reenen), *Journal of Economic Perspectives (2019)* 33(3) 163–184 http://cep.lse.ac.uk/pubs/download/dp1634.pdf

"Why Do We Undervalue Competent Management" (Raffaella Sadun, Nick Bloom and John Van Reenen) *Harvard Business Review* (2017), September-October

"Measuring and Explaining Management practices across firms and nations" (Nick Bloom and John Van Reenen) *Quarterly Journal of Economics* (2007) 122(4), 1351–1408.

"The Costs and Benefits of Brexit" (Swati Dhingra, Hanwei Huang, Gianmarco Ottaviani, Joao Pessoa, Tom Sampson and John Van Reenen) *Economic Policy* (2017), 32(92) 651–705 Vox

"Who Becomes an Inventor in America? The Importance of Exposure to Innovation" (Alex Bell, Raj Chetty, Xavier Jaravel, Neviana Petkova and John Van Reenen), http://cep.lse.ac.uk/pubs/download/dp1519.pdf Data *Quarterly Journal of Economics* (2019)134(2) 647–713, New York Times Vox Atlantic Fortune Conversation VoxUS Economist VC Centrepiece INET

"Mapping the Two Faces of R&D: Productivity Growth in a panel of OECD industries" (Rachel Griffith, Stephen Redding & John Van Reenen) *Review of Economics and Statistics*, (2004) 86(4) 883-895. http://cep.lse.ac.uk/textonly/people/vanreenen/papers/wp0002.pdf

Further reading

- "The World Management Survey at 18" (Scur, Sadun, Van Reenen, Lemos & Bloom, 2021), *Oxford Review of Economic Policy* https://poid.lse.ac.uk/textonly/publications/downloads/poidwp002.pdf

- World Management Survey http://worldmanagementsurvey.org/

- "Increasing Difference Between Firms" *Changing Market Structures and Implications for Monetary Policy*, Jackson Hole Symposium (Van Reenen, 2018) 19-65 http://cep.lse.ac.uk/pubs/download/dp1576.pdf NYT NPR

- LSE Growth Commission Final Report (Aghion et al, 2013)

http://www.lse.ac.uk/researchAndExpertise/units/growthCommission/documents/pdf/GCReportSummary.pdf

- "Management as a Technology" (Bloom, Sadun and Van Reenen, 2017): http://cep.lse.ac.uk/pubs/download/dp1433.pdf

- "Do Fiscal Incentives increase innovation? An RD Design for R&D" (Antoine Dechezlepretre, Elias Einio, Ralf Martin, Kieu-Trang Nguyen and John Van Reenen), CEP Discussion Paper 1413 Vox, http://cep.lse.ac.uk/pubs/download/dp1413.pdf

Why does Growth Matter?

- Size of the economy (GDP) is not important per se for welfare
- Productivity does matter. Outputs per input, e.g. GDP per hour
  - Increasing GDP by increasing proportion of population working or increasing hours worked is not viable in long-term
- In long-run, wage growth follows productivity growth
- Productivity growth increases size of economic “pie” gives us choices:
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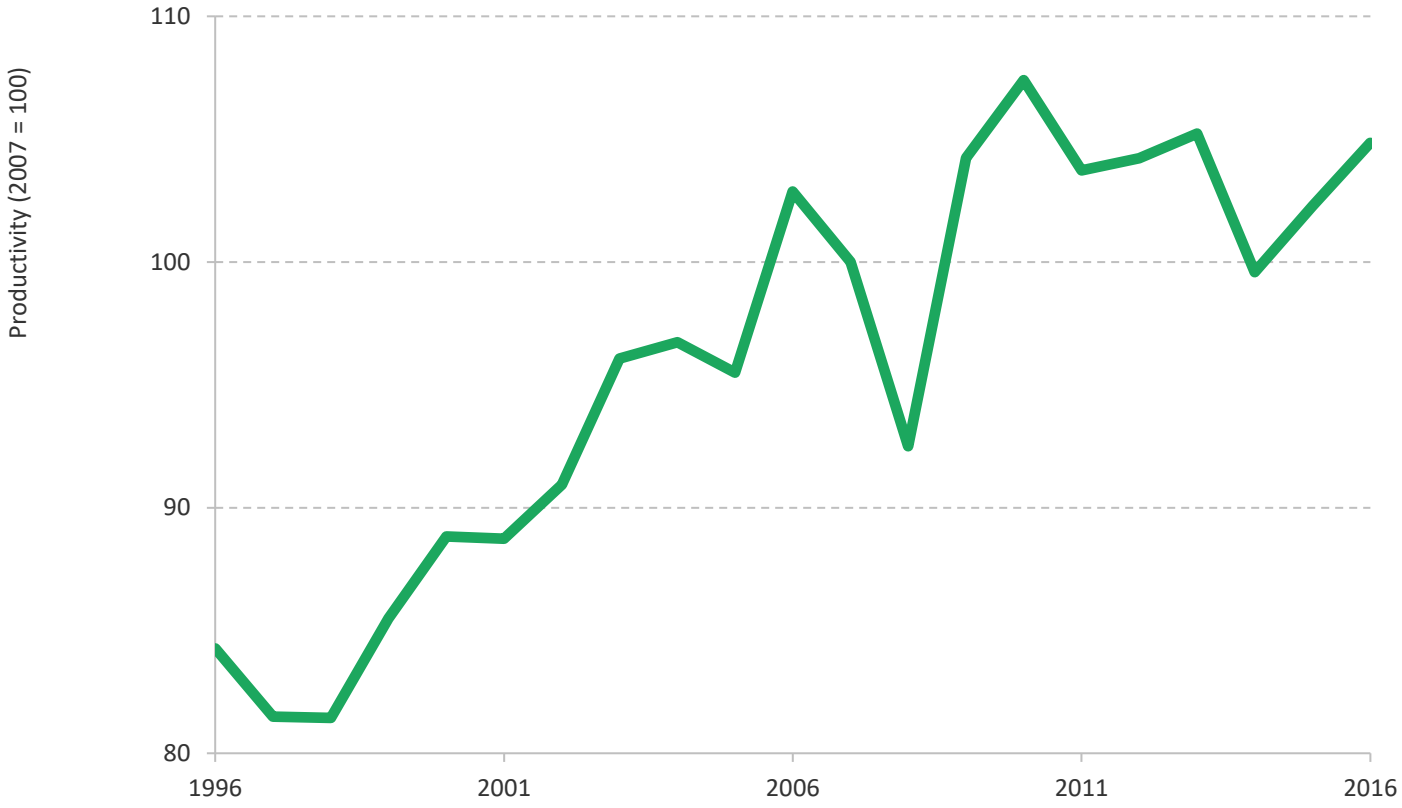
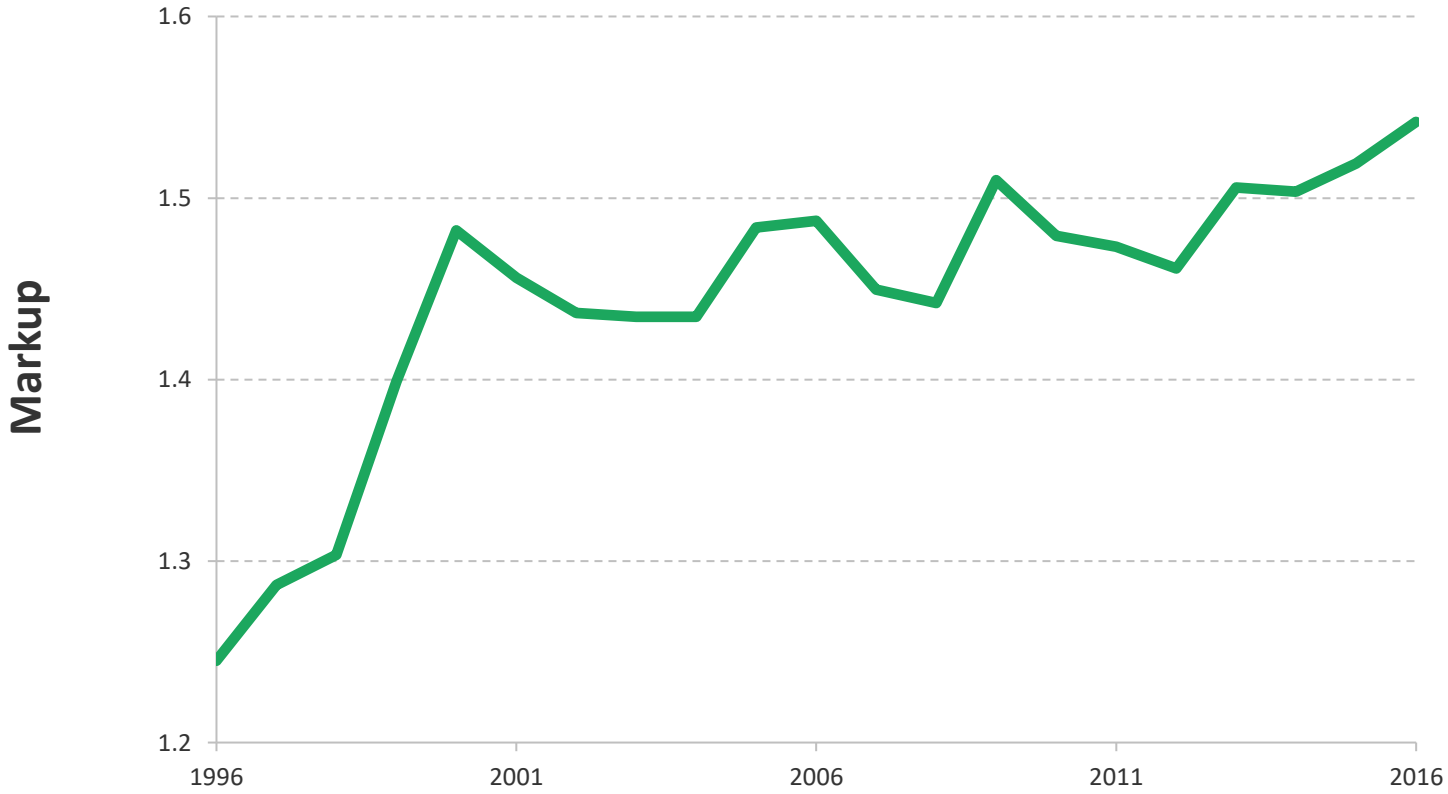
Productivity: Aggregated value added per worker from Historical Orbis shows similar trends to ONS data



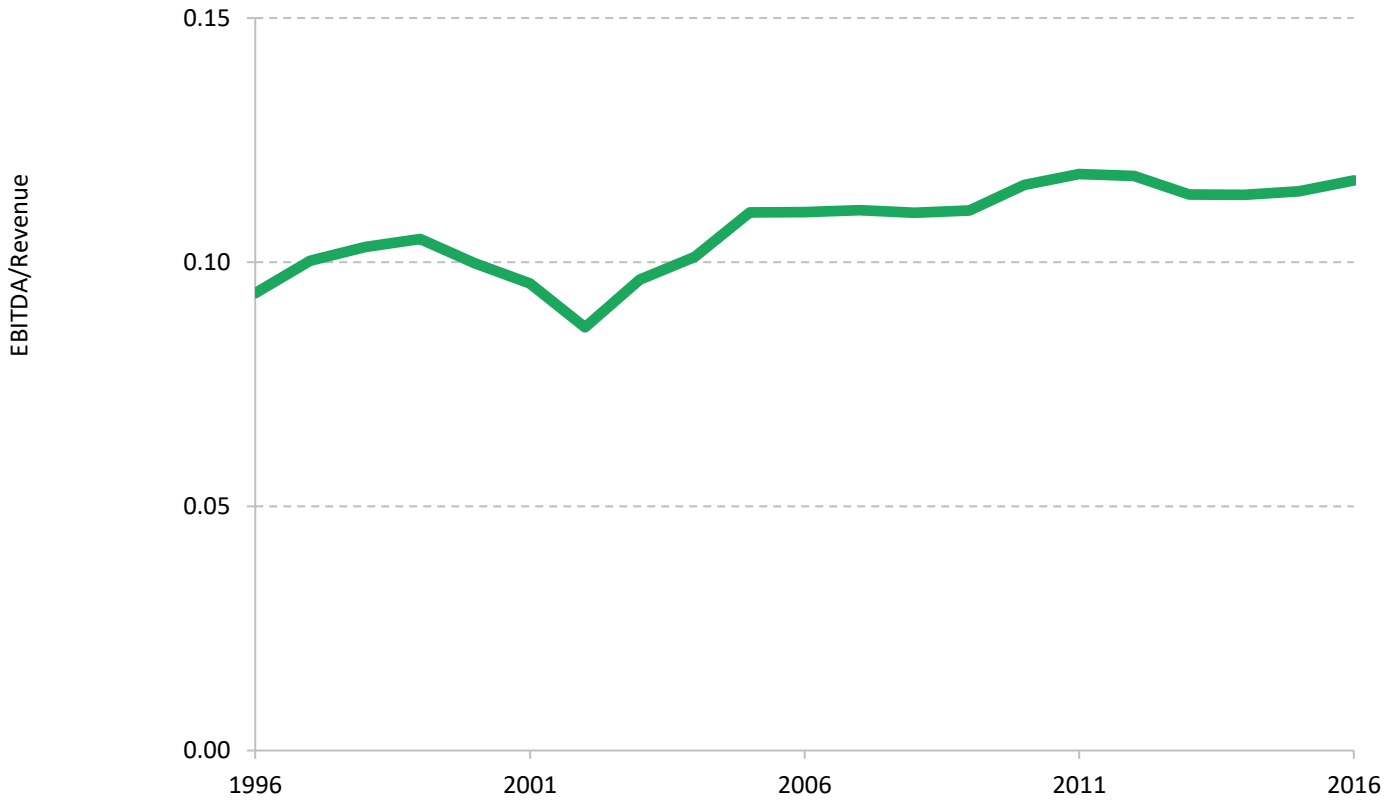
Notes: Historical Orbis data aggregated

Aggregate markups (Prices/Marginal cost) have been increasing, 1996-2016



Notes: Historical ORBIS, estimate of price/marginal costs using COGS/Sales and calibrated elasticity of output to variable costs of 0.85

Profit rate (EBITA/Revenue) has grown, but more slowly than markup



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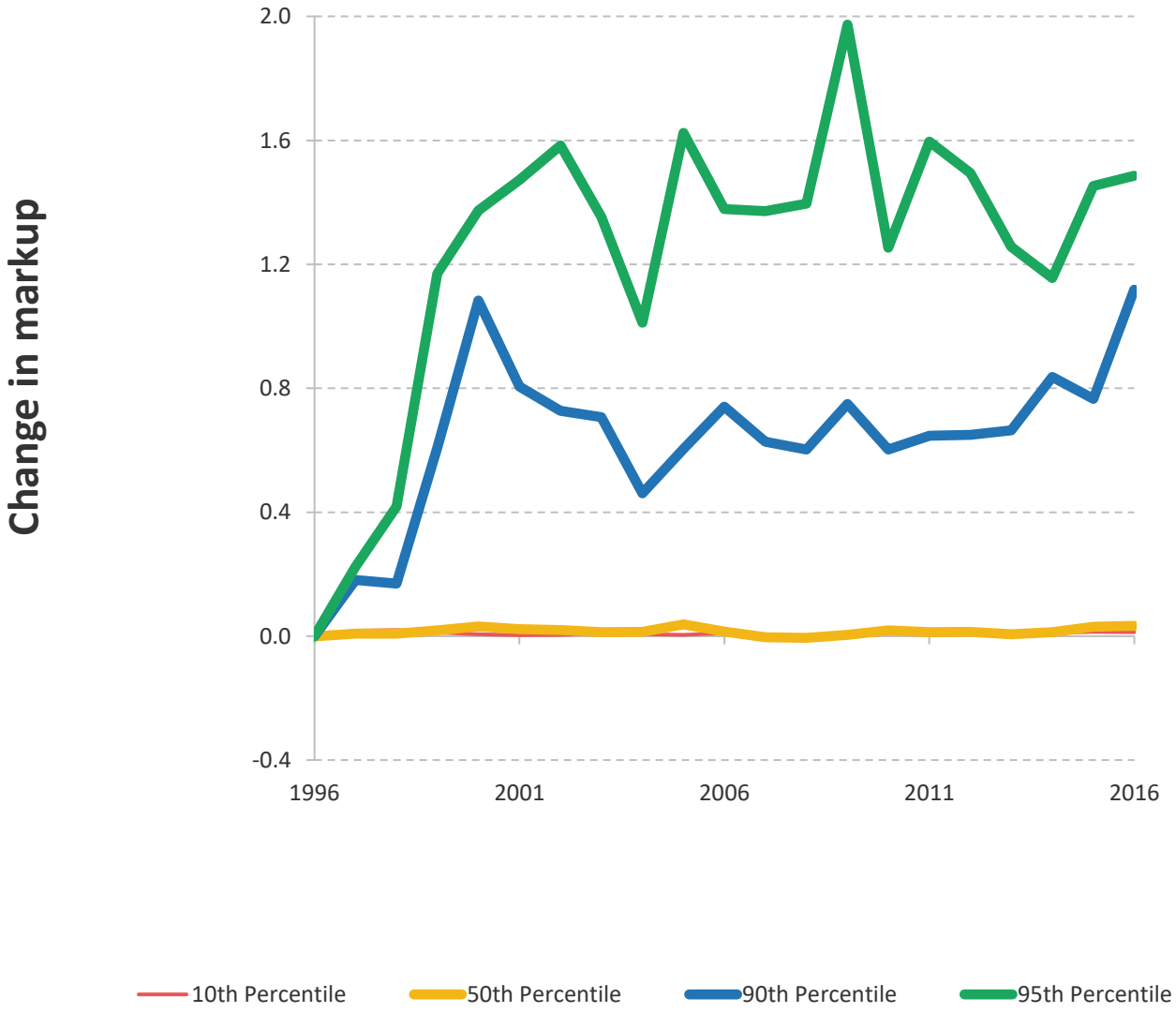
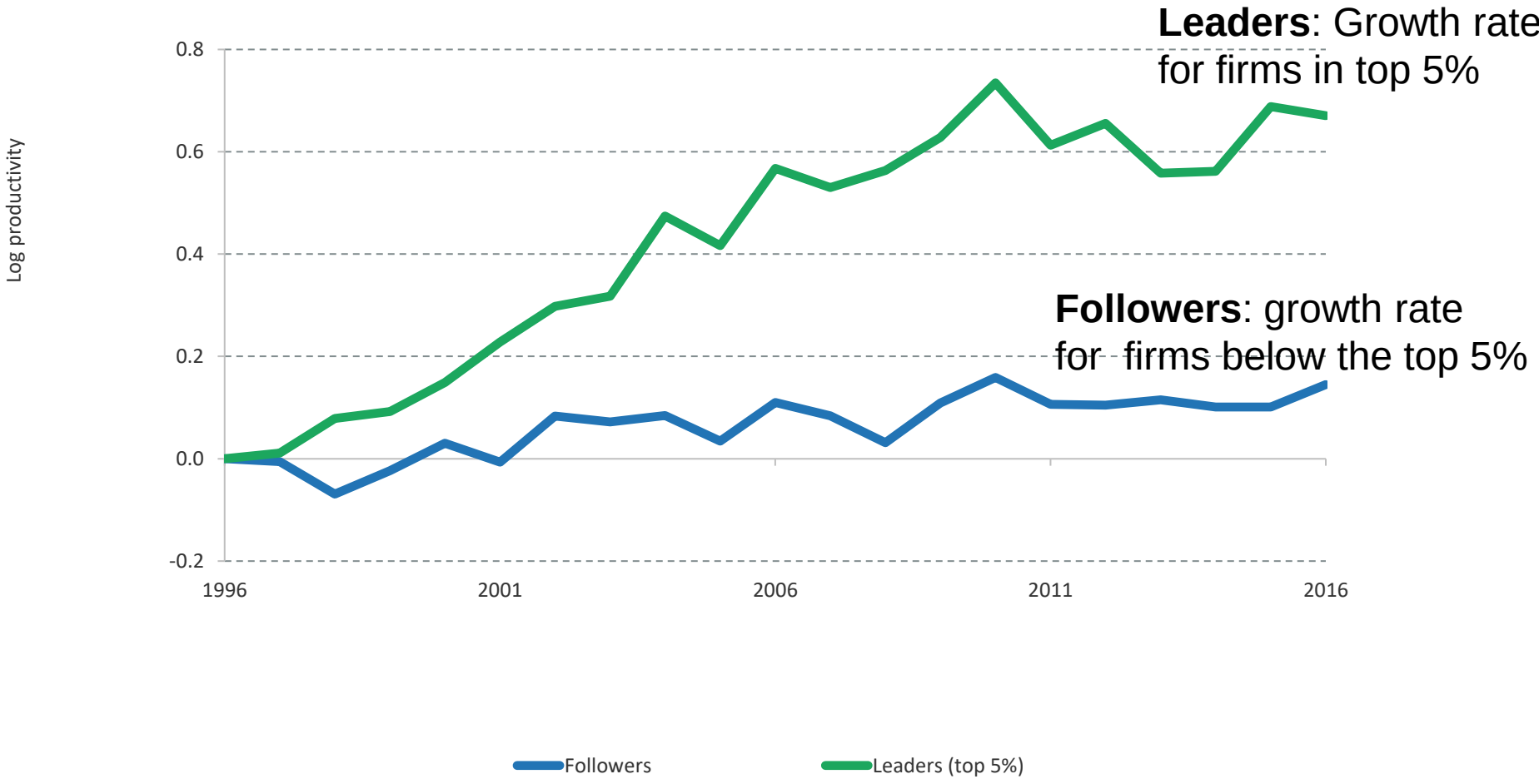
Median firm markups flat, but growing a lot at the top



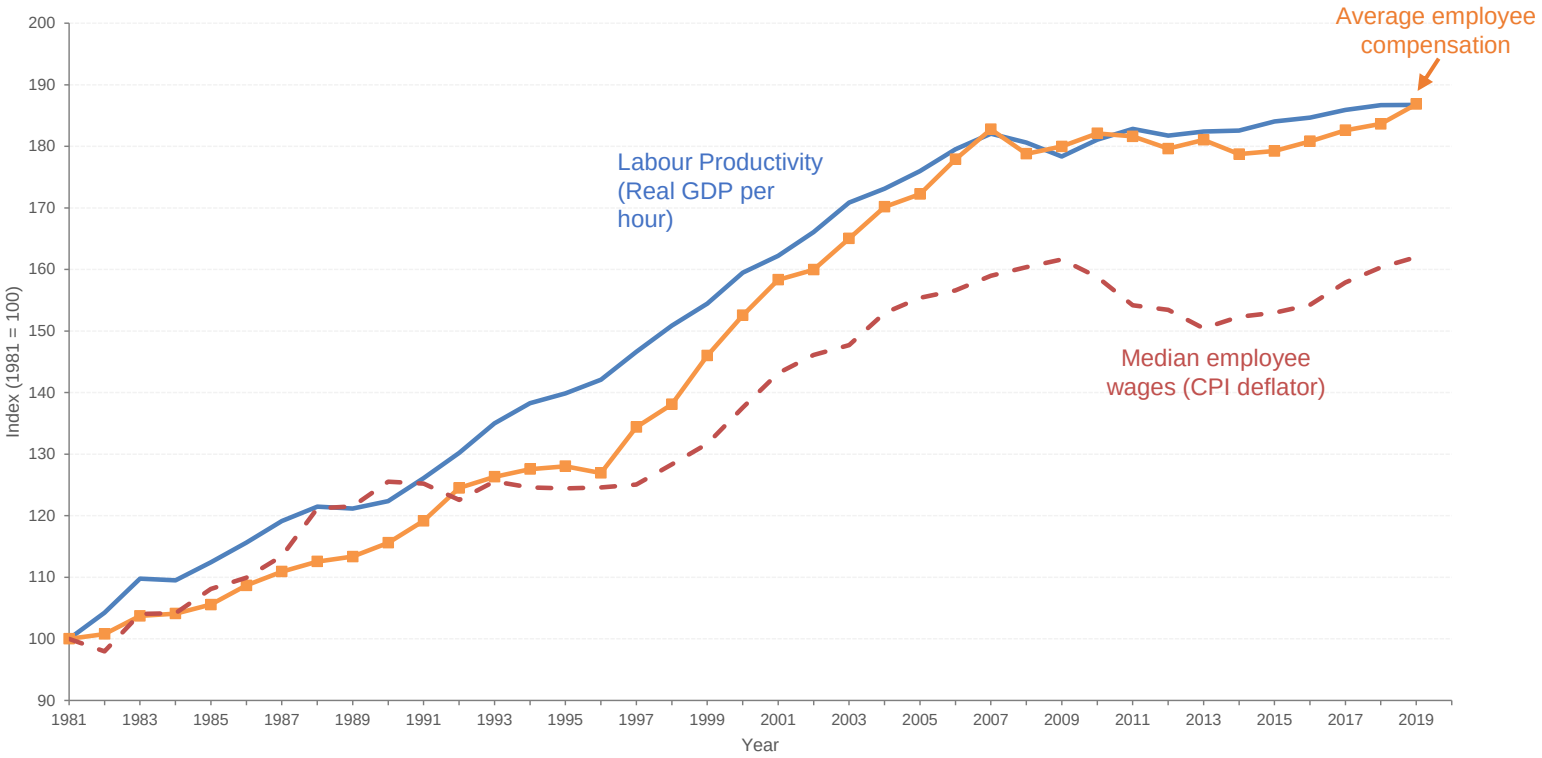
Notes: Historical Orbis data; series normalized to zero in 1996

Increase in UK cross firm productivity dispersion: productivity growth stronger for top firms



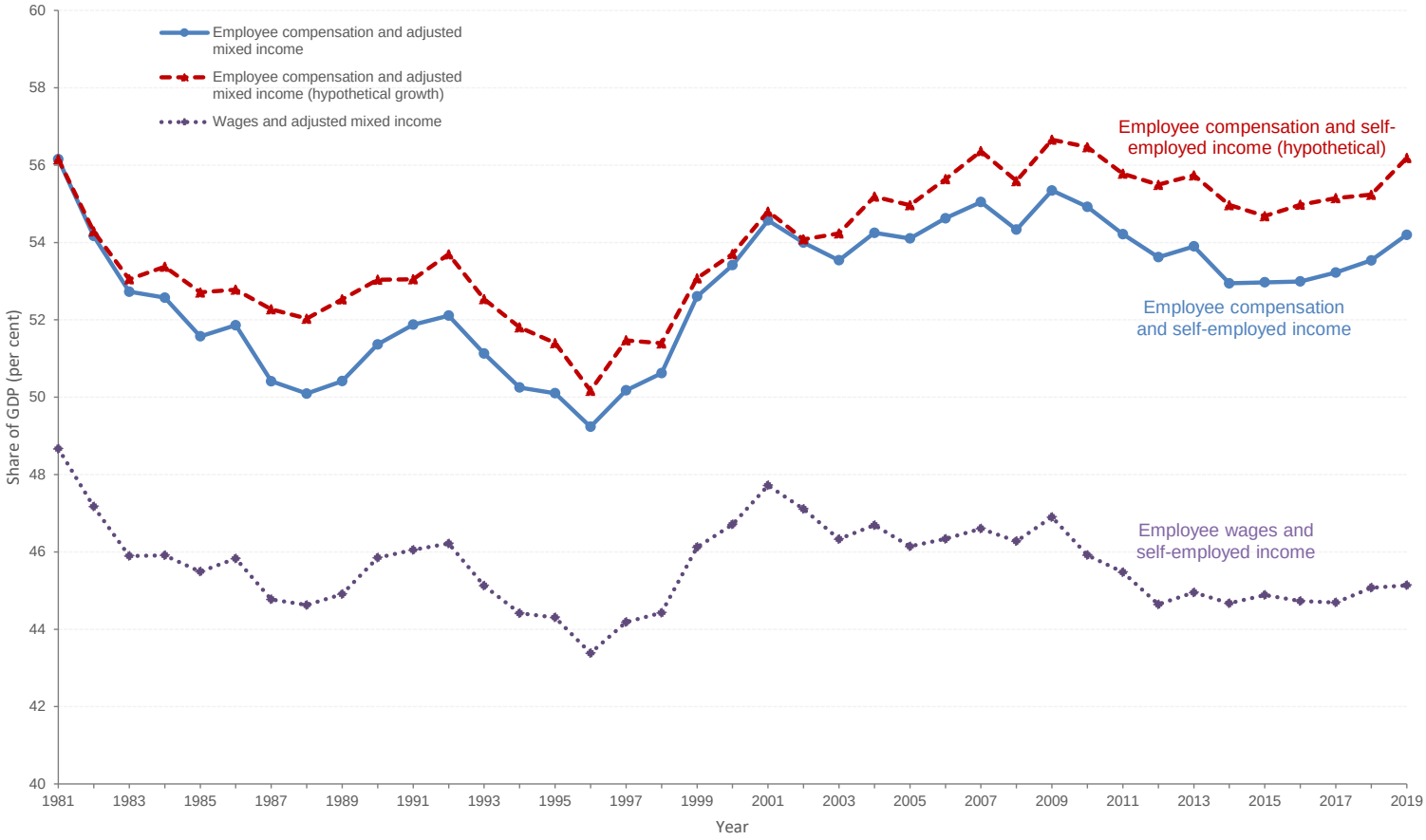
Notes: Historical Orbis data. “Leaders” indicates employment weighted growth in log(value added per worker) in firms in the top 5 percentiles. “Followers” defined as leaders except for firms in the rest of the distribution

And mean and median employee pay growth also stagnated: UK's major problem is low productivity



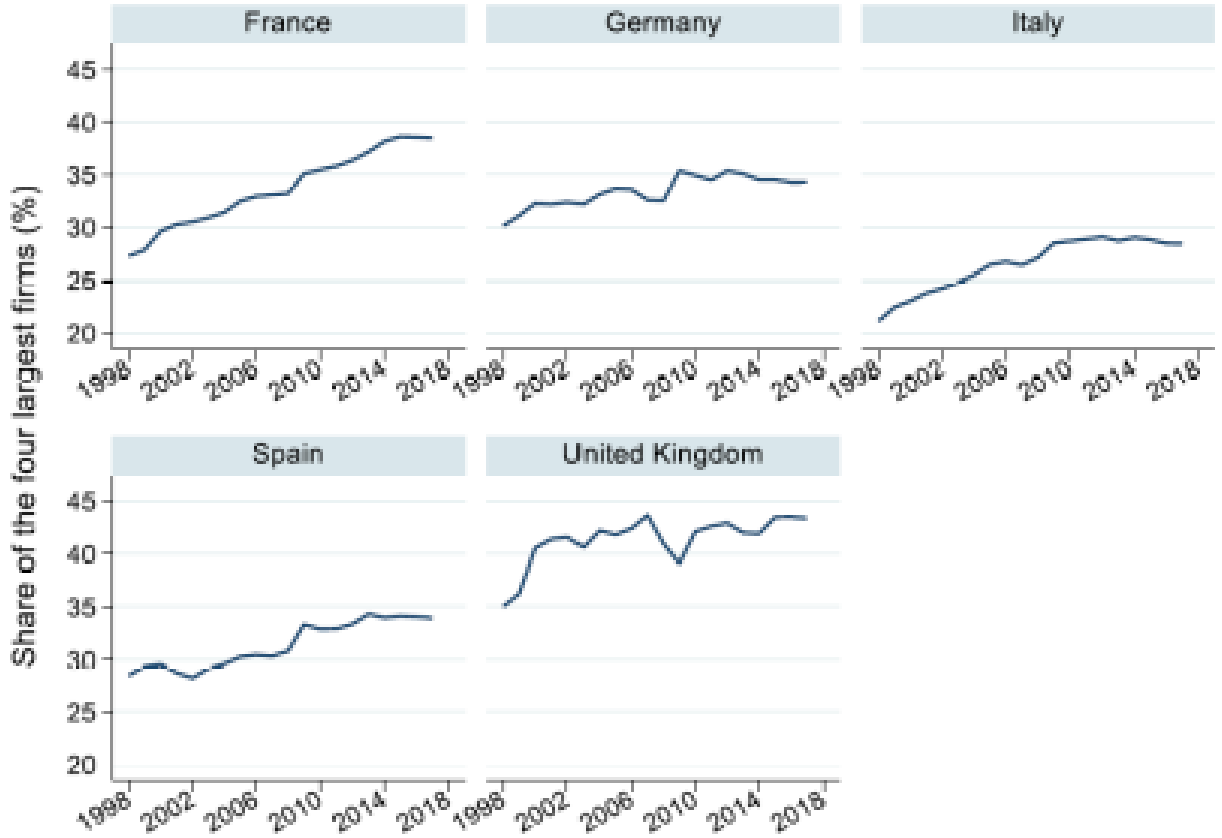
Source: ONS, LFS, and OECD
Notes: Employee compensation = Employee wages + non-wage compensation (employers' NI contributions, employers' pension contributions…). Median wages are deflated with the CPI deflator, all other series with the GDP deflator.

UK Wage Share of GDP falls by about 3.5 percentage points since 1981



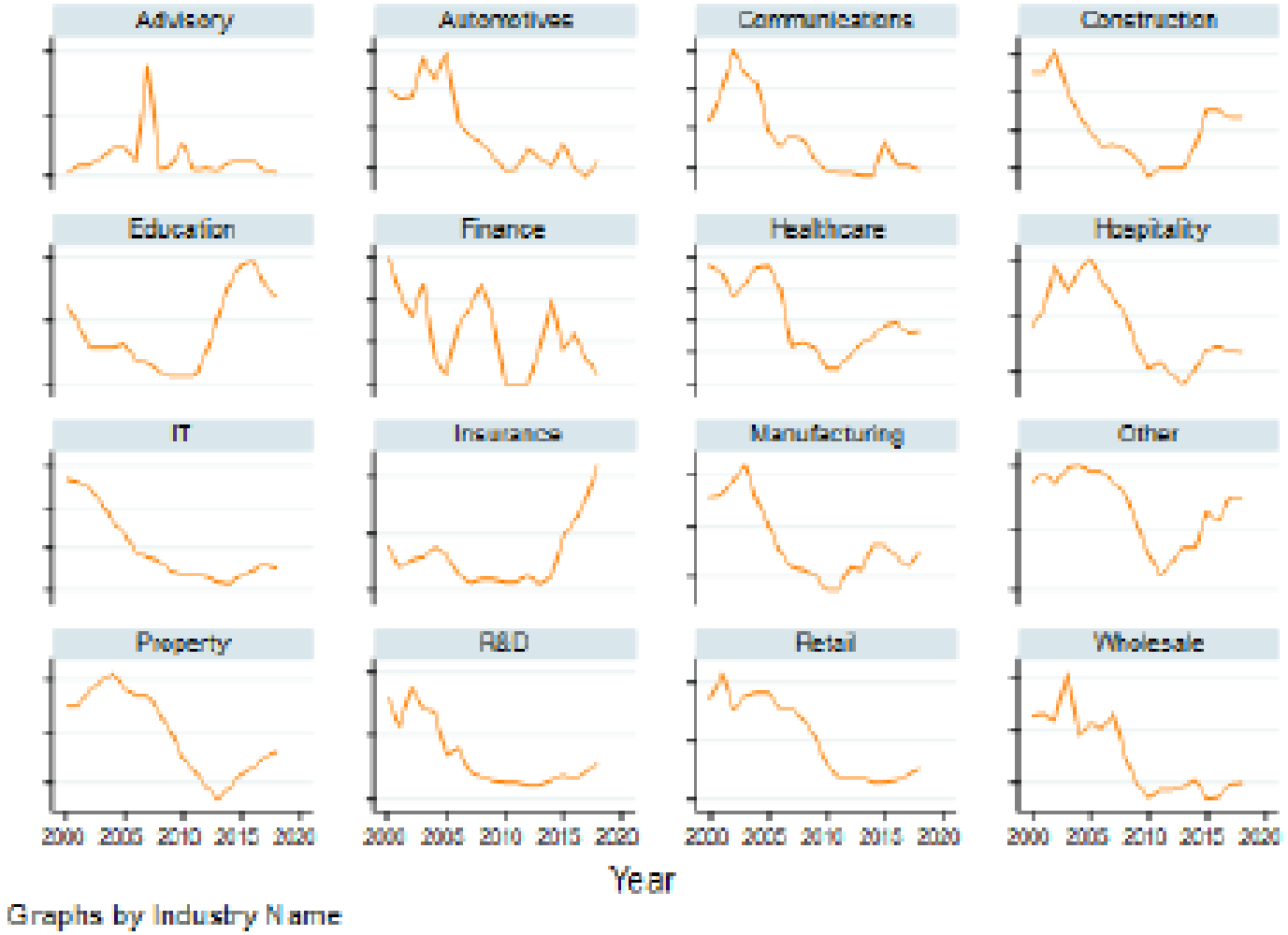
Source: Teichgraeber and Van Reenen (2021) using ONS and OECD data.
Note: The solid line with circles (blue) shows compensation and adjusted mixed income (an estimate for self-employed income that can be classified as labour income) over GDP. The dotted (purple) line shows wages and adjusted mixed income over GDP, i.e. it excludes non-wage benefits of employees (employers' pension contributions, employers' National Insurance payments etc.). The red (dashed) line takes the value of the blue series in 1981, and then applies a hypothetical growth rate for the years after. The hypothetical growth rate equals the growth of employee compensation per hour over growth of GDP per hour. This is to approximate how the labour share could have evolved if all workers (including self-employed) had experienced growth of income equal to that of employees.

Industrial Concentration seems to have risen



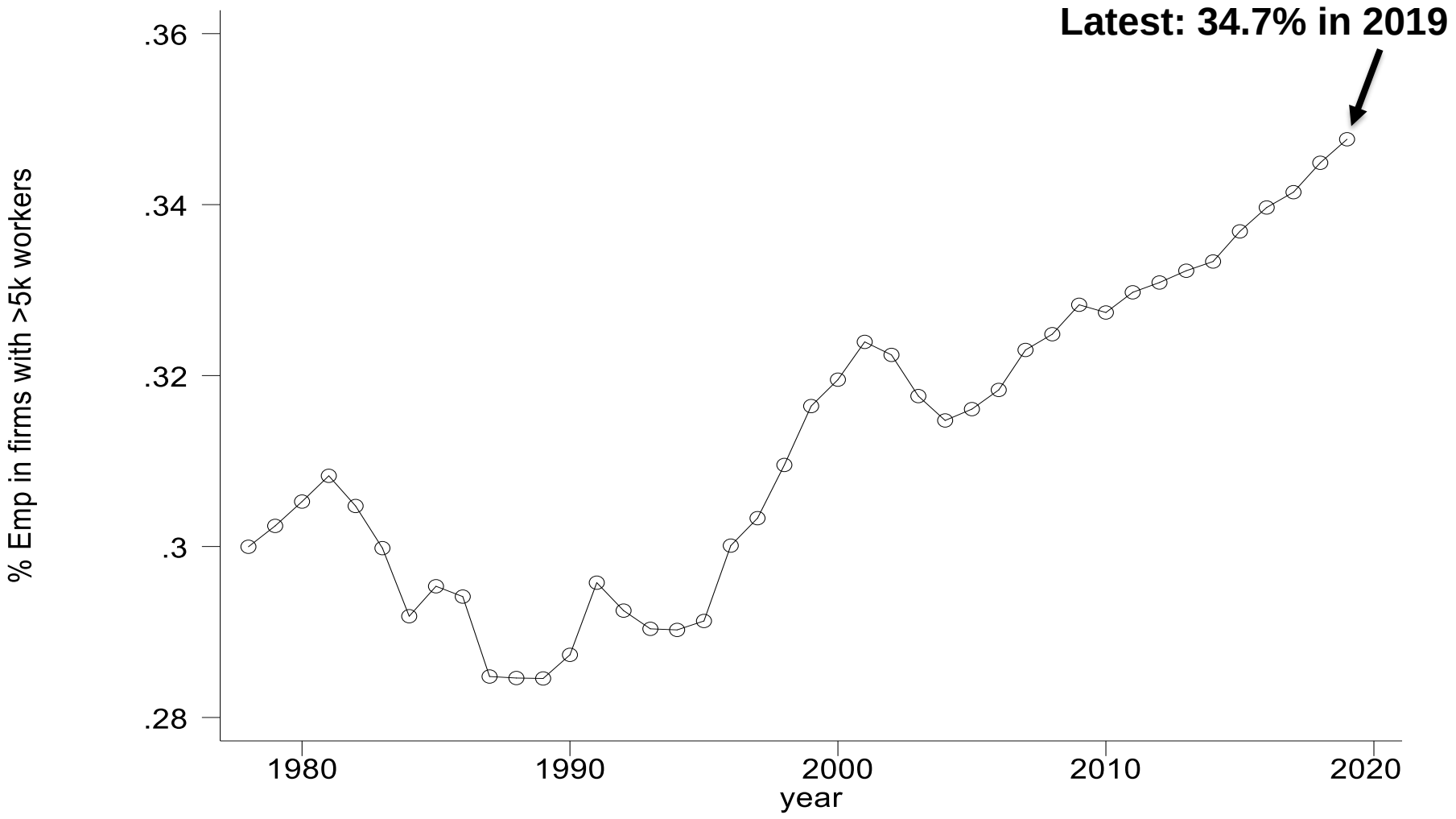
Source: Koltay, Lorincz and Valletti, 2020.

Percentage of turnover in UK start-ups seems to be generally falling (like US)



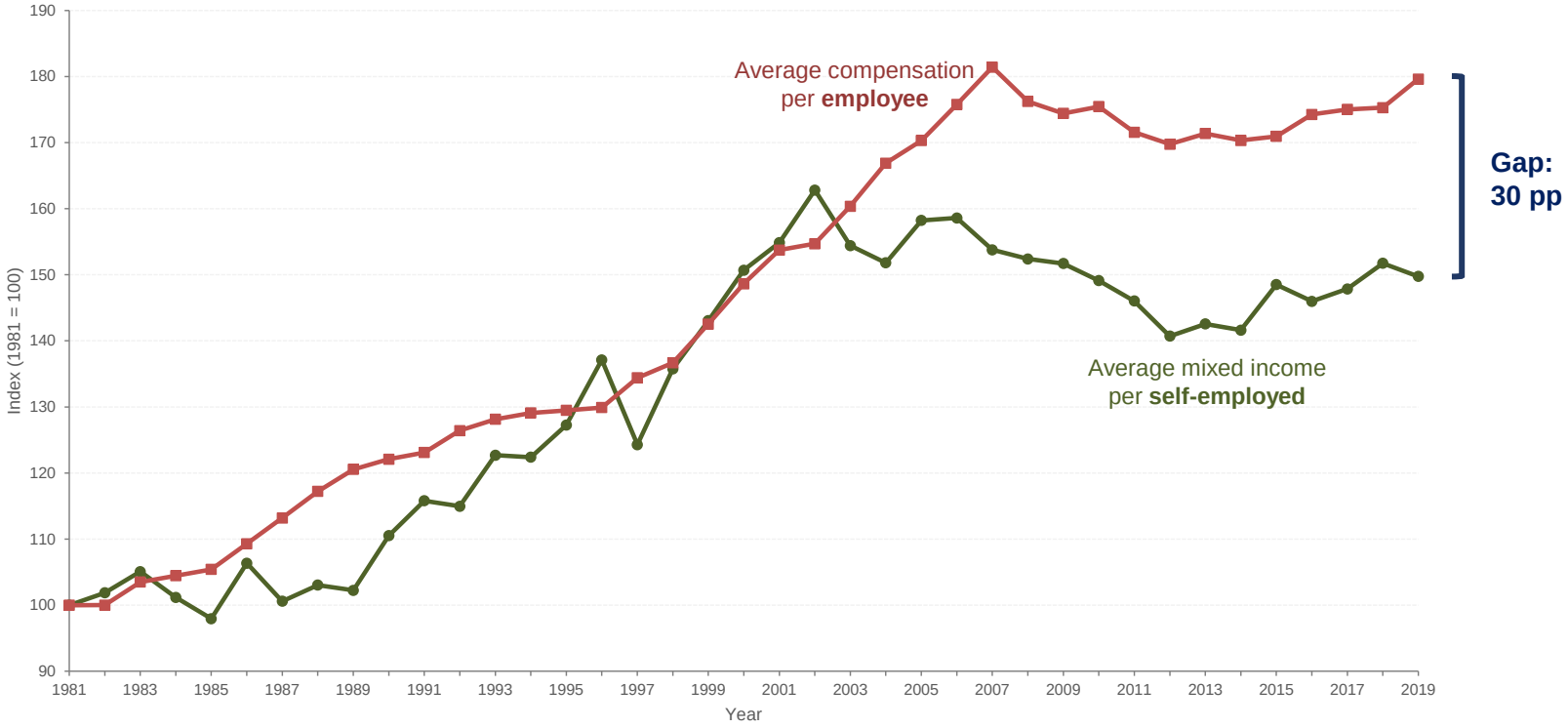
Source: Davies (2019), BSD

Since mid '80s Big Firms getting bigger: % jobs in firms with 5,000+ workers rose from ~28% in 1987 to ~35% in 2019



Source: US Business Dynamics Statistics (2021), https://www.census.gov/data/datasets/time-series/econ/bds/bds-datasets.html

But Self-Employed income has grown much slower than that of employees



Source: ONS and OECD
Notes: Average compensation is total employee compensation divided by number of employees. Average mixed income is total mixed income divided by number of self-employed. Both series are deflated with the CPI.